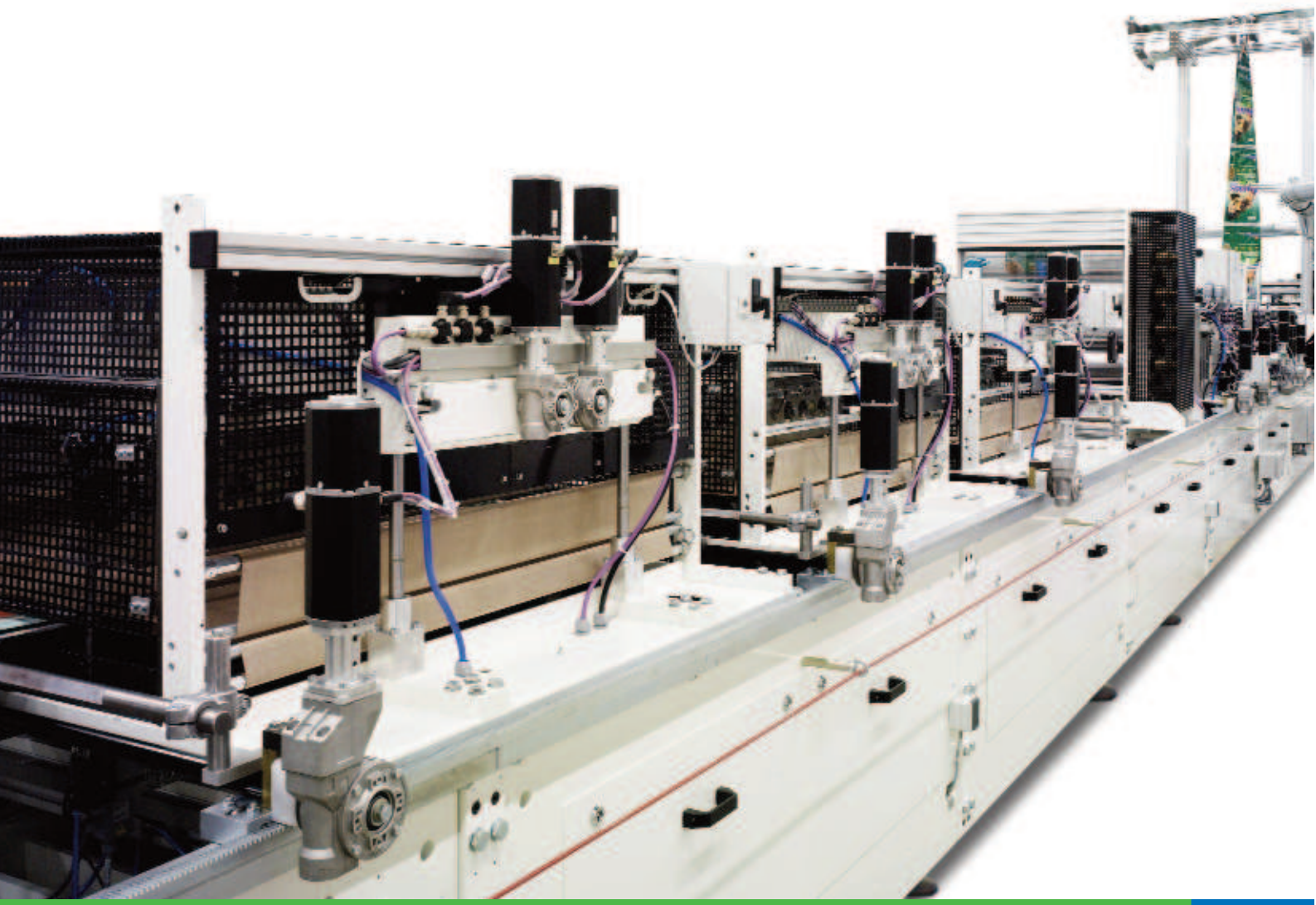
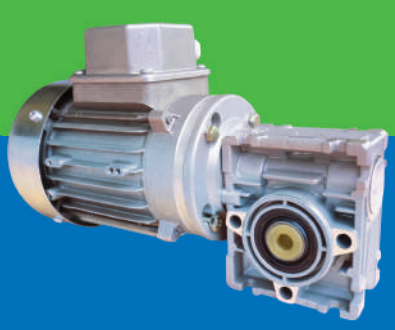
VATHAUER
ANTRIEBSTECHNIK



Drive Technology



About us

MSF-Vathauer Anriebstechnik GmbH & Co KG produces since 1978 mechanical, electrical and electronical drive technology in Detmold (Headquarters) and Oborniki (Poland), In this time MSF-Vathauer developed itsselfes to the technology leader for decentralized drives.

MSF-Vathauer provides not only mechanical drives technology to its customers. The focus is upon the development, manufacturing and sales of electronical drives.

Further provides MSF innovative solutions for saving energy resources like heat due to heat recovery with rotary heat exchanger and intelligent drives for conveying systems.

We are able to provide our customers a fast, flexible and suitable technical solution due to our high in-house production depth.

On approximately 6000 m2 MSF-Vathauer research, develop and produce devices for the measurement and test engineering, for the control technique and for the drive technology.

Highly trained and motivated teams in our research and development department and at our production lines as soon as many years experiance with the development and customising of drive technology guarantee your success.

We are train our employees, representatives and customers within own training facilities continuously.

Our own EMC-Laboratory guarantees a high EMC safety standard for all customised and standard devices.

We are looking forward to close and successful cooperation.

MSF-Vathauer Antriebstechnik GmbH & Co KG

Stand: November 2011

Frequency converter VECTOR 20

Frequency converter VECTOR 20

The Vector 20 is a Frequency Converter with a modulated attachment, which offers an excellent market value for goods by using in coplex appliations.

With extra integrated modules it can be alternated for a controlled drive with vector-control or up-graded to a positioning type. The device shows a protection class of IP 20.

The Frequency Converter VECTOR 20 is available from 0.09KW to 3KW single phase. And 0.75KW till 3 KW three-phase.

Due to two different installation positions "A" and "B" the Frequency Converter can be integrated in any controled enclosure.

Following pluggable modules are availabe

- RS 232 or RS 485 interface module
- USB interface module
- I/O interface module
- Positioning module
- CANopen bus module
- Profi Bus module
- Ethernet module
- Blue-tooth module

Plain text LC-Display

This plain text display allows to parameterize the converter and adjust all parameter. Further the converter can controll by this display with only two push button even when the application does not require digital inputs.

Frequency converter VECTOR 20

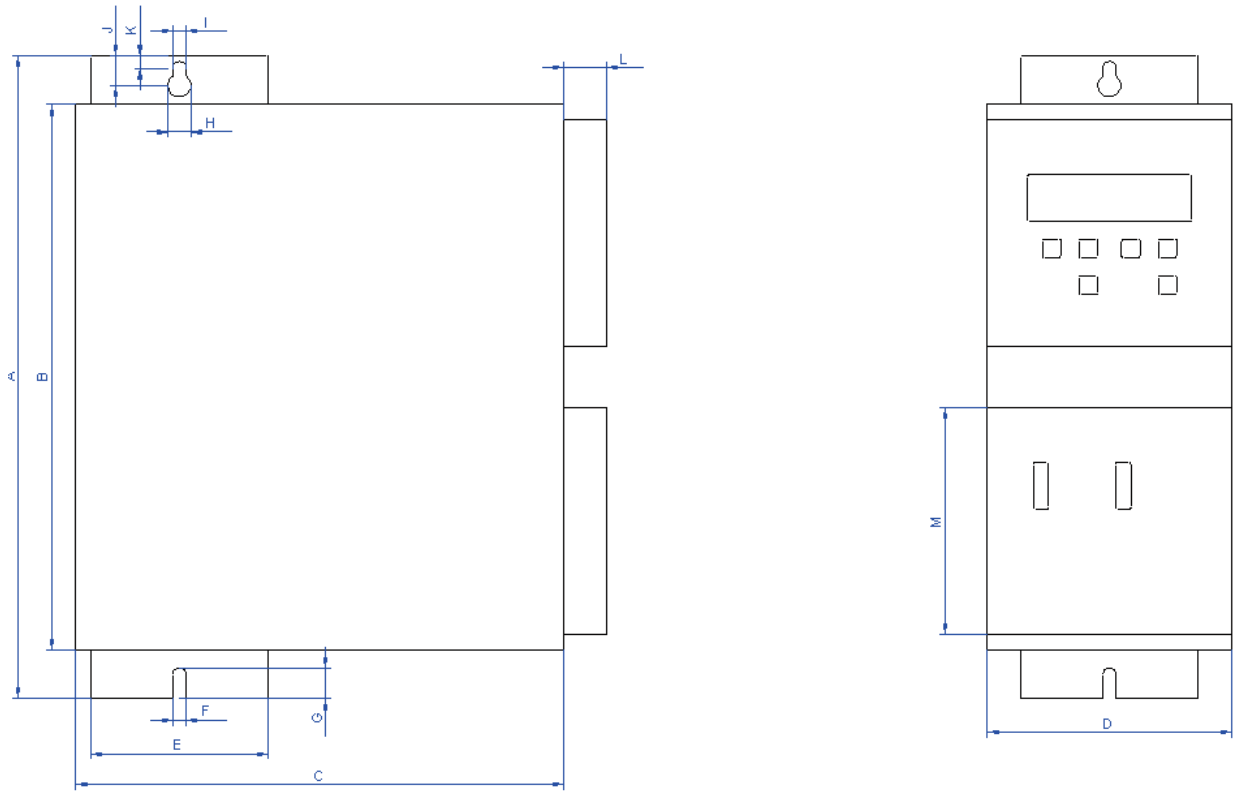
Type	Vector 90	Vector 120	Vector 180	Vector 250	Vector 370
Output power	0,2 kVA	0,25 kVA	0,35 kVA	0,45 kVA	0,85 kVA
Motor power	0,09 kW	0,12 kW	0,18 kW	0,25 kW	0,37 kW
Rated current	1 A	1,1 A	1,3 A	1,5 A	2,2 A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz
Line In / Motor filter	internal	internal	internal	internal	internal
Rated voltage	230 V	230 V	230 V	230 V	230 V
Protection class	IP 20	IP 20	IP 20	IP 20	IP 20
Ambient temperature	40 °C	40 °C	40 °C	40 °C	40 °C

Type	Vector 550	Vector 750	Vector 1100	Vector 1500	Vector 2200
Output power	1,3 kVA	1,6 kVA	2,2 kVA	2,7 kVA	3,9 kVA
Motor power	0,55 kW	0,75 kW	1,1 kW	1,5 kW	2,2 kW
Rated current	3,4 A	4,0 A	5,5 A	7,0 A	10 A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz
Line In / Motor filter	intern	intern	intern	intern	intern
Rated voltage	230 V	230 V	230 V	230 V	230 V
Protection class	IP 20	IP 20	IP 20	IP 20	IP 20
Ambient temperature	40 °C	40 °C	40 °C	40 °C	40 °C

Type	Vector 750 / 3	Vector 1100 / 3	Vector 1500 / 3	Vector 2200 / 3	Vector 3000 / 3
Output power	1,6 kVA	2,0 kVA	2,8 kVA	4,0 kVA	5,3 kVA
Motor power	0,75 kW	1,1 kW	1,5 kW	2,2 kW	3 kW
Rated current	2,3 A	3,5 A	4,1 A	5,8 A	7,6 A
Output voltage	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Output frequency	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz
Line In / Motor filter	Intern	Intern	Intern	Intern	Intern
Rated voltage	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Protection class	IP 20	IP 20	IP 20	IP 20	IP 20
Ambient temperature	40 °C	40 °C	40 °C	40 °C	40 °C

subject to qualifications

Frequency converter VECTOR 20



Type	Dimensions VECTOR 20			
	VECTOR 090 - 750	VECTOR 1100 - 2200	VECTOR 750/3	VECTOR 1100/3 - 3000/3
A	185	236	210	236
B	159	205	178	205
C	160	160	160	160
D	80	80	80	80
E	58	58	58	58
F	4,5	4,5	4,5	4,5
G	10	10	10	10
H	7,5	7,5	7,5	7,5
I	4,5	4,5	4,5	4,5
J	9,5	9,5	9,5	9,5
K	4,2	4,2	4,2	4,2
L	14	14	14	14
M	74	74	74	74

subject to qualifications

Snap-on modules for Frequency converter VECTOR

Key pad with plain text display

This snap on key pad is used for the parameterization of the Frequency Converter VECTOR 20.

The key pad contains a plain text display to make the parameterization much easier.
All parameter are displayed in a menue and can be change via arrow keys.
The saving process can start with the "OK" button. The user can controll the VECTOR 20 via the integrated "Start"- and"Stop" button.

I / O - Module

The I/O module provides digital and analog In- and Outputs. This module must be connect on each VECTOR 20 to control the device via the digital In- and Outouts.

The module provides following I/O's :
5 digital Inputs, 1 digital Output, 1 analog Output, LED-Status display

Positioning - Module

The positioning module provides the option to control standard asynchronous motors with an integrated incremental encoder and control an AC-Servo drive with feedback option.
Several positions can be changed via a PC-software or a superordinate controller.

Communication - Module

The VECTOR 20 communicates with a PC via this module.

All parameters can be change via a RS 232 interface module or a USB-module. Further some controlling tasks can be realised between PC and VECTOR 20.
For a Ethernet-Network, there is a Ethernet-module available to communicate with the Frequency Converter via a TCP/IP Ethernet-network.
All parameter changes of VECTOR 20 can also be realised with the snap on blue tooth module.

- RS 232
- USB
- Ethernet
- Blue tooth

Frequency converter VECTOR eco / 1-phase

Frequenzumrichter VECTOR eco

The Frequency Converter VECTOR eco 44 was developed for flat conveyor, climbing conveyor, hopper, break conveyor, Z-conveyor, small conveyors and roller conveyor.

The compact design enables an installation on any conveyor or machines.

The protection class IP 44 protects the inside electronic and provides a broad operational area.

By means of its integrated control elements the conveyor speed can be adjust or the equipment be switched off by an isolator.

An additional START / STOP input is integrated.

A comprehensive thermal protection of the motor is attainable by means of in the motor inserted temperature sensors (e.g. PTC resistors or bimetal switches).

Accessories

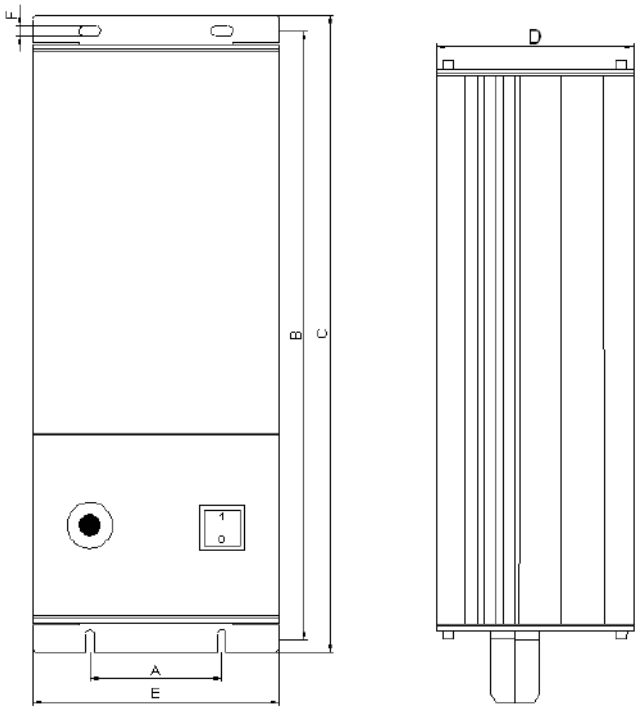
- Connected Line In cable
- Connected motor cable
- Connected shielded control cable
- Integrated emergency stop button
- Integrated undervoltage release switch

Further operation units on request.

Frequency converter VECTOR eco / 1-phase

Typ	VECTOR eco 090	VECTOR eco 120	VECTOR eco 180	VECTOR eco 250	VECTOR eco 370	VECTOR eco 550	VECTOR eco 750
Output power	0,2 kVA	0,33 kVA	0,45 kVA	0,55 kVA	0,85 kVA	1,3 kVA	1,6 kVA
Motor power	0,09 kW	0,12 kW	0,18 kW	0,25 kW	0,37 kW	0,55 kW	0,75 kW
Rated current	1 A	1,1 A	1,3 A	1,5 A	2,2 A	3,4 A	4 A
Output voltage	230V	230V	230V	230V	230V	230V	230V
Output frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Line In / Motor filter	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44
Ambient temperature	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C

subject to qualifications



Type	Dimensions VECTOR eco
A	65 mm
B	237 mm
C	250 mm
D	70 mm
E	112 mm
F	5 mm

subject to qualifications

Frequency converter VECTOR 54 / 1-phase

Frequency converter VECTOR 54 / 1-phase

The Vector 54 is a Frequency Converter with a modulated attachment, which as a standard offers excellent market value for goods by using simple applications.

With extra integrated modules it can be alternated for a controlled drive with vector-control or upgraded to a positioning type. The device offers a protection class of IP 54.

The Frequency Converter is available from 0.09KW to 0.75KW single-phase.

The closed construction of the VECTOR 54 execution meets the increasing demand for decentralised driving components.

For the user this will mean

- No additional control enclosure
- Fast installation
- High protection class IP 54
- A saving of space
- Reduced size of control enclosure
- Integrated operation elements (Main switch, Emergency stop button)
- Various possible mounting arrangements
- Integrated RS 232 or RS 485 interface
- Integrated I/O module
- Integrated On/Off-switch and set point otentiometer
- Integrated key pad

Especially to your application we implement following options

- Positioning module
- CANopen bus module
- Profi bus module
- Ethernet module
- Emergency stop button with undvoltage release switch
- Tailored Line In cable and motorcable
- Connectors for Line In, Motors and I/O's

Frequency converter VECTOR 54 / 1-phase

Frequency converter VECTOR 54 / 1-phase

The Vector 54 is a Frequency Converter with a modulated attachment, which as a standard offers excellent market value for goods by using simple applications.

With extra integrated modules it can be alternated for a controlled drive with vector-control or upgraded to a positioning type. The device offers a protection class of IP 54.

The closed construction of the VECTOR 54 execution meets the increasing demand for decentralised driving components.

This converter is available from 1.1 kW till 2.2 kW 1-phase.

Advantages for the user

- No additional switch enclosure
- Direct mounting onto machines
- High protection class IP54
- Minimizing of switch enclosures
- Integrated operating elements
- Integrated signal buses (Profibus DP, AS-interface, etc)
- Integated RS 232 interface
- Integrated main switch and set point potentiometer

Especially to your application we implement following options

- Positioning module
- CANopen bus module
- Profi bus module
- Ethernet module
- Emergency stop button with undvoltage release switch
- Tailored Line In cable and motorcable
- Connectors for Line In, Motors and I/O's

Frequency converter VECTOR 54 / 1-phase

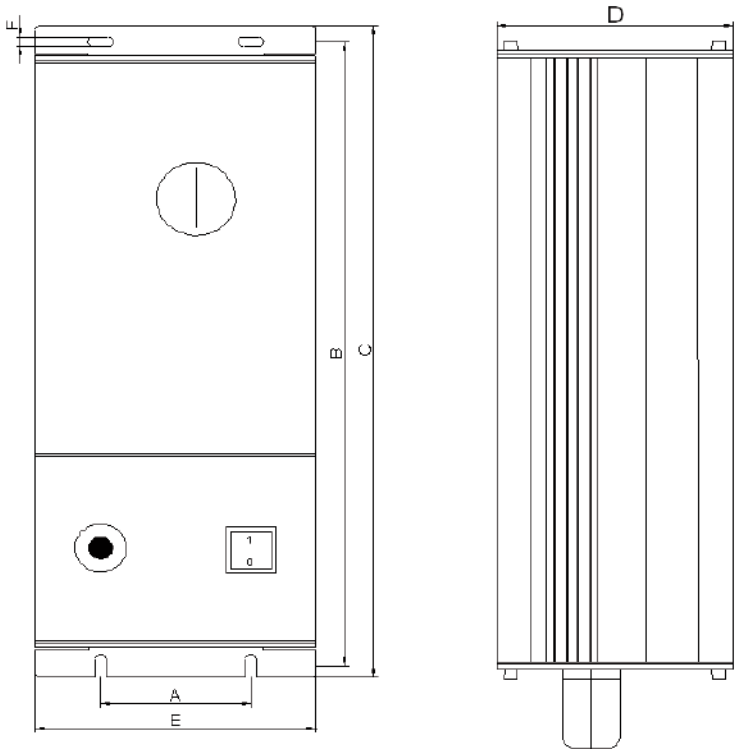
Type	Vector 54 / 090	Vector 54 / 120	Vector 54 / 180	Vector 54 / 250
Output power	0,2 kVA	0,33 kVA	0,45 kVA	0,55 kVA
Motor power	0,09 kW	0,12 kW	0,18 kW	0,25 kW
Rated current	1 A	1,1 A	1,3A	1,5 A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz
Line In / Motor filter	Intern	Intern	Intern	Intern
Rated voltage	230 V	230 V	230 V	230 V
Protection class	IP 54	IP 54	IP 54	IP 54
Ambient temperature	0 – 40 °C	0 – 40 °C	0 – 40 °C	0 – 40 °C

Type	Vector 54 / 370	Vector 54 / 550	Vector 54 / 750
Output power	0,85 kVA	1,3 kVA	1,6 kVA
Motor power	0,37 kW	0,55 kW	0,75 kW
Rated current	2,2 A	3,4 A	4 A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz
Line In / Motor filter	Intern	Intern	Intern
Rated voltage	230 V	230 V	230 V
Protection class	IP 54	IP 54	IP 54
Ambient temperature	0 – 40 °C	0 – 40 °C	0 – 40 °C

subject to qualifications

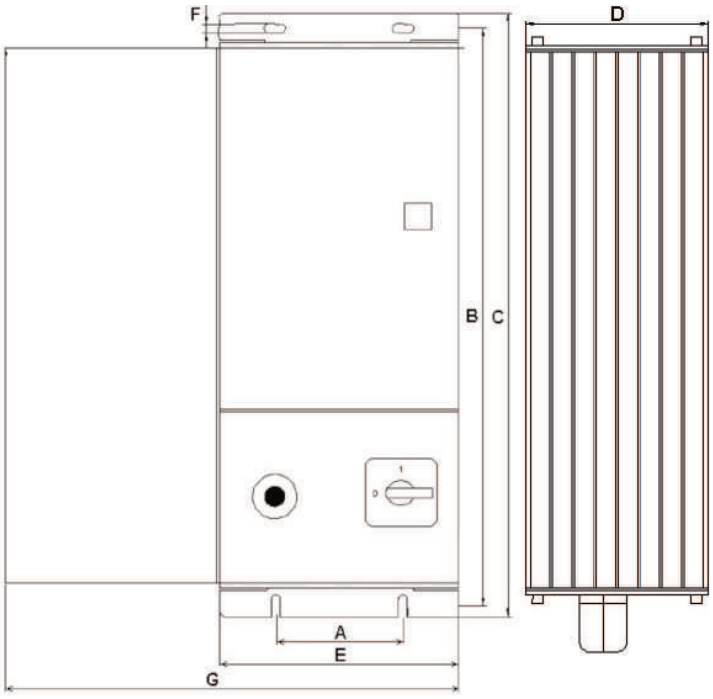
Type	Vector 54 / 1100	Vector 54 / 1500	Vector 54 / 2200
Output power	0,2 VA	0,33 VA	0,45 VA
Motor power	1,1 kW	1,5 kW	2,2 kW
Rated current	4,5 A	6,0 A	8,7A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz
Line In / Motor filter	Intern	Intern	Intern
Rated voltage	230 V	230 V	230 V
Protection class	IP 54	IP 54	IP 54
Ambient temperature	0 – 40 °C	0 – 40 °C	0 – 40 °C

Frequency converter VECTOR 54 / 1-phase



Type	Dimensions VECTOR 54 0,09 - 0,75 kW
A	65 mm
B	290 mm
C	312 mm
D	90 mm
E	112 mm
F	5 mm

subject to qualifications



Type	Dimensions VECTOR 54 1,1 - 2,2 kW
A	65 mm
B	340 mm
C	350 mm
D	90 mm
E	112 mm
F	5 mm
G	210mm

subject to qualifications

Frequency converter VECTOR 54 / 3-phase

Frequency converter VECTOR 54 / 3-phase

The Vector 54 is a Frequency Converter with a modulated attachment, which as a standard offers excellent market value for goods by using simple applications.

With extra integrated modules it can be alternated for a controlled drive with vector-control or upgraded to a positioning type. The device offers a protection class of IP 54.

The closed construction of the VECTOR 54 execution meets the increasing demand for decentralised driving components.

This converter is available from 0.75 kW till 3.0 kW 3-phase.

Advantages for the user

- No additional switch enclosure
- Direct mounting onto machines
- High protection class IP54
- Minimizing of switch enclosures
- Integrated operating elements
- Integrated signal buses (Profibus DP, AS-interface, etc)
- Integated RS 232 interface
- Integrated main switch and set point potentiometer

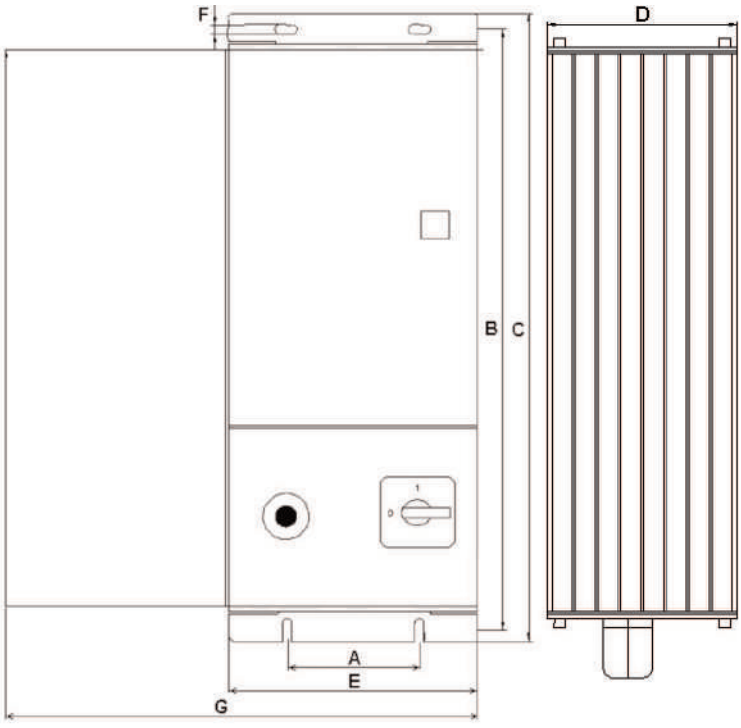
Especially to your application we implement following options

- Positioning module
- CANopen bus module
- Profi bus module
- Ethernet module
- Emergency stop button with undvoltage release switch
- Tailored Line In cable and motorcable
- Connectors for Line In, Motors and I/O's

Frequency converter VECTOR 54 / 3-phase

Type	Vector 54 750	Vector 54 1100	Vector 54 1500	Vector 54 2200
Output power	2,3 A	3,5 A	4,1 A	5,8 A
Motor power	0,75 kW	1,1 kW	1,5 kW	2,2 kW
Rated current	4 A	4,5 A	6,0 A	8,7A
Output voltage	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Output frequency	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz
Line In / Motor filter	Internal	Internal	Internal	Internal
Rated voltage	400 V	400 V	400 V	400 V
Protection class	IP 54	IP 54	IP 54	IP 54
Ambient temperature	0 – 40 °C	0 – 40 °C	0 – 40 °C	0 – 40 °C

subject to qualifications



Type	Dimensions VECTOR 54
A	65 mm
B	340 mm
C	350 mm
D	90 mm
E	112 mm
F	5 mm
G	210mm

subject to qualifications

Single-Phase-Regulator SPR

Single - Phase - Regulator SPR

- Speed control of singe-phase motors
- Robust aluminium casing
- Protection class IP44 or IP54
- Motortemperature monitoring
- Device temperature monitoring
- Short circuit protection
- Fast and easy operations
- Preset settings
- Integrated Line In filter

The Single-Phase-Regulator SPR was constructed for all single-phase motors with start and operation capacitor and is eays to use. The SPR is available from 0.09 kW till 1.5 kW.

By its compact design, the SPR is mountable in almost applications.

The protection class IP44 or IP54 protects its electronics for a wide range of applications.

The rotation speed of the single-phase motor is adjustable by the integrated set point potentiometer. Further the device is deactivated by the integrated main switch.

An additional digital input for START / STOP is available for external sensors.

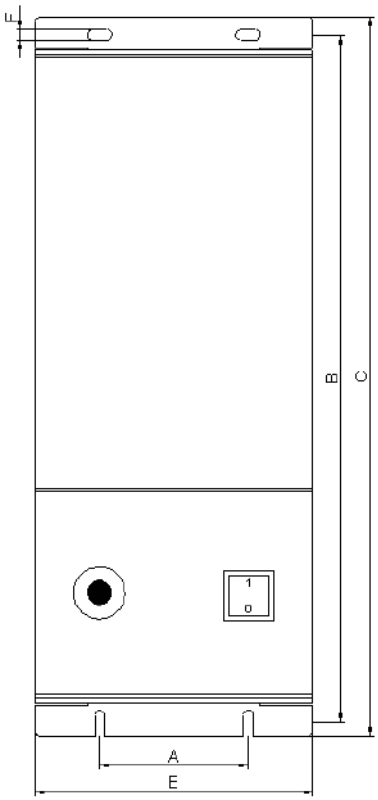
The connected motor is protected by the motor temperature monitoring if a temperature sensor was mounted. It can be a Bi-metall or thermistor.

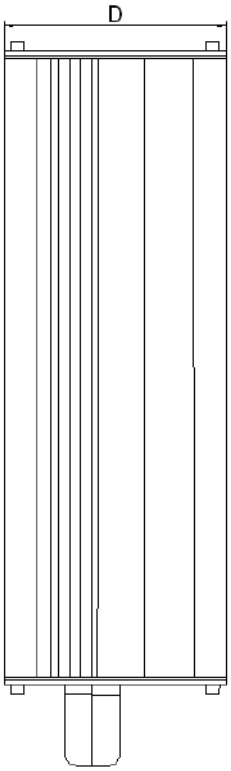
The applications are: blower, exhauster, air conditioning

Type	SPR 090	SPR 120	SPR 180	SPR 250	SPR 370	SPR 550	SPR 750	SPR 1100	SPR 1500
Motor power	0,09 KW	0,12 KW	0,18 KW	0,25 KW	0,37 KW	0,55 kW	0,75 kW	1,1 kW	1,5 kW
Rated output current	1,1 A	1,3 A	1,5 A	2 A	2,9 A	4,2 A	5,4 A	7,4 A	9,8 A
Power supply	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V
Protection class	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44
Ambient temperture	0 – 40°C	0 – 40°C	0 – 40°C	0 – 40°C	0 – 40°C	0 – 40°C	0 – 40°C	0 – 40°C	0 – 40°C
Humidity	20 – 90%	20 – 90%	20 – 90%	20 – 90%	20 – 90%	20 – 90%	20 – 90%	20 – 90%	20 – 90%
Power loss	20 Watt	24 Watt	28 Watt	30 Watt	36 Watt	40 Watt	45 Watt	80 Watt	100 Watt

subject to qualifications

Single-Phase-Regulator SPR





Type	Dimensions SPR 0,09 kW - 1,5 kW
A	65 mm
B	237 mm
C	250 mm
D	70 mm
E	112 mm
F	5 mm

subject to qualifications

Three-Phase-Regulator TPR

Three - Phase - Regulator TPR

- Energy saving technology
- Easy and quick installation
- Smooth speed controller for asynchronous motors
- Potential free relay output
- Robust aluminium casing
- Lockable master switch
- Protection class IP44 or IP54
- Motor temperature monitoring
- Device temperature monitoring

The Three-Phase Regulator (TPR) is a voltage controlled a.c. power controller for continuously speed adjustments of asynchronous motors.

The load can be ohmic load (heatings, lamps) or ohmic / inductive loads (fans, blowers).

The internal control stage galvanic seperated from the power supply. The internal power stage was desinged with high performed triac and TSE-wiring. Further all three phases and the direction of rotation are monitored by the TPR.

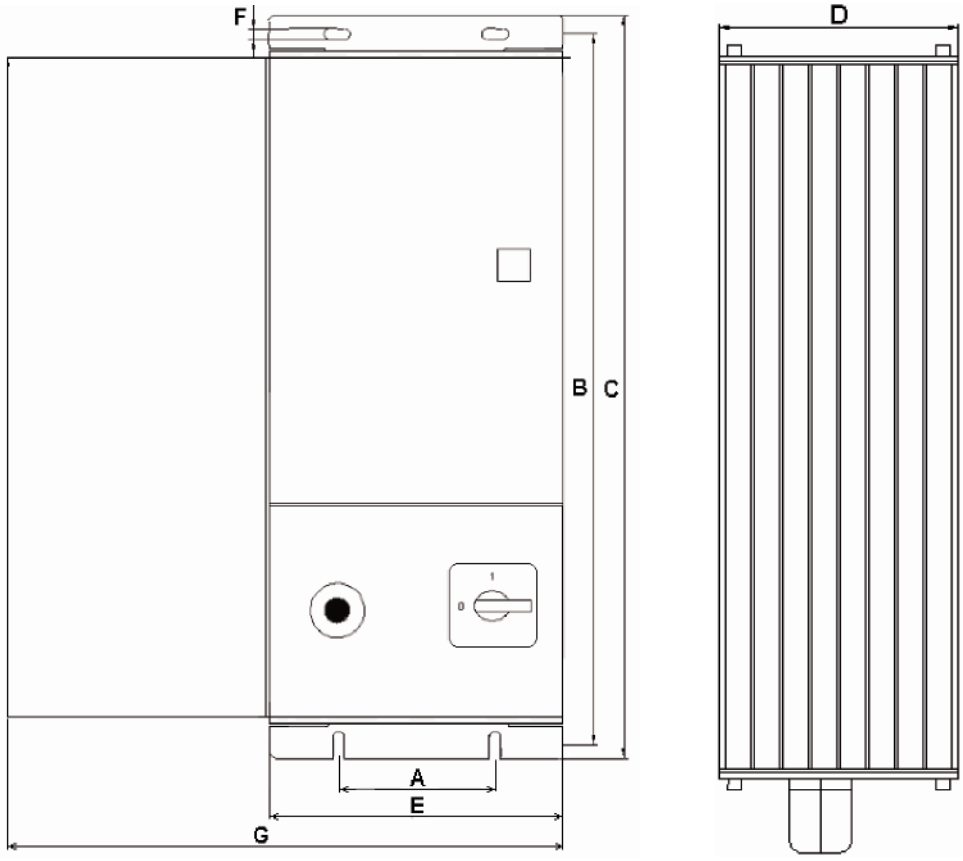
The set point is selectable by voltage +10V or by curent 0-20mA or 2-20mA.

The applications are: coils, heatings, blower, fans.

Type	TPR 090	TPR 120	TPR 180	TPR 250	TPR 370	TPR 550	TPR 750	TPR 1100	TPR 1500	TPR 2200	TPR 3000
Motor power	0,09 kW	0,12 kW	0,18 kW	0,25 kW	0,37 kW	0,55 kW	0,75 kW	1,1 kW	1,5 kW	2,2 kW	3,0 kW
Rated output current	0,3 A	0,45 A	0,6 A	0,85 A	1,1 A	1,45 A	1,85 A	2,6 A	3,5 A	5,0 A	6,6 A
Power supply	400V	400V	400V	400V	400V	400V	400V	400V	400V	400V	400V
Protection class	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
Ambient temperature	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C	0–40°C
Humidity	20–90%	20–90%	20–90%	20–90%	20–90%	20–90%	20–90%	20–90%	20–90%	20–90%	20–90%
Power loss	10 Watt	10 Watt	11 Watt	12 Watt	13 Watt	15 Watt	16 Watt	19 Watt	22 Watt	25 Watt	31 Watt

subject to qualifications

Three-Phase-Regulator TPR



Type	Dimension TPR
A	65 mm
B	300 mm
C	310 mm
D	90 mm
E	112 mm
F	5 mm

subject to qualifications

Digital clock timer DTSG 4

Digital clock timer DTSG 4

The digital clock timer DTSG 4 controls a 3phase drive with free available run and pause times from 000.1 - 9999 sec.

The DTSG allow to index a conveyor system with its free adjustable run and pause times.
The phases are switched during zero crossing to avoid high peak loads.
A menu structure simplifies the adjustment of the working parameters by using just two keys.
Moreover, an external trigger impulse may be connected for timed motor operations.
A one time release as well as repeated releases (retriggering) are possible.
All operational parameters are stored in a nonvolatile memory. The DTSG may be installed in various positions where it will recognize an up-down position through a mercury free switch and controls the display accordingly.

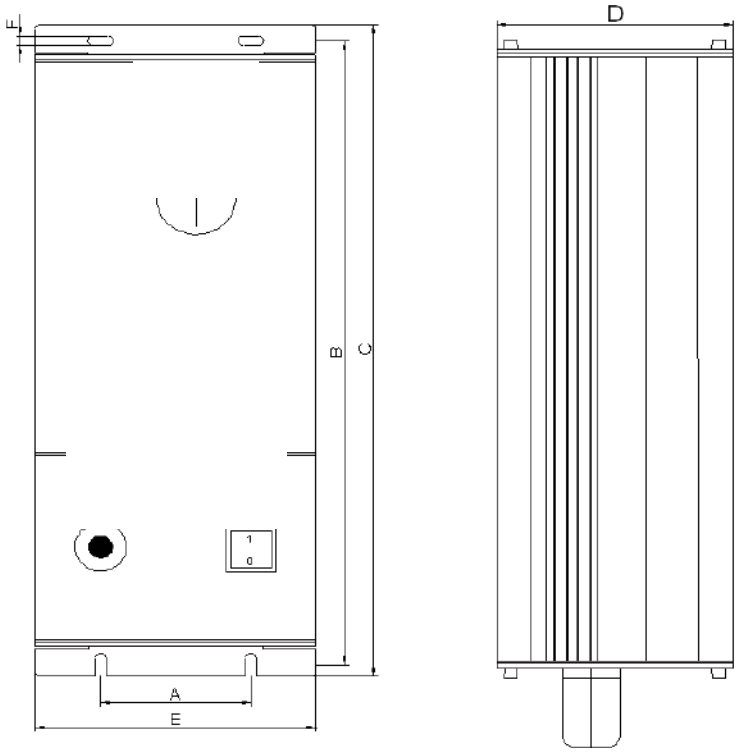
The DTSG shows following features

- Wolrd wide operation of DTSG
- High EMC performance by aluminium casing and integrated EMC filter
- Protection class IP54 or IP20
- Easy wiring of Sub-D connector for trigger input
- Various mounting position
- Pausing and running time adjustable from 0,1s bis 9999 sec.
- Retrigger impulse
- Adjustable debouncing for inputs
- Input for photo electric sensor
- Input for pushbutton for continuous speed

Typ e	DTSG 4
Power supply	400 V
Output power	max. 0,75 kW
Display	7-Segment LED-Anzeige
Operation	Zweiknopf
External Input	Potentialfrei oder 24 Vdc
Additional Output	Relais
Casing	Aluminium IP20 - IP54
Dimensions L x W x H	280 x 112 x 70 mm
Connection	Kabelverschraubungen
Resolution	0,1s
Max. adjustable time	9999 s
Net filter	Integriert

subject to qualifications

Digital clock timer DTSG 4



Type	Dimension DTSG 4
A	65 mm
B	267 mm
C	280 mm
D	70 mm
E	112 mm
F	5 mm

subject to qualifications

Digital rotary disc controller

Digital rotary disc controller DRV / DRT

The DRT was developed for the controlling of a rotary disc, the DRV was developed for the controlling of a rotary distribution rack for a three phase motors.

The phases are switched during zero crossing to avoid high peak loads.

A menu structure simplifies the adjustment of the working parameters by using just two keys only.

All operational parameters are stored in a nonvolatile memory. The DRT and the DRV may be installed in various positions where it will recognize an up-down position through a mercury free switch and controls the display accordingly.

The rotary disc controller shows following features

- Wolrd wide operation of
- High EMC performance by aluminium casing and integrated EMC filter
- Protection class IP54 or IP20
- Easy wiring of Sub-D connector for trigger input
- Various mounting position
- Pausing and running time adjustable from 0,1s bis 9999 sec.
- Retrigger impulse
- Adjustable debouncing for inputs
- Input for photo electric sensor
- Input for pushbutton for continuous speed

Typ e	DRT / DRV
Power supply	400V (Neutral wire is necessary for logic)
Output power	max. 0.75 kW
Display	7-Segment LED-Display
Operation	Two push button
External Input	Potentialfree or 24Vdc
Additional output	Relay
Casing	Aluminium IP20 - IP 54
Dimensions LxWxH	280x112x70mm
Connection	Cable glands
Resolution	0.1s
Max. runing time	9999s
Net filter	Integrated
Numbers of mould	0...999 sec.
Total numbers of cask	0...9999 sec.
Total running time of cage	0...999 sec.
Runnig time of conveyor	0...999 sec.
Running time of separating barrel	0...999 sec.
Sorting of bad parts	Integrated

subject to qualifications

Electronic motor strater MONOVENT for ventilation systems

Electronic motor strater MONOVENT

The MONOVENT was developed to controll th speeds of fans, blower, low preasure ventilator and high preasure ventilator.

The MONOVENT is a direct switch for asnychrnous motors and switch the motor ON and OFF fully electronically.

The device controlls the motor by an external 24V signal. The motor temperature is monitored by the MONOVENT due to a Bi-metall ot thermistor.

the MONVENT was type approved by TÜV-Rheinland.

The device is mountable onto an asynchronous motor by its robust aluminium casing.

A outside viewable LED signals various status of the device and motor.

Your advantages

- Type approoved
- Mounting onto asynchronous motors
- Power supply: 360V - 400V +/-15%
- Duty cycles: >500 / h
- Short circuit protected
- External control signal (24V) by M12 connector
- Viewable LED for device and motor status
- Standards due to EN 61010, EN 61800-3, EN 55011, EN 55014
- High EMC protection by aluminium casing
- metric cable glands für Line In

Electronic motor strater MONOVENT for ventilation systems

Type	**MONOVENT**
Power supply	360 V - 400 V +/- 15%
Net frequency	50 / 60 Hz
Motor power	2.2 KW
Output voltage	360 V - 400 V +/- 15%
Ambient temperature	0 - 40oC
Inputs	+24V start signal and motor temperature monitoring
Outputs	Ready for operation
Control	external +24V
Protection class	IP54
Standards	EN 61010 EN 61800-3 EN 55011 EN 55014

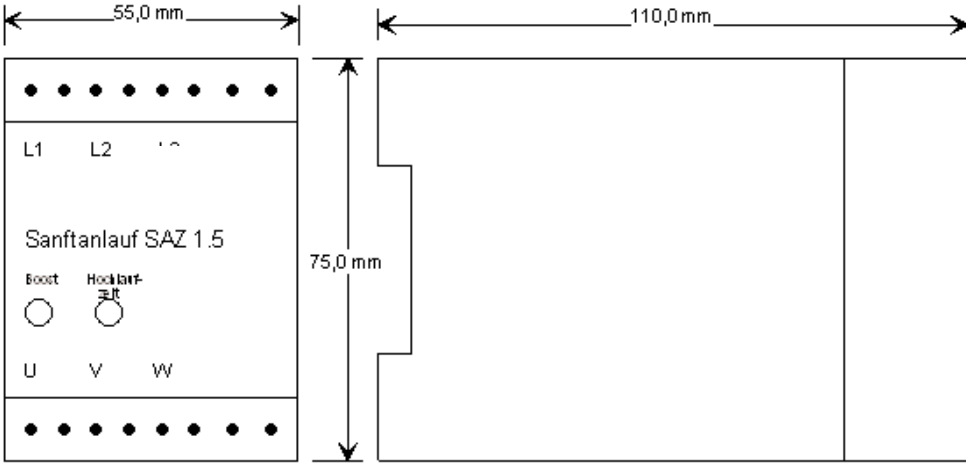
subject to qualifications

Motor soft starter SAE 3

Motor soft starter SAE 3

the soft start device SAE 3 a bi-directional power semi-conductor is integrated into one of the phases.
By contolling its firing angle in a time-dependant manner only a small current flows into one of the phases.
The current is steadily increased until the max. current flow angle is reached.
In this way the max. torque is present which is sufficient enough to enable a safe start even with drives having a large friction torque at standstill.
The current rise time (running-up time) and the initial torque of the motor can be seperately set.
The settingpotentiometers are accezsable by removing the front cover.
When the max. current flow angle is present after the adjustable starting time has elapsed a relay contact shortens the power semi-conductor, thus removing the starting electronics from the circuitry.
Since only 1 phase is influenced, an asymmetric rotating field is generated which causes a higher thermal loss of the motor.

Type	SAE 3 / 230 V	SAE 3 / 400 V
Power supply	230V	400V
Net frequency	50 Hz	50 Hz
Max. Motor power	1.1 kW	1.5 – 3.0 kW
Start time	0.3 s – 20 s	0.3 s – 20 s
Storage temperature	- 20 °C - 75 °C	- 20 °C - 75 °C
Operating temperature	0°C - + 40°C	0°C - + 40°C
Protection class	IP 20	IP 20



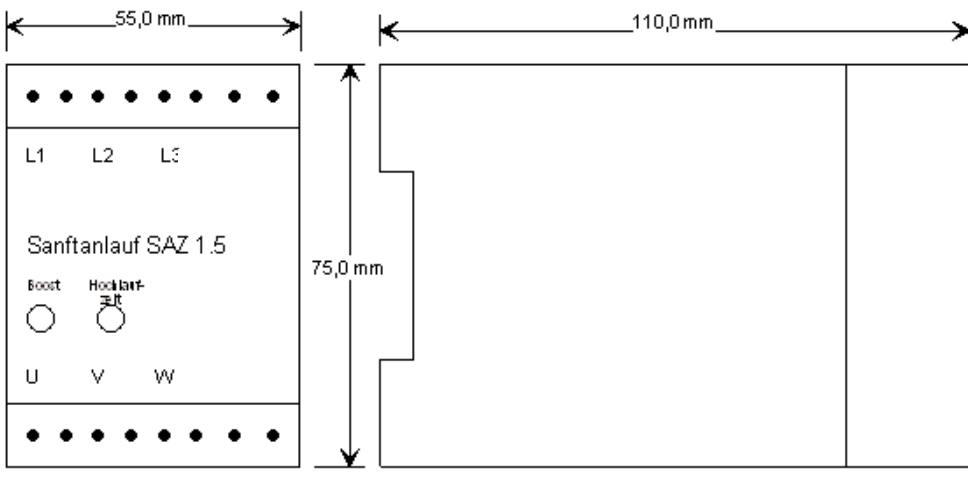
subject to qualifications

Motor soft starter SAZ 3

Motor soft starter SAZ 3

With the soft start device SAZ 3 a bi-directional power semi-conductor is integrated into two of the phases.
By contolling its firing angle in a time-dependant manner only a small current flows into one of the phases.
The current is steadily increased until the max. current flow angle is reached.
In this way the max. torque is present which is sufficient enough to enable a save start even with drives having a large friction torque at standstill.
The current rise time (running-up time) and the initial torque of the motor can be seperately set.
The settingpotentiometers are accezsable by removing the front cover.
When the max. current flow angle is present after the settable starting time has elapsed a relay contact shortens the power semi-conductor, thus removing the starting electronics from the circuitry.

Type	SAZ 3 / 230 V	SAZ 3 / 400 V
Power supply	230 V	400 V
Net frequency	50 Hz	50 Hz
Max. Motor power	1,1 kW	1,5 – 3,0 kW
Start time	0,3 s – 20 s	0,3 s – 20 s
Storage temperature	- 20 °C - 75 °C	- 20 °C - 75 °C
Operating temperature	0°C - + 40°C	0°C - + 40°C
Protection class	IP 20	IP 20



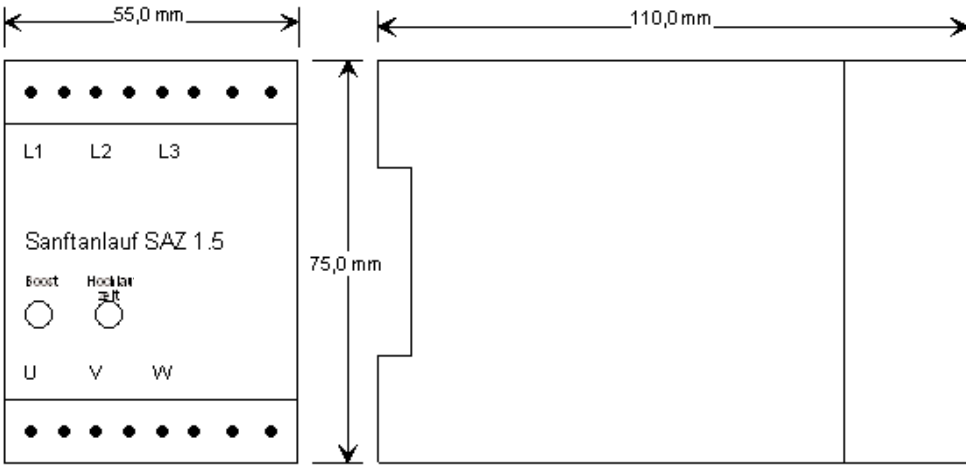
subject to qualifications

Motor soft stater SSAZ 3

Motor soft starter SSAZ 3

The motor soft starter Type SSAZ controls a three-phase asynchronous motor in a soft start and a soft stop modus. The device is available fom 1.5KW till 3KW.
With the soft start device SSAZ a bi-directional power semi-conductor is integrated into two of the phases.
The current is steadily increased until the max. current flow angle is reached.
In this way the max. torque is present which is sufficient enough to enable a save start even with drives having a large friction torque at standstill.
The run-up time, the run-down time and the initial torque of the motor can be seperately set.
The settingpotentiometers are accezsable by removing the front cover.
When the max. current flow angle is present after the settable starting time has elapsed a relay contact shortens the power semi-conductor, thus removing the starting electronics from the circuitry.

Type	SSAZ 3 / 400 V
Power supply	400 V
Net frequency	50 Hz
Max. Motor power	1,5 kW – 3,0 kW
Start time	0,3 s – 20 s
Storage temperature	- 20 °C - 75 °C
Operating temperature	0°C - + 40°C
Protection class	IP 20



subject to qualifications

Rotating field generator DFM

Rotating field generator DFM

The rotating-field-regulator type DFM 1 is a voltage regulator housed in a 35 mm snap-shot casing.

With the help of the DFM 1 the voltage can be regulated in 2phases by using the potentiometer.

Therefore the torque can be adjusted at the rotating-field-regulatur.

The DFM 1 is also suitable for simple adjustments of the speed e.g. ventilator-drives with a three-phase-motor.

Application DFM

- Speed controller for ventilator
- Speed controller for coils drives
- Speed controller for asynchronous motors

Eddy-current break BR 2-10 till BR 3-600

Eddy-current break BR 2-10 till BR 3-600

The electrodynamic brake type BR 380... allows for wear and tear free braking of three phase and AC asynchonous motors which is achieved by feeding a direct current onto the motor coil.

On allucation of the braking time, the braking operation will end after the machine has come to a standstill.

Switching the motor off will introduce the fully automatic braking cycle.

Special characteristics

- Rough and fine setting of the braking current
- Setting of the braking time
- Soft introduction of the braking effect
- Absolutely free of wear and tear
- Installation in existing equipment
- Suitable for all motor series
- High operational safety
- Optimum price/performance ratio

Eddy-current break BR 2-10 till BR 3-600

BR 2-10 - BR 2-600	BR 2-10	BR 2-20	BR 2-40	BR 2-60	BR 2-100	BR 2-200	BR 2-400	BR 2-600
Power supply	230 V	230 V	230 V	230 V	230 V	230 V	230 V	230 V
Net frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Motor power	1,1 KW	3 KW	5,5 KW	7,5 KW	15 KW	30 KW	60 KW	95 KW
Protection class	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Ambient temperature	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C
Dimension (WxHxD)	100 x 73 x 120 mm	100 x 73 x 120 mm	75 x 200 x172 mm	175 x 200 x172 mm	175 x 200 x172 mm	175 x 240 x172 mm	315 x 240 x172 mm	315 x 450 x211 mm
Motor -and Line In connection	Terminals	Terminals	Terminals	Terminals	Terminals	Terminals	Terminals	Terminals
Rated current by max. break current	10 A	20 A	40 A	60 A	100 A	200 A	400 A	600A
Duty by max. break current	20%	20%	15%	15%	15%	15%	15%	15%
ext. fuses"super fast"	10 A	20 A	40 A	60 A	100 A	200 A	400 A	630 A
Break voltage	0 -130 Vdc	0 -130 Vdc	0 -130 Vdc	0 -130 Vdc	0 -130 Vdc	0 -130 Vdc	0 -130 Vdc	0 -130 Vdc
Break time	2 - 5 sec.	2 - 5 sec.	2 - 5 sec.	2 - 5 sec.	2 - 5 sec.	2 - 5 sec.	2 - 5 sec.	2 - 5 sec.
Down time for reduction of rest EMK	250 ms	250 ms	600 ms	600 ms	1500 ms	1500 ms	1500 ms	1800 ms
Min. cable cross-section	1,5 mm^2	1,5 mm^2	2,5 mm^2	4 mm^2	10 mm^2	25 mm^2	50 mm^2	M10
Wight	0,5 kg	0,55 kg	2,4 kg	2,4 kg	2,55 kg	3,55 kg	7,6 kg	13,5 kg
Casing	plastic	plastic	plastic	plastic	plastic	plastic	plastic	plastic

subject to qualifications

VATHAUER
ANTRIEBSTECHNIK

Eddy-current break BR 2-10 till BR 3-600

BR 3-10 - BR 3-600	BR 3-10	BR 3-20	BR 3-40	BR 3-60	BR 3-100	BR 3-200	BR 3-400	BR 3-600
Power supply	400 V	400 V	400 V	400 V	400 V	400 V	400 V	400 V
Net frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Motor power	2,2 KW	5,5 KW	7,5 KW	15 KW	22 KW	55 KW	110 KW	160 KW
Protection class	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
Ambient temperature	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C	0 - 45°C
Dimension (WxHxD)	100x73x 120 mm	100x73x 120 mm	175x200x 172 mm	175x200x 172 mm	175x200x 172 mm	175x240x 172 mm	315x240x 172 mm	315x450x 211 mm
Motor -and Line In connection	Terminals	Terminals	Terminals	Terminals	Terminals	Terminals	Terminals	Terminals
Rated current by max. break current	10 A	20 A	40 A	60 A	100 A	200 A	400 A	600A
Duty by max. break current	20%	20%	15%	15%	15%	15%	15%	15%
ext. fuses"super fast"	10 A	20 A	40 A	60 A	100 A	200 A	400 A	630 A
Break voltage	0-130 Vdc	0-130Vdc	0-130 Vdc	0-130 Vdc	0-130 Vdc	0-130 Vdc	0-130 Vdc	0-130 Vdc
Break time	2 - 15sec.	2 - 15sec.	2 - 15sec.	2 - 15sec.	2 - 15sec.	2 - 15sec.	2 - 15sec.	2 - 15sec.
Down time for reduction of rest EMK	250 ms	250 ms	600 ms	600 ms	1500 ms	1500 ms	1500 ms	1800 ms
Min. cable cross-section	1,5 mm^2	1,5 mm^2	2,5 mm^2	4 mm^2	10 mm^2	25 mm^2	50 mm^2	M10
Wight	0,5 kg	0,55 kg	2,4 kg	2,4 kg	2,55 kg	3,55 kg	7,6 kg	13,5 kg
Casing	Plasic	Plasic	Plasic	Plasic	Plasic	Plasic	Plasic	Plasic

subject to qualifications

Frequency converter VECTOR Heat recovery

Frequency converter VECTOR Heat recovery

The Frequency Converter VECTOR Heat recovery is a special developed Frequency Converter for heat recovery. The device contains functions which were realised from previous external controller. The device is equipped with sensorless rotor operation monitoring. That means you can control the rotation with or without an external sensor (proximity switch).

The Frequency Converter controls the V-Belt whether the belt is broken or the V-Belt turns the Rotating heat exchanger correctly.

This function (sensorless V-Belt monitoring) enable short installation times, no maintenance work, less material costs, no susstaining of sensors and no mismeasurement by non detected attenuator.

Due to the VECTOR technology the Frequency Converter generate a high torque at lowl numbers of revolution speed.

The adjustable interval controller avoids maintenance of a Rotating heat exchanger.

Several Bus-systems (e.g.LON-BUS) are available.
The integrated or snap on plain text display are a further quality feature of this device.

Following features provides the VECTOR Heat recoverry

- High torgue by low rotation speed due to vector control
- Sensorless V-Belt monitoring
- Adjustable intervall controlling
- LON-Bus connectable
- Plain text display
- Protection class IP 20 and IP 54
- Linear and quardratic set point
- High EMC protection though aluminium casing

Applications areas are

- Production lines
- Canteen
- Ventilation systems
- Drying processes

Frequency converter VECTOR Heat recovery

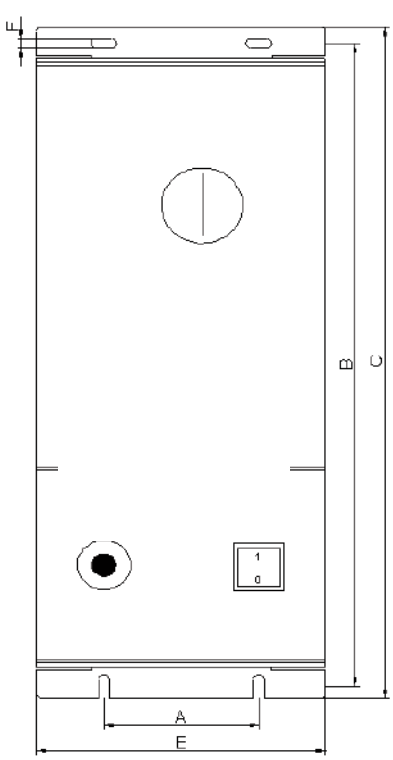
Typ	Vector WT 090	Vector WT 120	Vector WT 180	Vector WT 250	Vector WT 370	Vector WT 550	Vector WT 750
Output power	0,2 kVA	0,33 kVA	0,45 kVA	0,55 kVA	0,85 kVA	1,3 kVA	1,6 kVA
Motor power	0,09 kW	0,12 kW	0,18 kW	0,25 kW	0,37 kW	0,55 kW	0,75 kW
Rated current	1 A	1,1 A	1,3A	1,5 A	2,2 A	3,4 A	4 A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0–400 Hz	0–400 Hz	0–400 Hz	0–400 Hz	0–400 Hz	0–400 Hz	0–400 Hz
EMC filter	Internal	Internal	Internal	Internal	Internal	Internal	Internal
Rated voltage	230 V	230 V	230 V	230 V	230 V	230 V	230 V
Protection class	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54
Ambient temperature	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C

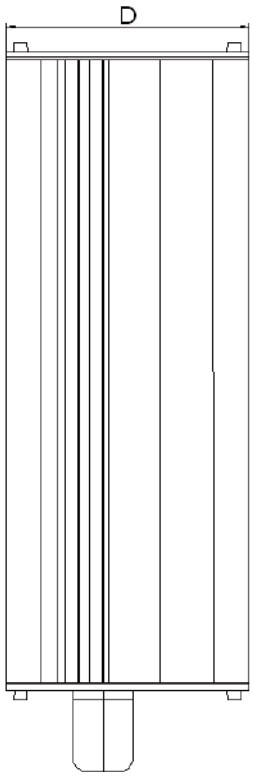
The Frequency Conterter VECTOR Heat Recovery contains several integrated functions for the heat recovery. These functions guarantee a high operation reliability, comfort and process safety.

Function	Integrated into VECTOR HR
Potential free relay output 1	Signal ready for operate
Potential free relay output 2	Signal error
Rotor operation monitoring	Sensorless or with sensor.(Integrated option and chooseable option)
V-Belt monitoring	Integrated function
Intermittent controlling	Integrated function
Primacy speed	Integrated function
Short circuit protection	Integrated function
Motor temperature monitoring	PTC or Bi-Metall
Holding torgue	Integrated function
Set point input	Linear/ Quadratic/ Vector
Protection class	IP 20 - IP 65
Heat recovery/ cold recovery	With seperate module

subject to qualifications

Frequency converter VECTOR Heat recovery





Type	Dimension VECTOR Heat Recovery
A	65 mm
B	290 mm
C	312 mm
D	90 mm
E	112 mm
F	5 mm

subject to qualifications

Frequency converter VECTOR Vibrodrive

Frequency converter VECTOR Vibrodrive

The new type series of controller VECTOR Vibrodrive is modular designed and perfect for customised special-purpose solutions.

This series begins with the controller VECTOR Vibrodrive to control vibrating bowl conveyor and vibrating linear conveyor.

An integrated adjustable congestion input and a voltage supply for the necessary light barrier or sensor are included in all controllers.

After eliminating the congestion there is a further input available for a feeler to decrease the run-up time. A relay output is integrated in addition.

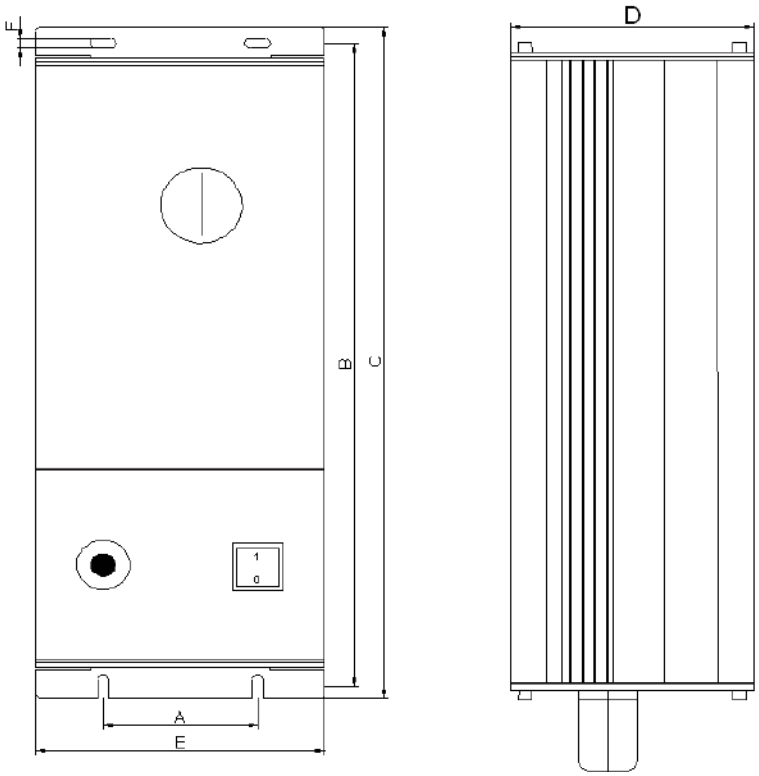
The VECTOR Vibrodrive shows following features

- With run-up time by-pass
- With relay output
- Non mechanical necessary adjustments for vibrating conveyor
- Short standstill period for your production line
- High cost-savings
- Plugable connector
- Protection class IP20 - IP 65
- Congestion input

Typ	Vector Vibro 090	Vector Vibro 120	Vector Vibro 180	Vector Vibro 250	Vector Vibro 370	Vector Vibro 550	Vector Vibro 750
Output power	0,2 kVA	0,33 kVA	0,45 kVA	0,55 kVA	0,85 kVA	1,3 kVA	1,6 kVA
Motor power	0,09 kW	0,12 kW	0,18 kW	0,25 kW	0,37 kW	0,55 kW	0,75 kW
Rated current	1 A	1,1 A	1,3A	1,5 A	2,2 A	3,4 A	4 A
Output voltage	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Output frequency	0 – 160 Hz	0 – 160 Hz	0 – 160 Hz	0 – 160 Hz	0 – 160 Hz	0 – 160 Hz	0 – 160 Hz
EMC filter	Internal	Internal	Internal	Internal	Internal	Internal	Internal
Rated voltage	230 V	230 V	230 V	230 V	230 V	230 V	230 V
Protection class	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54	IP20 / IP54
Ambient temperature	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C

subject to qualifications

Frequency converter VECTOR Vibrodrive



Type	Dimension VECTOR Vibrodrive
A	65 mm
B	290 mm
C	312 mm
D	90 mm
E	112 mm
F	5 mm

subject to qualifications

Frequency converter VECTOR Railway

Frequency converter VECTOR Railway

This Frequency converter controlls asynchonous motors for various functions in railsways, metros and in railed vehicles in general.

The VECTOR Railway controlls asynchronous motors with a ISO-class F due to its special design.

This device saves energy and space in railway applications.

the VECTOR Railway was developed due to railway standards and meet all necessary approvals.

The robust aluminium casing allows the installation in allmost application of railway vehicles and provides a high EMC protection.

Advantages with VECTOR Railway

- Meets necessary railway approvals
- Vibration-proof
- High ambient temperature
- Easy mounting and installation
- Robust aluminium casing
- Saves energy and space
- Fast, quick and flexible mounting
- EMC approvals

Frequency converter VECTOR Railway

The VECTOR Railway is developed due to following standards

IEC 60068-2-1	Dry frost– 20°C
IEC 60068-2-2	Dry heat + 80°C
IEC 60068-2-3	Humidity heat, constant + 40°C
EN 61010-1	Safety for measuremet and control technology
EN 61326	Electrical equipment for process controll technique and laboratories, EMC
IEC 61000-3-2	Circuit feedback
IEC 61000-4-2	Interference immunity
IEC 61000-4-4	Burst test
IEC 255-21-1/2	Vibration strength

Typ	Vector Railway 180	Vector Railway 250	Vector Railway 370	Vector Railway 550	Vector Railway 750	Vector Railway 1100	Vector Railway 1500
Output power	0,45 kVA	0,55 kVA	0,85 kVA	1,3 kVA	1,6 kVA	2,8 kVA	4,0 kVA
Motor power	0,18 kW	0,25 kW	0,37 kW	0,55 kW	0,75 kW	1,1 kW	1,5 kW
Rated current	1,3 A	1,5 A	2,2 A	3,4 A	4,0 A	4,5 A	6,5 A
Output voltage	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Output frequency	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz	0 – 400 Hz
EMC filter	Internal	Internal	Internal	Internal	Internal	Internal	Internal
Rated voltage	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Protection class	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Ambient temperature	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C	0–40 °C

subject to qualifications

DC motor controller MTR 101

DC motor controller MTR 101

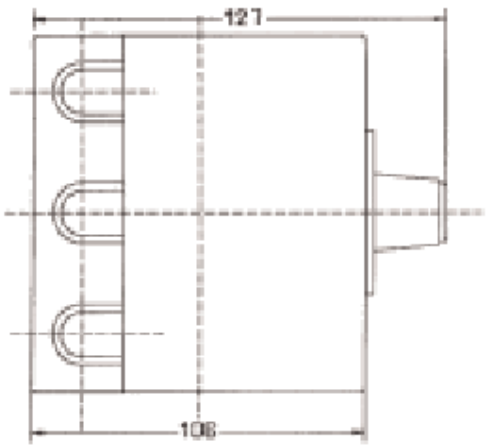
Despite alternative technologies, DC drives still have their application areas.

The DC motorcontroller of the MTR 101, The MTR 101 is for motor governor of a compact design which can be used for permanent field motors as well as for shunt-wound motors.

In the MTR 101 the armature current is limited by an overcurrent release (thermostatic switch).

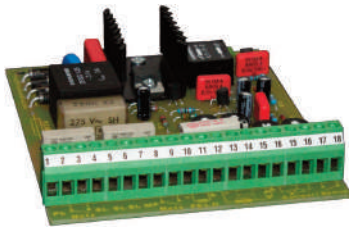
To adjust the motor speed there is in front of the case a set point potentiometer with an integrated on/ off switch.

Power supply	230 V 50/60 Hz
Armature voltage	0-180 Vdc
Fectory setting	20-180Vdc
Field voltage	200 V
Max. output power	250 W
Fuses for power supply	Lead fuses
Fuses Armature	Therminal switch
Armature current	1.5A
Form factor	1.4
Case material top	Polystyrene shock-resistant
Control range	1:10
Protection class	IP 20



subject to qualifications

DC motor controller MTR 201



DC motor controller MTR 201

The board type MTR 201 motor governor for DC motors is designed for mounting in switching cabinets or other casings.

The MTR 201 type is designed as plug-in card and can be installed in a card holder-slot.

This version is space-saving and fast to install. The adjustment trim potentiometers for minimum and maximum speed as well as for amature voltage control and for maximum current are easy to access since they are located on the frontside.

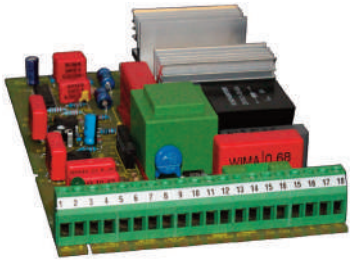
Du to a jumper setting there are two different set point inputs switchable.

The MTR 201 contains a 20 pole terminal for easy connection.

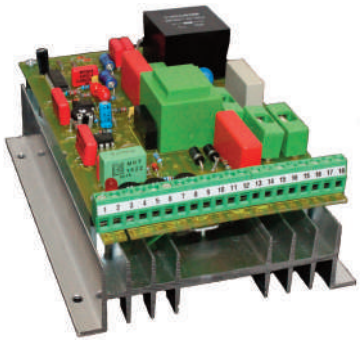
Power supply	230 V 50/60 Hz
Control voltage	0-180Vdc
Factory setting	20-180Vdc
Max. output power	250 W
Fuse	2A rapid release
Max. motor current	1.5A
Form factor	1.4
Ambient temperature	0-45°C
Control range	1:50
Dimensions	120 x 100 x 30 mm
Connector	Terminals
Design	Board design
Protection class	IP00

subject to qualifications

DC motor controller MTR 203 / MTR 204



MTR 203



MTR 204

DC motor controller MTR 203 / MTR 204

The one-quadrant MTR 203 und MTR 204 motor governors are robust and a good value.

They are suited for shunt-wound motors as well as for permanent-controlled DC motors.The type series features a compact design and is highly reliablity.

Armature voltage control (I x R) as well as a tachometer feedback is available.

Set value presetting is possible via a trimmer or a master reference voltage.

A built-in adjustable current limiting protects motor and governor against overload. Due to the integrated set value integrator, the running-up and running-down times can be adjusted.

	MTR 203	MTR 204
Power supply	230 V 50/60 Hz	230 V 50/60 Hz
Control voltage	0-170 V DC	0-170 V DC
Factory setting	20-170 V DC	20-170 V DC
Winding voltage	200 V DC	200 V DC
Max. output power	0,75 KW	1,5 KW
Fuse	6,3 A fast release	16,0 A fast release
Max. Motor current	5 A	10 A
Form factor	1,4	1,4
Ambient temperature	0-45°C	0-45°C
Control range	1:50	1:50
Speed indicator ratio	1:100	1:100
Protection class	IP 00	IP 00
Set point potentiometer	10 K	10 K
Reference voltage	+ 12 V DC	+ 12 V DC

subject to qualifications

Decentralized dives for conveying systems

Optimize your intralogistic conveying system and save energy, installation time and money

To make the intralogistic conveying system more economically all drives takes a important part of the whole conveying syetem.

Energy saving due to a installation of low power geared motors and due to intelligent ON/ OFF motorstarter, motor soft starter and frequency converter.

Fast automatize and flexible amplification of already installed conveying systems due to motor-starter MONO-SWITCH and DUO-SWITCH.

Loss of starring wiring through the decentralization of drives and installation of power distribution systems.

Integrated fieldbus systems in all motor starter and frequency converter

- AS-Interface
- Profi-Bus DP
- 24V PLC signal

Decentralized dives for conveying systems

All motor starter switches the motors full electronically by power semiconductor.
By means alle motor starter uses machanical contactor or relais. This technology avoid operational faults and increases operating cycles for the conveying system which will becomes much more efficient and the service will reduced.

The motor starter MONO-SWITCH and DUO-SWITCH are different in following cases. The motor starter MONO-SWITCH switches and controll only one eletrical motor. The motor starter DUO-SWITCH switches and controll two different electrical motors seperately. Fruthermore the MONO-SOFT-SWITCH switches one electrical motor smooth. The DUO-SOFT-SWITCH switches two different motors smooth with adjustable run-up times and run-down-times.

MONO-SWITCH

This electronical motor starter MONO-Switch switches only one three-phase asynchonous motor ON and OFF. The MONO-Switch is available from 0.09KW to 3KW.

The connected motor is protected by the motor temperature monitoring. The motor temperature signal will transmitt to the superordinated controller by AS-interface. An uncontrolled disconnection of the motor is avoided.

The integrated motor connector meets the DESINA requirements and allows a fast, reliable and quick connection. Also pre-toilored cables can be connected. Due to the 8-pole connector, a break function is also available in the same connector.

The power supply can be realised by various energy distribution systems. In this case, MSF provides metric cable glands or suitable connectors for special energy distribution systems.

The integrated M12 connector allows to connect two photo electric sensors and the AS-interface version 2.1 or for 24V binary signals.

Fieldbus-Systems

- 24V binary (PLC)
- AS-Interface
- Further fieldbus-systems on request

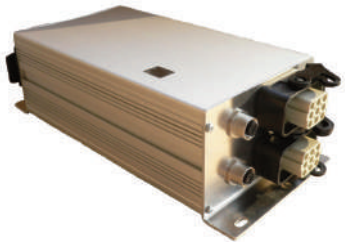
Decentralized dives for conveying systems

DUO-SWITCH

This electronical motor starter DUO-Switch switches two three-phase asynchonous motor ON and OFF seperately. The DUO-Switch is available from 2 x 0.09KW to 2 x 0.75 kW

The connected motor is protected by the motor temperature monitoring for each motor. The motor temperature signal will transmitt to the superordinated controller by AS-interface. An uncontrolled disconnection of the motor is avoided.

The integrated motor connector meets the DESINA requirements and allows a fast, reliable and quick connection for each motor. Also pre-toilored cables can be connected. Due to the 8-pole connector, a break function is also available in the same connector.



The power supply can be realised by various energy distribution systems. In this case, MSF provides metric cable glands or suitable connectors for special energy distribution systems.

The integrated M12 connector allows to connect one photo electric sensor for each motor and the AS-interface version 2.1 or for 24V binary signals.

Fieldbus-Systems

- 24V binary (PLC)
- AS-Interface
- Further fieldbus-systems on request

Decentralized dives for conveying systems

MONO-SOFT-SWITCH

This electronical motor soft starterMONO-SOFT-Switch switches one three-phase asynchonous motor smooth ON and OFF.
The run-up time and run-down time ramp is adjustable by potentiometer which are accessible from the outside. The MONO-SOFT-Switch is available from 0.09KW to 3.0 kW.

The connected motor is protected by the motor temperature monitoring. The motor temperature signal will transmitt to the superordinated controller by AS-interface. An uncontrolled disconnection of the motor is avoided.

The run-up time, the run-down time and the BOOST are adjustable by interlan potentiometers which are accessible from the outside.

The integrated motor connector meets the DESINA requirements and allows a fast, reliable and quick connection for each motor. Also pre-toilored cables can be connected. Due to the 8-pole connector, a break function is also available in the same connector.

The power supply can be realised by various energy distribution systems. In this case, MSF provides metric cable glands or suitable connectors for special energy distribution systems.

The integrated M12 connector allows to connect two photo electric sensors and the AS-interface version 2.1 or for 24V binary signals.

Fieldbus-Systems

- 24V binary (PLC)
- AS-Interface
- Further fieldbus-systems on request

Decentralized dives for conveying systems

DUO-SOFT-SWITCH

This electronical motor soft starter DUO-SOFT-Switch switches two three-phase asynchonous motor smooth ON and OFF.
The run-up time and run-down time ramp is adjustable by potentiometer which are accessible from the outside for each motor. The DUO-SOFT-Switch is available from 2 x 0.09KW to 2 x 0.75 kW.

The connected motors are protected by the motor temperature monitoring. The motor temperature signal will transmitt to the superordinated controller by AS-interface for each motor. An uncontrolled disconnection of the motor is avoided.

The run-up time, the run-down time and the BOOST are adjustable by internal potentiometers which are accessible from the outside. The adjustments are possible for each motor.

The integrated motor connector meets the DESINA requirements and allows a fast, reliable and quick connection for each motor. Also pre-toilored cables can be connected. Due to the 8-pole connector, a break function is also available in the same connector.

The power supply can be realised by various energy distribution systems. In this case, MSF provides metric cable glands or suitable connectors for special energy distribution systems.

The integrated M12 connector allows to connect one photo electric sensor for each motor and the AS-interface version 2.1 or for 24V binary signals.

Fieldbus-Systems

- 24V binary (PLC)
- AS-Interface
- Further fieldbus-systems on request

Decentralized dives for conveying systems

MONO-SOFT-SWITCH-Reversierbar

This electronical motor soft starterMONO-SOFT-Switch Reversible switches one three-phase asynchonous motor smooth ON and OFF for right direction and left direction.
The run-up time and run-down time ramp is adjustable by potentiometer which are accessible from the outside for both direction. The MONO-SOFT-Switch Reversible is available from 0.09KW to 3.0 kW.

The connected motor is protected by the motor temperature monitoring. The motor temperature signal will transmitt to the superordinated controller by AS-interface. An uncontrolled disconnection of the motor is avoided.

The direction of rotation is reversible by the integarted AS-interface or by 24V binary signals.

The run-up time, the run-down time and the BOOST are adjustable by interlan potentiometers for both directions which are accessible from the outside.

The integrated motor connector meets the DESINA requirements and allows a fast, reliable and quick connection for each motor. Also pre-toilored cables can be connected. Due to the 8-pole connector, a break function is also available in the same connector.

The power supply can be realised by various energy distribution systems. In this case, MSF provides metric cable glands or suitable connectors for special energy distribution systems.

The integrated M12 connector allows to connect two photo electric sensors and the AS-interface version 2.1 or for 24V binary signals.

Fieldbus-Systems

- 24V binary (PLC)
- AS-Interface
- Further fieldbus-systems on request

Decentralized dives for conveying systems

Type	MONO-SWITCH	DUO-SWITCH	MONO-SOFT-SWITCH	DUO-SOFT-SWITCH	MONO-SOFT-SWITCH Rev.
Motor power	0,09 - 3,0 kW	0,09 - 0,75 kW je Motor	0,09 - 3,0 kW	0,09 - 0,75 kW je Motor	0,09 - 3,0 kW
Direction	right direction				right / left
Output voltage	3 x 400V				
Output frequency	50 Hz				
Power supply	400 V				
Protection class	IP 54				
Ambient temperature	0°C - 40°C				
Motor temperature monitoring	PTC / PTO				
Field bus	AS-interface or 24V binary				
Sensor connection	2 x Sensor M12 plug	1 x Sensor M12 plug each motor	2 x Sensor M12 plug	1 x Sensor M12 plug each motor	2 x Sensor M12 plug
Field bus connection	M12 connector				
Motor break management	Direct switching by 400Vac or 230Vac (Neutral must be integrated in energy distribution bus)				
Status LED	LED and field bus				

subject to qualifications

Decentralized dives for conveying systems

MONO-SWITCH - PROFI DP-

This electronical motor starter MONO-Switch DP switches only one three-phase asynchonous motor ON and OFF directly. The MONO-Switch is available from 0.09KW to 0.75KW.

The connected motor is protected by the motor temperature monitoring. The motor temperature signal will transmitt to the superordinated controller by AS-interface. An uncontrolled disconnection of the motor is avoided.

The integrated M12 connector allows a fast and reliable connection of four photo electric sensors, one manual operating terminal, as well as the Profi Bus DP.

The connection by metric cable glands for the motor connection and Line In connection allows the usage of various energy distribution systems. If the application requires special motor and Line In connectors, MSF proivdes the suitable connector especially to the application.

Further the motor starter contains a relay output for a breaking motor. As a seperate option the motor starter provides 185Vdc to switch the motor break directly.

Additional features for intralogistic conveying systems

- Detection of all sensors by bus failure
- Detection of all sensors by switch OFF the motor starter
- Rapid stop of the motor by local failure of signalbus
- Status signal of motor temperature by Profibus
- Connection of manual operating terminal

Decentralized dives for conveying systems

Frequency converter VECTOR - PROFI DP-

The Frequency converter VECTOR 54 Profibus DP was developed for special functions for conveying systems. The converter controls 3-phase asynchronous motors with a maximum power of 1.5 kW.

The connected motor is protected by the motor temperature monitoring. The motor temperature signal will transmitt to the superordinated controller by AS-interface. An uncontrolled disconnection of the motor is avoided.

The integrated M12 connector allows a fast and reliable connection of four photo electric sensors, one manual operating terminal, as well as the Profi Bus DP.

The connection by metric cable glands for the motor connection and Line In connection allows the usage of various energy distribution systems. If the application requires special motor and Line In connectors, MSF proivdes the suitable connector especially to the application.

Further the motor starter contains a relay output for a breaking motor. As a seperate option the motor starter provides 185Vdc to switch the motor break directly.

The integrated lockable master switch ensures a safety maintenance work.

Additional features for intralogistic conveying systems

- Detection of all sensors by bus failure
- Detection of all sensors by switch OFF the motor starter
- Rapid stop of the motor by local failure of signalbus
- Status signal of motor temperature by Profibus
- Connection of manual operating terminal

MSF VATHAUER
ANTRIEBSTECHNIK

FREQUENCY INVERTERS

From simple to application-specific or standard frequency inverters: MSF-Vathauer Antriebstechnik has a wide range of drive automation solutions for centralized and decentralized installations that impress in terms of performance, value and equipment.

VECTOR basic - Standard

Power	0.37kW
Connection voltage	230V
Degree of protection	IP44
Brake chopper	integrated
Filter	C3 EMC filter
Housing material	Plastic

VECTOR basic - POT

Power	0.37kW
Connection voltage	230V
Degree of protection	IP44
Brake chopper	integrated
Filter	C3 EMC filter
Housing material	Plastic

VECTOR basic - EMERGENCY STOP

Power	0.37kW
Connection voltage	230V
Degree of protection	IP44
Brake chopper	integrated
Filter	C3 EMC filter
Housing material	Plastic

VECTOR eco - Standard

Power	0,09-0,75kW
Connection voltage	230V
Degree of protection	IP44
Filter	C3 EMV Filter
Housing material	Aluminum

VECTOR eco - EMERGENCY STOP

Power	0,09-0,75kW
Connection voltage	230V
Degree of protection	IP44
Filter	C3 EMV Filter
Housing material	Aluminum

VECTOR 20 - single-phase

Power	0,09-2,2kW
Connection voltage	230V
Degree of protection	IP20
Brake chopper	integrated
Filter	C3 EMV Filter
Communication	RS 232, Profinet, CANopen Positionierung, Ethernet
Housing material	Aluminum

VECTOR 20 - three-phase

Power	0,75-3,0kW
Connection voltage	400V
Degree of protection	IP20
Brake chopper	integrated
Filter	C3 EMV Filter
Communication	RS 232, Profinet, CANopen positioning, Ethernet
Housing material	Aluminum

VECTOR 54 - single-phase

Power	0,09-2,2kW
Connection voltage	230V
Degree of protection	IP54
Brake chopper	integrated
Filter	C3 EMV Filter
Communication	RS 232, Profinet, Profibus
Housing material	Aluminum

FREQUENCY INVERTER

VECTOR 54 - three-phase

Power	0,75-3,0kW
Connection voltage	400V
Degree of portection	IP54
Brake chopper	integrated
Filter	C3 EMV Filter
Communication	RS 232, Profinet, Profibus
Housing material	Aluminum

VECTOR H1

Power	0,75-500kW
Connection voltage	200/400/600V
Degree ofprotection	IP20
Brakechopper	integrated
Filter	C3 EMV Filter
Communication	Modbus, Profibus, Profinet, CANopen, RS 485
Housing material	Plastic

VECTOR H2 - 20

Power	1,5-500kW
Connection voltage	380/440V
Degree of protection	IP20
Brake chopper	integrated
Filter	C3 EMV Filter
Safety	STO
Communication	Modbus, Profibus, Profinet CANopen, Ethernet, RS 485
Housing material	Plastic

VECTOR H2 - 55

Power	4,0-110kW
Connection voltage	380/440V
Degree of protection	IP55
Brake chopper	integrated
Filter	C3 EMV Filter
Safety	STO (SIL2)
Control	PLC
Communication	Modbus, Profibus, Profinet, CANopen, Ethernet, RS 485, SPS-Card
Housing material	Plastic

VECTOR jag

Power	0,4-315kW
Connection voltage	400V
Degree of protection	IP20
Brakechopper	integrated
Filter	C2, C3 EMV Filter
Ssafety	STO (SIL3)
Communication	Modbus, CANopen, RS 485, SPS-Card
Housing material	Plastic

VECTOR S1

Power	0,4-110kW
Connection voltage	220-240/380V
Degree ofprotection	IP20
Brake chopper	integrated
Filter	C1, C2, C3 EMV Filter
Safety	STO (SIL2/SIL3)
Communication	Modbus, RS 485
Housing material	Plastic

	VECTOR basic Standard	VECTOR basic POT	VECTOR basic ES	VECTOR eco Standard	VECTOR eco ES	VECTOR 20 1-phase	VECTOR 20 3-phase	VECTOR 54 1-phase	VECTOR 54 3-phase	VECTOR H1	VECTOR H2 20	VECTOR H2 55	VECTOR jag	VECTOR S1
Power	0,37kW	0,37kW	0,37kW	0,09-0,75kW	0,09-0,75kW	0,09-2,2kW	0,75-3,0kW	0,09-2,2kW	0,75-3,0kW	0,75-500kW	1,5-500kW	4,0-110kW	0,4-315kW	0,4-110kW
Connection voltage	230V	230V	230V	230V	230V	230V	400V	230V	400V	200/400/600V	380/440V	380/440V	400V	220-240/380V
Degree of protection	IP44	IP44	IP44	IP44	IP44	IP20	IP20	IP54	IP54	IP20	IP20	IP55	IP20	IP20
Brake chopper	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓
C3 Filter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
STO	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓
Option SPS-Card	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✗
Communi-cation	✗	✗	✗	✗	✗	*RS 232 Profinet CANopen Ehternet Positio-nierung*	*RS 233 Profinet CANopen Ethernet Positio-nierung*	*RS 232 Profibus Profinet*	*RS 232 Profibus Profinet*	*Modbus Profibus Profinet CANopen RS 485*	*Modbus Profibus Profinet CANopen Ethernet RS 485*	*Modbus Profibus Profinet CANopen Ethernet RS 485*	*Modbus CANopen RS 485*	*Modbus RS 485*
Housing material	*Plastic*	*Plastic*	*Plastic*	*Alumi-num*	*Alumi-num*	*Alumi-num*	*Alumi-num*	*Alumi-num*	*Alumi-num*	*Plastic*	*Plastic*	*Plastic*	*Plastic*	*Plastic*

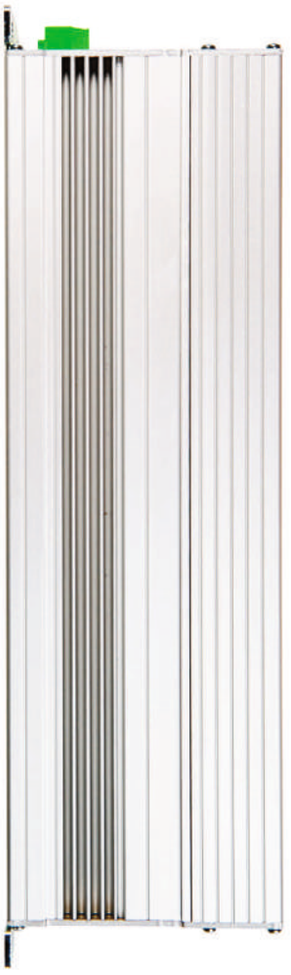
MSF VATHAUER ANTRIEBSTECHNIK

ENERGY-RECOVERY-SYSTEM

The Energy Recovery System

"Using energy, instead of burning it" is the motto these days! Why should the braking energy be transformed into heat, when it cannot be fed directly back into the system network? It is precisely this basic idea which has induced us to develop a system with which the energy can be "reused" again.

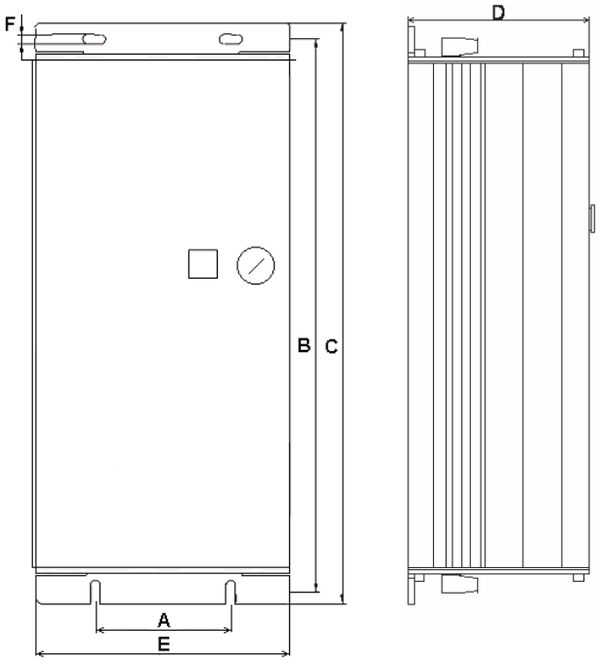
During braking of three-phase motors or servomotors regenerative energy is released. This flows into the intermediate circuit of the drive controller and must be converted into heat through the corresponding braking resistors and destroyed. In applications where potential energy from lifting, lowering and braking movements is converted into heat loss through braking resistors, the Energy-Recovery-System can utilize this potential energy. With the installation of the system, the regenerative energy of your servo or standard drive is no longer lost. The ERS acts as a centralized or decentralized energy recovery unit and feeds the energy back into the system network via the connected drive controller.



Specifications

Connection voltage	3x350-480Vac 50Hz / 60Hz, Clockwise rotating field
Capacity	Peak capacity: 5kW (2 - 9A) @ ED35% (S3 mode)
	Continuous output: 2kW @ ED100% (S1 mode)
Switch-on threshold	Can be adjusted in the device
Safety braking resistor during power failure	Integrated
Status LED	Operational readiness / synchronisation / feeding mode / excess current / excess temperature
Protection degree	IP20 (optional Ip54)
Digital output	Operational / Collective fault signal / feeding mode
Monitoring functions	Intermediate circuit voltage / Device temperature / Current Feedback
EMC measures	Integrated - no EMC measures necessary on the customer side
Connectible drives	Three-phase drive or servo drives
Ambient temperature	0°C to +40°C
Housing dimensions (LxWxH)	312 x 112 x 90mm / aluminium housing
Weight	2.1kg

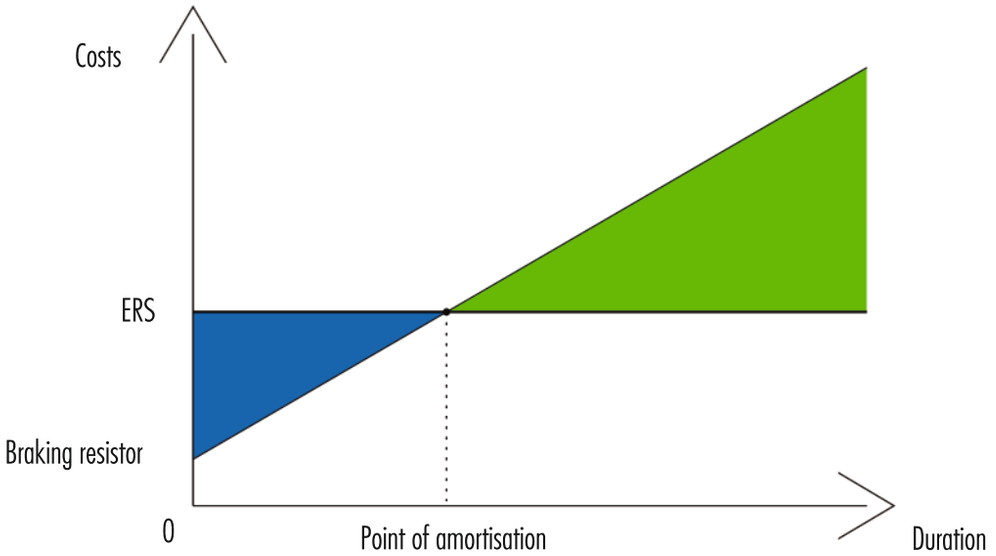
Dimensions

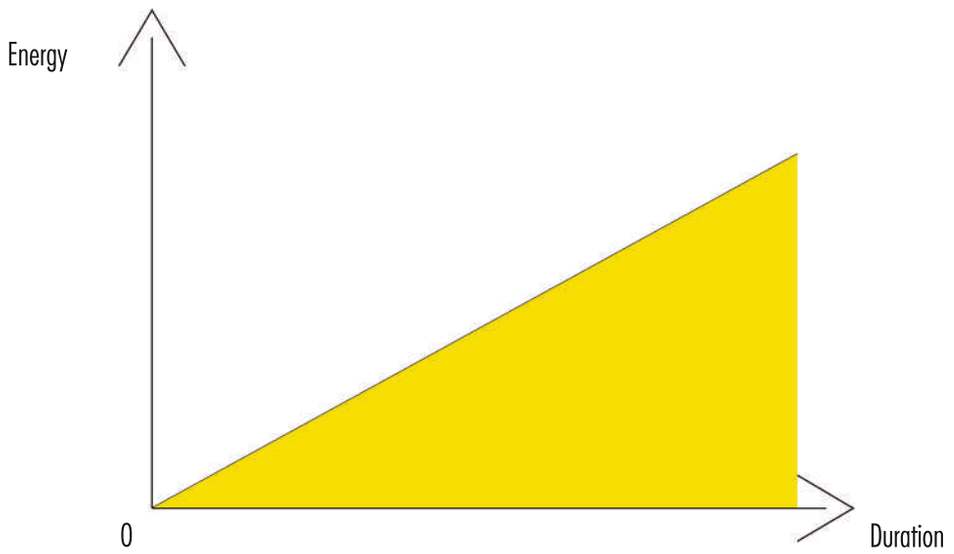


Dimension	ERS IP20	ERS IP54
A	65 mm	65 mm
B	290 mm	370 mm
C	312 mm	382 mm / 434 mm**
D	90 mm / 92 mm *	90 mm / 92 mm*
E	112 mm	112 mm
F	5 mm	5 mm

* Height incl. cover for the selector switch
** Length incl. cable glands above and below

Costs and energy savings





Case study: **Winding machine with 2 kW continuous energy recovery capacity**

24/7 production mode

2kW x 24h x 365Days = 17.520kWh x 0,20EUR/kWh = 3.504EUR (Annual savings through recycled energy)

Benefits

- light weight
- compact Design
- direct energy recovery without intermediate storage
- suitable for frequency inverters and servo controllers
- Plug and Play
- self-synchronizing
- without parameterisation
- without auxiliary voltage

- for upgrading of existing systems or retrofitting
- for installation in new systems
- easy and quick commissioning
- optional: can be used in parallel with a braking resistor

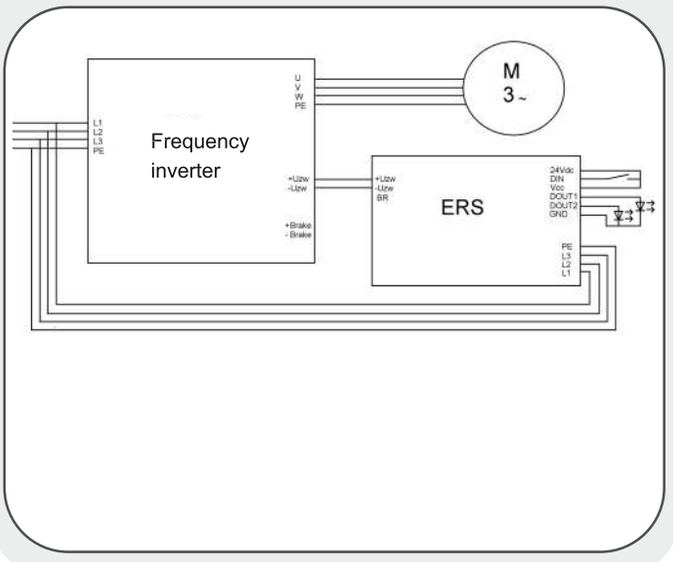
- does not convert excess braking energy into heat, but rather leads the energy directly into the system network
- supports the environment
- supports sustainability
- ISO 50001 appropriate

- reduces energy costs
- ROI is reached more quickly
- no additional costs, since no external filters and chokes are required

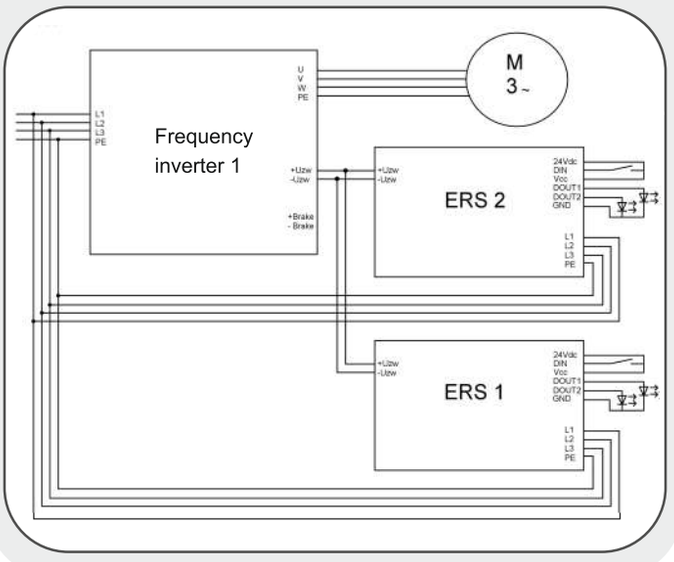
- high level of efficiency of 98%
- high duty cycle (35%)
- high number of application possibilities

Connection

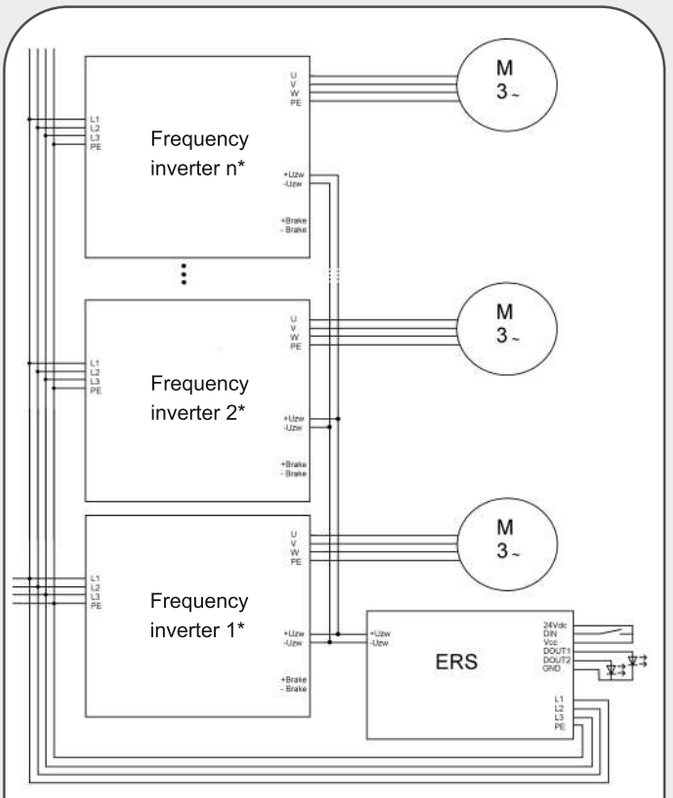
1. Connection example frequency inverter with ERS



2. Connection example with several ERS

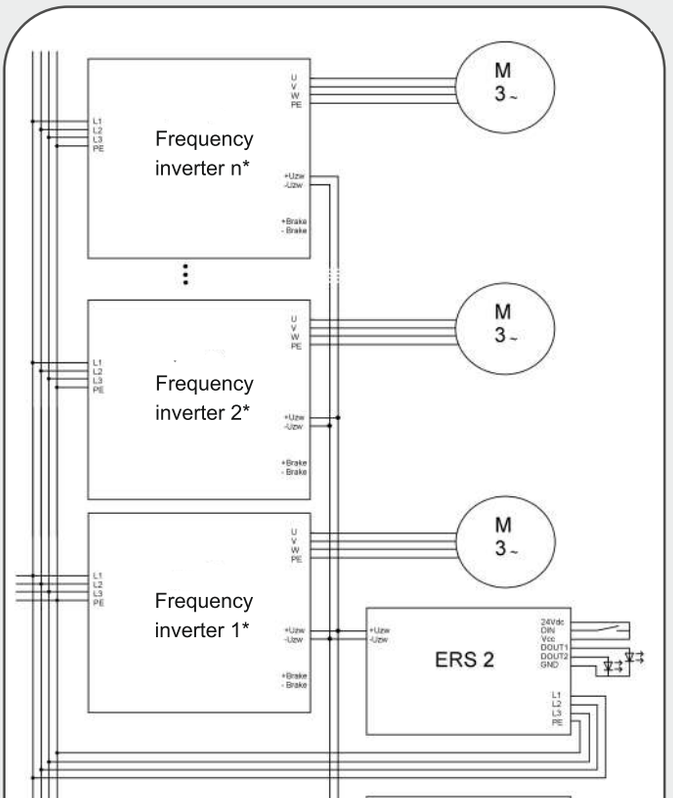


3. Connection example frequency inverter - DC link system with an ERS



* frequency inverter must be suitable for DC link system

4. Connection example frequency inverter - DC link system with several ERS



* frequency inverter must be suitable for DC link system

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

No starry wiring though energy distribution system Field Power® with snap on motor starter

The electronic motor starter for the energy distribution system Field Power® is a snap-on motor starter for the power distribution box (power box). This system is an alternative to central installed motor starter. The atributes of quick installation, flexible installation and easy installation features big advantages during reinstallations, extensions of a machine or for re-fittings.
All motor starter are connectable via a round cable or via a ribbon cable. Into the motor starter integrated M12 male or femal connectors are available for singal bus systems (field-bus-systems) like AS-Interface, Profibus or for a 24V PLC-signal. Two more M12 connectors are available for two photo electric sensors.

Following versions are available:

MONO-SWITCH	ON/ OFF motor starter for only one asynchronous motor
DUO-SWITCH	ON/ OFF motor starter for two seperate asynchronous motor
MONO-SOFT-SWITCH	ON/ OFF soft motor starter for only one asynchronous motor
VECTOR Field Power®	Frequency converter for Energy distribustion system Field Power®

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Overview of all motor starter and Frequency converter

MONO-SWITCH
Direct motor starter to switch one asynchronous motor ON and OFF

MONO-SOFT-SWITCH
Soft motor starter to switch one asynchronous motor ON and OFF

DUO-SWITCH
Direct motor starter to switch two asynchronous motor ON and OFF seperately

DUO-SOFT-SWITCH
Soft motor starter to switch two asynchronous motor ON and OFF seperately

MONO-SOFT-SWITCH Reverse
Soft motor starter to switch one asynchronous motor ON and OFF for right direction and left direction

Frequency converter VECTOR Field Power
Frequency converter with for AC drives with energy distribution system Field Power

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Frequency converter VECTOR Field Power®

The frequency converter VECTOR Field Power ® is used everywhere motor speeds will vary for specific applications.

Characteristics of the VECTOR Field Power®

- Power range: from 0.09 kW to 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Clock speed: up to 8 KHz
- Integrated power distribution
- Integrated Field Bus interface
  - AS-interface spec. 3.0
  - Profibus DP
  - 24V binary
  - Cascade for storage conveying systems

- Protection: IP65
- Standard: 4-Q - Operating
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes
- Standard: Programmable brake for lifting frames
- Standard: Integrated EMC filter class A
- Standard: Integrated motor temperature control for each motor
- Standard: Standard: 8 preset speeds available
- Standard: Connection for manual control unit
- Standard: Connection of 2 sensors per motor
- Standard: Q8 Motor connector to DESINA for each motor
- Optional: Connecting of a brake resistor

Field bus systems

- AS-interface Spec. 3.0
- Profibus DP
- 24V binary
- Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Motor starter - MONO-SWITCH Field Power®

The Motor starter MONO-SWITCH Field Power® is used everywhere where the drive without a speed change without integrated soft start must be application-specific switched on and off.

The MONO-SWITCH Field Power® is designed for the direct on– and off turning of one separate three-phase asynchronous motor.

Characteristics of the MONO-SWITCH ® Field Power

- Power range: from 0.09 kW to 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution and line protection
- Integrated field bus interface
    - AS-interface spec. 3.0
    - Profibus DP
    - 24V binary
    - Cascade for storage conveying systems

- Protection: IP65
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes
- Standard: integrated motor temperature control for each motor
- Standard: Connection for manual control unit
- Standard: Connection of 2 sensor per motor
- Standard: Q8 Motor connector to DESINA for each motor
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface Spec. 3.0
- Profibus DP
- 24V binary
- Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Motor soft starter - MONO-SOFT-SWITCH Field Power®

The Motor soft starter MONO-SOFT-SWITCH Field Power® is used everywhere where the drive without a speed change with integrated soft start must be application-specific switched on and off.

The MONO-SOFT-SWITCH Field Power® is designed for the soft on– and off turning of a three-phase asynchronous motor.

Characteristics of the MONO -SOFT-SWITCH Field Power®

- Power range: from 0.09 kW to 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution and line protection
- Integrated Field Bus interface
  - AS-interface spec. 3.0
  - Profibus DP
  - 24V binary
  - Cascade for storage conveying systems

- Protection: IP65
- Standard: LED status display
- Standard: Adjustable high and low running times
- Standard: Adjustable motor current
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: Integrated motor temperature control
- Standard: Connection for manual control unit
- Standard: connection of 2 sensors
- Standard: Q8 Motor connector to DESINA
- Standard: Reversing (reversing starter)
- Security: By 3-phase independent soft switching for each motor

Field bus systems

- AS-interface Spec. 3.0
- Profibus DP
- 24V binary
- Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Motor starter - DUO-SWITCH Field Power®

The motor starter DUO-SWITCH Field Power® is used everywhere where two drives independently of one another without application-specific change in speed and without a soft start must be switched on and off.

The DUO-SWITCH Field Power® is designed for the direct on– and off turning of two separate 3-phase asynchronous motors.

Characteristics of the DUO-SWITCH ® Field Power

- Power range: from 0.09 kW to 0.75 kW per engine
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution and line protection
- Integrated Field Bus interface
    - AS-interface spec. 3.0
    - Profibus DP
    - 24V binary
    - Cascade for storage conveying systems

- Protection: IP65
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: integrated motor temperature control for each motor
- Standard: Connection for manual control unit
- Standard: Connection of 1 sensor per motor
- Standard: Q8 Motor connector to DESINA for each motor
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface Spec. 3.0
- Profibus DP
- 24V binary
- Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Motor Soft starter - DUO-SOFT-SWITCH Field Power®

The Motor Soft Starter DUO-SOFT-SWITCH Field Power® is used everywhere where two drives without a speed change with integrated soft-start must be application-specific switched on and off.

The DUO-SOFT-SWITCH Field Power® is designed for the soft on– and off turning of two independent 3-phase asynchronous motors.

Characteristics of the DUO-SOFT-SWITCH ® Field Power

- Power range: from 0.09 kW to 0.75 kW per motor
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution and line protection
- Integrated Field Bus interface
  - AS-interface spec. 3.0
  - Profibus DP
  - 24V binary
  - Cascade for storage conveying systems

- Protection: IP65
- Standard: LED status display
- Standard: Adjustable high and low running times per motor
- Standard: Adjustable motor current of each motor
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: integrated motor temperature control for each motor
- Standard: Connection for manual control unit
- Standard: connection of 1 sensor per motor
- Standard: Q8 Motor connector to DESINA for each motor
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface Spec. 3.0
- Profibus DP
- 24V binary
- Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Motor soft starter – MONO-SOFT-SWITCH Reversible Field Power®

The motor soft starter MONO-SOFT-SWITCH-Reversible Field Power® is used everywhere where the drive without a speed change with integrated soft start must be application-specific switched on and off and a rotation reversal is necessary.

The MONO-SOFT-SWITCH Reversible Field Power® is designed for the soft on– and off turning of a 3-phase asynchronous motor and for the rotation reversal.

Characteristics of the MONO-SOFT-SWITCH Reversible Field Power®

- Power range: from 0.09 kW to 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution and line protection
- Integrated Field Bus interface
  - AS-interface spec. 3.0
  - Profibus DP
  - 24V binary
  - Cascade for storage conveying systems

- Protection: IP65
- Standard: LED status display
- Standard: Adjustable high and low running times
- Standard: Adjustable motor current
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: Integrated motor temperature control
- Standard: Connection for manual control unit
- Standard: connection of 2 sensors
- Standard: Q8 Motor connector to DESINA
- Standard: Reversing (reversing starter)
- Security: By 3-phase independent switching for each motor

Field bus systems

- AS-interface Spec. 3.0
- Profibus DP
- 24V binary
- Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Motor Starter Field Power® mounted on 3phase asynchronous motor

Motor starter Field Power® MOT

The Motor starter Field Power® MOT is always used where the motormanagment application-specific must be built or can be built onto the motor.

Characteristics of the motor starter Field Power® - MOT

- Power range: from 0.09 kW to 2,2 kW
- Voltage range: 3 x 400Vac + / - 10%
- Integrated power distribution and line protection
- Integrated Field Bus interface
  - AS-interface spec. 3.0
  - Profibus DP
  - 24V binary
  - Cascade for storage conveying systems

- Protection: IP65
- Standard: LED status display
- Standard integrated brake management for 230Vac or 400Vac motor brakes for each motor
- Standard: Integrated motor temperature control
- Standard: Connection for manual control unit
- Standard: connection of 2 sensors
- Standard: Q8 Motor connector to DESINA
- Optional: Connection of brake resistor

Motor specifications

- AC induction gear motor 0,09 kW - 2,2 kW
- Transmission type: worm gears, spur gears, bevel gears, worm-spur gear, etc.
- Design: B3, B14, B34, B35
- Motor protection: 3 x built-in PTC thermistor

Product Variants of the Motor Starter Field Power® - MOT

- MONO-SWITCH Field Power®
- DUO-SWITCH Field Power®
- MONO-SOFT-SWITCH Field Power®
- DUO-SOFT-SWITCH Field Power®
- MONO-SOFT-SWITCH Reversible Field Power®
- Frequency converter VECTOR Field Power®

Field bus systems

- AS-interface Spec. 3.0 | Profibus DP
- 24V binary | Cascade for storage conveying systems

Decentralized dives for conveying systems with integrated Energy Distribution System Field Power®

Typ	MONO-SWITCH Field Power®	MONO-SOFT-SWITCH Field Power®	DUO-SWITCH Field Power®	DUO-SOFT-SWITCH Field Power®	MONO-SOFT-SWITCH - Reverse Field Power®	Frequenzurichter VECTOR Field Power®
Power supply	400V AC					
Net Frequency	50 / 60 Hz					
Motor power	2,2 kW		0,75 kW for each Motor		2,2 kW	2,2 kW
Motor current	5 A					
Line In fuses	Internal					
Ambient temperature	0 - 40°C					
Inputs	2 x Sensor 1 x Signal bus 1 x Manual operating terminal		1 x Sensor je Motor 1 x Signal bus 1 x Manual operating terminal		2 x Sensor 1 x Signal bus 1 x Manual operating terminal	2 x Sensor 1 x Signal bus 1 x Manual operating terminal
Signal bus	24Vbinary / Cascade / AS-Interface / Profibus DP					
Protection class	IP65					
Sensor voltage	18V - 30V					
Sensor current	20mA					
Dimension	H: 157mm B: 135mm T: 105mm					

subject to qualifications

Asynchronous motor - Compact Drive 050

- Motor size 050
- Compact design
- Worm gear box size 025 / 030
- Short delivery times
- Frequency converter operation

The compact design permit the installation of this drives in any application.

The smart design convince for any application.

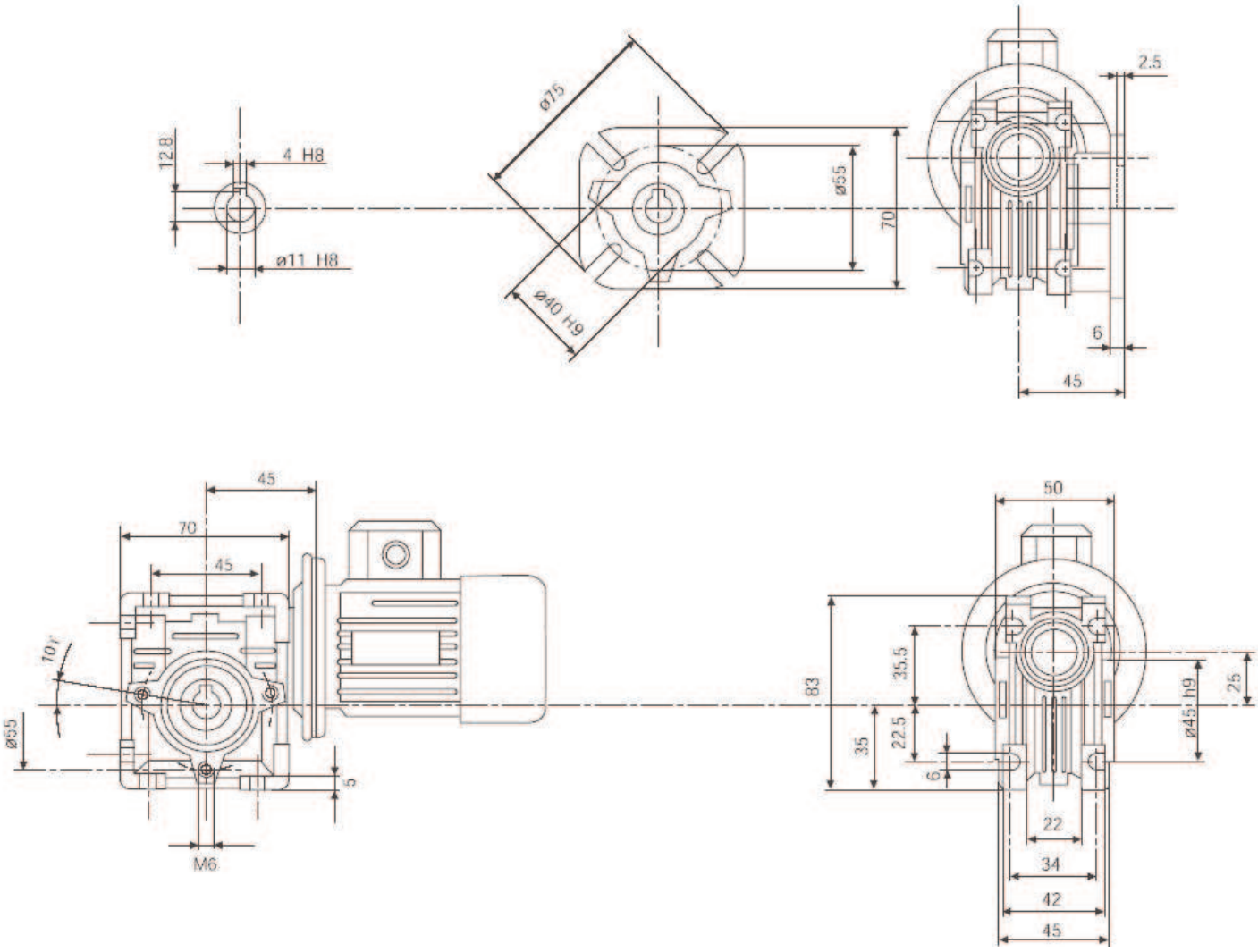
The geared motor provides nine different ratios from i=7.5.....60 and perform a maximum torque of 14 Nm.

Performance of the 025 worm gear box with 4-pole motor 0.09KW

Ratio i	n2 rpm	KW=p1	Nm=T2	f.s
7,5	186,7	0,09	3,8	2,8
10	140,0	0,09	5	2,4
15	93,3	0,09	7,2	1,6
20	70,0	0,09	9	1,3
25	56,0	0,09	10	1,0
30	46,7	0,09	12,3	1,1
40	35,0	0,09	13	1,0
50	28,0	0,09	14	0,7
60	23,3	0,09	14	0,6

subject to qualifications

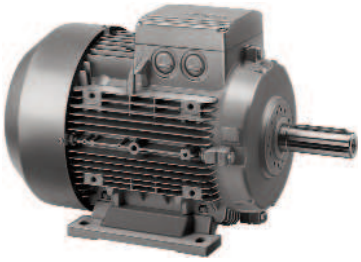
Asynchronous motor - Compact Drive 050



Designation	Motor 050
Motor power	0,04 KW
Rated speed	1350 1/min
Rated current	0,23 A
Cos. phi	0,6
Start current	2,4 A
Break down torque	2,1 Mmax/ Mn
Torque of interia	0,00008 kgm2
Weight	2,2 Kg

subject to qualifications

Three-phase asynchronous motors



All standards motors are available in energy classe EFF1, EFF2 (IE1, IE2).

All motors are available in various frame designs and from 0.09 kW till 7.5 kW in aluminium frame.

Alle motors from 11 KW bis 315 KW are available in cast iron frame. They are also available in various frame designs.

The technical specification of all motors meets the requirements of IEC and VDE

All motors contains the ISO-class F. Higher insulation classes are available on request.

The refitting with breaks or external fans are possible.

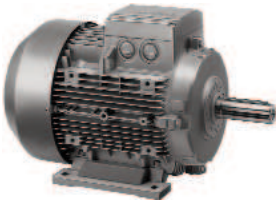
All motor meets the protection class IP55, ISO-class Fand contains 3 thermistors to monitor the motor temperature.

All motors are available in following frame desgins:

- B3
- B5
- B14
- B34
- B35

Special motor sare available on request.

Three-phase asynchronous motors - IE 1



Three-phase asynchronous motors 2-pole
Rotation speed: 3000 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 1

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	kW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 561-2	0,09	3000	0,30	62	0,77	0,31	2,1	5,2	2,2
JS 56 2-2	0,12	3000	0,30	64	0,78	0,41	2,1	5,2	2,2
JS 63 1-2	0,18	3000	0,50	66	0,80	0,61	2,2	5,5	2,3
JS 63 2-2	0,25	3000	0,60	69	0,81	0,96	2,2	5,5	2,3
JS 71 1-1	0,37	3000	0,90	71	0,81	1,26	2,2	6,1	2,9
JS 71 2-2	0,55	3000	1,3	74	0,82	1,88	2,2	6,1	2,9
JS 80 1-1	0,75	3000	1,7	76	0,83	2,54	2,2	6,1	2,9
JS 80 2-2	1,1	3000	2,4	78	0,84	3,72	2,2	7,0	2,9
JS 90 S2	1,5	3000	3,2	80	0,84	5,04	2,2	7,0	2,9
JS 90 L2	2,2	3000	4,6	82	0,85	7,4	2,2	7,0	2,9
JS 100 L2	3	3000	5,9	84	0,88	9,95	2,2	7,5	2,9
JS 112 M2	4	3000	7,7	86	0,88	13,22	2,2	7,5	2,9
JS 132 S1-2	5,5	3000	10,3	87	0,89	18,11	2,2	7,5	2,9
JS 132 S2-2	7,5	3000	14,0	87	0,89	24,7	2,2	7,5	2,9
KS 160 M1-2	11	3000	20,2	88,6	0,89	36	2,2	8,1	2,3
KS 160 M2-2	15	3000	27,2	90	0,89	49	2,2	8,1	2,3
KS 160 L-2	18,5	3000	33	90,5	0,90	60	2,2	8,1	2,3
KS 180 M-2	22	3000	39	91	0,90	71	2,0	8,1	2,3
KS 200 L1-2	30	3000	52,3	92	0,90	97	2,0	8,1	2,3
KS 200 L2-2	37	3000	64,5	92,5	0,90	119	2,0	8,1	2,3
KS 225 M2-2	45	3000	78	93	0,90	145	2,0	8,1	2,3
KS 250 M-2	55	3000	93,3	93,5	0,91	177	2,0	8,1	2,3
KS 280 S-2	75	3000	126	94	0,92	242	2,0	8,1	2,3
KS 280 M-2	90	3000	120	94,4	0,92	290	2,0	8,1	2,3
KS 315 S-2	110	3000	185	94,5	0,91	353	1,8	7,7	2,2
KS 315 M.2	1 32	3000	221	95	0,91	424	1,8	7,7	2,2
KS 315 L1-2	160	3000	264	95,1	0,92	514	1,8	7,7	2,2
KS 315 L2-2	200	3000	330	95,2	0,92	642	1,8	7,7	2,2
KS 355 M-2	250	3000	413	95,2	0,92	801	1,8	7,7	2,2
KS 355 L-2-2	315	3000	520	95,2	0,92	1009	1,8	7,7	2,2

subject to qualifications

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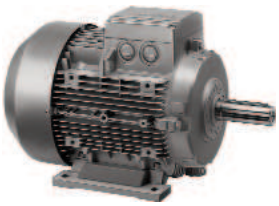
Three-phase asynchronous motors - IE 1



Three-phase asynchronous motors 4-pole
Rotation speed: 1500 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 1

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	KW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 56 2-4	0,09	1500	0,30	58	0,70	0,64	2,0	4,0	2,2
JS 63 1-4	0,12	1500	0,40	59	0,72	0,84	2,1	4,4	2,3
JS 63 2-4	0,18	1500	0,60	62	0,73	1,26	2,1	4,4	2,3
JS 71 1-4	0,25	1500	0,70	67	0,74	1,73	2,1	5,2	2,3
JS 71 2-4	0,37	1500	1,0	70	0,75	2,56	2,1	5,2	2,3
JS 80 1-4	0,55	1500	1,5	72	0,75	3,75	2,3	5,2	2,3
JS 80 2-4	0,75	1500	1,9	74	0,77	5,11	2,3	5,3	2,3
JS 90 S4	1,1	1500	2,7	77	0,78	7,5	2,3	5,5	2,3
JS 90 L4	1,5	1500	3,5	79	0,79	10,23	2,3	5,7	2,3
JS 100 L1-4	2,2	1500	4,7	82	0,82	14,8	2,3	5,8	2,3
JS 110 L2-4	3	1500	6,3	83	0,83	20,18	2,3	6,0	2,3
JS 112 M-4	4	1500	8,2	85	0,83	26,53	2,3	6,5	2,3
JS 132 S4	5,5	1500	10,9	87	0,84	36,48	2,3	6,8	2,3
JS 132 M4	7,5	1500	14,5	88	0,85	49,74	2,3	6,9	2,3
KS 160 M1-4	11	1500	21,4	88,6	0,84	71,0	2,2	8,9	2,3
KS 160 L-4	15	1500	28,5	90,1	0,84	97,0	2,2	8,9	2,3
KS 180 M-4	18,5	1500	34,5	90,4	0,85	120	2,2	7,9	2,3
KS 180 L-4	22	1500	40,8	90,7	0,86	143	2,2	7,9	2,3
KS 200 L1-4	30	1500	55,1	91,6	0,86	195	2,2	7,9	2,3
KS 225 S-4	37	1500	65,9	92,6	0,88	240	2,2	7,9	2,3
KS 225 M-4	45	1500	78,4	93,0	0,89	291	2,2	7,9	2,3
KS 250 M-4	55	1500	95,4	93,5	0,89	355	2,2	7,9	2,3
KS 280 S-4	75	1500	129	94,1	0,89	486	2,2	7,9	2,3
KS 280 M-4	90	1500	155	94,3	0,89	583	2,2	7,9	2,3
KS 315 S-4	110	1500	151,2	94,6	0,89	710	2,1	7,6	2,2
KS 315 M-4	132	1500	226	94,9	0,89	852	2,1	7,6	2,2
KS 315 L1-4	160	1500	273	95,3	0,89	1032	2,1	7,6	2,2
KS 315 L2-4	200	1500	340	95,3	0,89	1291	2,1	7,6	2,2
KS 355 M-2-4	250	1500	430	95,3	0,89	1608	2,1	7,6	2,2
KS 355 L-2-4	315	1500	535	95,3	0,89	2026	2,1	7,6	2,2

subject to qualifications

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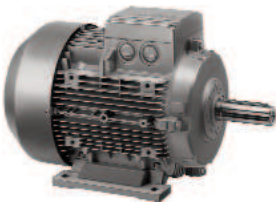
ANTRIEBSTECHNIK

Three-phase asynchronous motors - IE 1

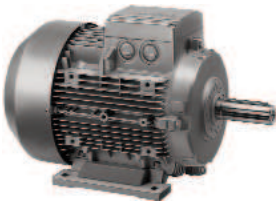


Three-phase asynchronous motors 6-pole
Rotation speed: 1000 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 1

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	KW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 71 2-6	0,25	900	0,90	60	0,68	2,65	1,9	4,0	2,0
JS 80 2-6	0,37	900	1,3	63	0,70	3,93	1,9	4,7	2,0
JS 80 2-6	0,55	900	1,7	66	0,72	5,84	1,9	4,7	2,1
JS 90 S6	0,75	900	2,1	70	0,72	7,87	2,0	5,5	2,1
JS 90 L6	1,1	900	3,0	73	0,73	11,54	2,0	5,5	2,1
JS 100 L6	1,5	900	3,7	78	0,76	15,24	2,0	5,5	2,1
JS 112 M6	2,2	900	5,2	80	0,76	22,35	2,1	6,5	2,1
JS 132 S6	3	900	6,8	82	0,77	29,84	2,1	6,5	2,1
JS 132 M1-6	4	900	9,0	83	0,77	39,79	2,1	6,5	2,1
JS 132 M2-6	5,5	900	11,0	85	0,78	54,71	2,1	6,5	2,1
JS 160 M-6	7,5	900	16,2	86,5	0,78	74	2,0	6,9	2,1
KS 160 L-6	11	900	23,2	87,9	0,78	108	2,0	6,9	2,1
KS 180 L-6	15	900	24,0	89,0	0,81	148	2,0	7,5	2,1
KS 200 L-1-6	18,5	900	29,4	89,7	0,81	182	2,1	7,5	2,1
KS 200 L-2-6	22	900	34,0	90,3	0,83	217	2,1	7,5	2,1
KS 225 M-6	30	900	45,0	91,5	0,84	292	2,0	7,5	2,1
KS 250 M-6	37	900	53,8	92,3	0,86	361	2,1	7,5	2,1
KS 280 S-6	45	900	65,3	92,6	0,86	439	2,1	7,5	2,0
KS 280 M-6	55	900	79,3	93,0	0,86	536	2,1	7,5	2,0
KS 315 S-6	75	900	105,6	93,8	0,88	727	2,0	7,5	2,0
KS 315 M-6	90	900	125,6	94,5	0,88	873	2,0	7,3	2,0
KS 315 L-1-6	110	900	152,8	94,4	0,88	1066	2,0	7,3	2,0
KS 315 L-2-6	132	900	184,8	94,7	0,88	1280	2,0	7,3	2,0
KS 355 M-1-6	160	900	221,6	94,9	0,88	1543	1,9	7,3	2,0
KS 355 M-2-6	200	900	278,8	94,9	0,88	1929	1,9	7,3	2,0
KS 355 L-2-6	250	900	345,6	94,9	0,88	2412	1,9	7,3	2,0
KS 400 M-1-6	315	900	436,8	95,8	0,88	3039	1,4	6,1	2,9

subject to qualifications

Three-phase asynchronous motors - IE 1



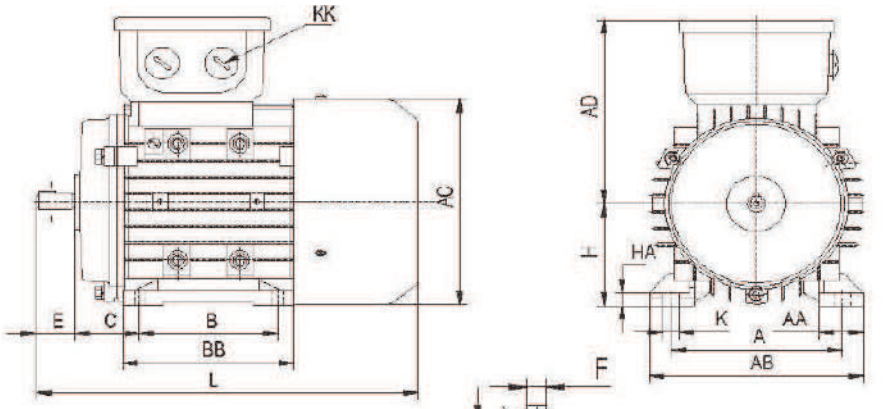
Three-phase asynchronous motors 8-pole
Rotation speed: 750 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 1

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	KW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 80 1-8	0,18	750	0,8	52	0,61	2,49	1,8	3,3	1,9
JS 80 2-8	0,25	750	1,1	55	0,61	3,46	1,8	3,3	1,9
JS 90 S8	0,37	750	1,4	63	0,61	5,12	1,8	4,0	1,9
JS 90 L8	0,55	750	2,0	64	0,61	7,61	1,8	4,0	2,0
JS 100 L1-8	0,75	750	2,2	72	0,67	10,23	1,8	4,0	2,0
JS 110 L2-8	1,1	750	3,1	74	0,69	15,00	1,8	5,0	2,0
JS 112 M8	1,5	750	4,1	76	0,69	20,46	1,8	5,0	2,0
JS 132 S8	2,2	750	5,6	79	0,72	29,59	1,8	6,0	2,0
JS 132 M8	3	750	7,3	80	0,74	40,35	1,8	6,0	2,0
KS 160 M1-8	4	750	9,7	81,7	0,73	53	1,9	6,9	2,0
KS 160 M2-8	5,5	750	12,9	83,4	0,74	73	2,0	6,9	2,0
KS 160 L-2-8	7,5	750	16,9	85,5	0,75	99	2,0	6,9	2,0
KS 180 L-8	11	750	24,0	87	0,76	144	2,0	6,8	2,0
KS 200 L-8	15	750	32,2	88,4	0,76	196	2,0	6,8	2,0
KS 225 S-8	18,5	750	39,4	89,4	0,79	242	1,9	6,8	2,0
KS 225 M8	22	750	44,8	90	0,79	288	1,9	6,8	2,0
KS 250 M-8	30	750	60	91,1	0,8	392	1,9	6,8	2,0
KS 280 S-8	37	750	72,8	91,7	0,8	484	1,9	6,8	2,0
KS 280 M-8	45	750	88	92,2	0,82	589	1,9	6,8	2,0
KS 315 S-8	55	750	105	93	0,82	715	1,8	6,8	2,0
KS 315 M-8	75	750	141	93,8	0,83	974	1,8	6,8	2,0
KS 315 L-1-8	90	750	167	94	0,85	1169	1,8	6,8	2,0
KS 315 L-2-8	110	750	198	94,3	0,86	1429	1,8	6,8	2,0
KS 355 M-1-8	132	750	234	94,7	0,87	1704	1,8	6,6	2,0
KS 355 M-2-8	160	750	280	95	0,87	2065	1,8	6,6	2,0
KS 355 L-2-8	200	750	350	95	0,81	2581	1,8	6,6	2,0
KS 400 M-1-8	250	750	469	95	0,81	3205	1,2	6,6	2,0
KS 400 M-2-8	280	750	525	95	0,85	3589	1,2	6,6	3,4
KS 400 L1-8	315	750	563	95	0,85	4038	1,2	6,6	3,4

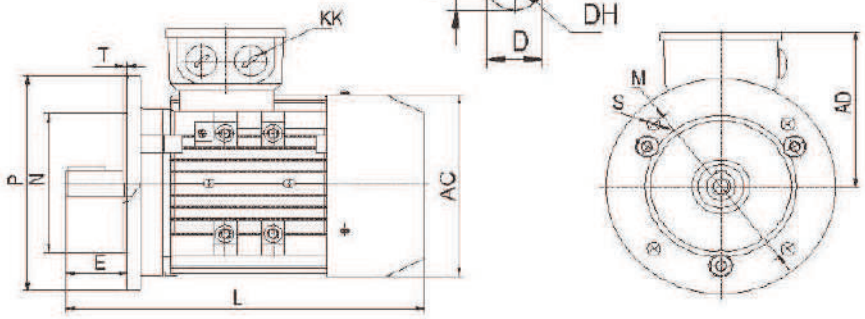
subject to qualifications

Three-phase asynchronous motors - IE 1

B3



B5



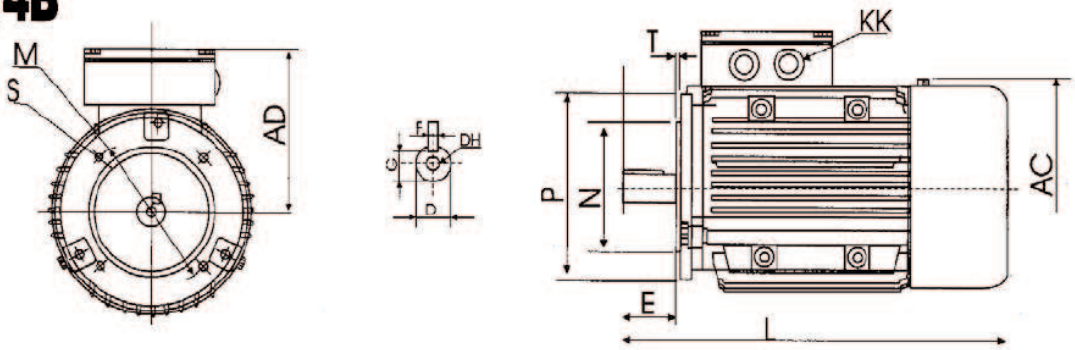
Type: JS... B3, B35, B34
Type: JF... B5, B14A, B14B

Motor-type	A	AB	AC	AD	B	BB	C	D	DH	E	F	G	H	K	KK	L	B5				
																	M	N	P	S	T
JS56	90	115	110	100	71	88	36	9	M4X12	20	3	7,2	56	5,8	1-M20X1,5	199	100	80	120	7	3
JS63	100	135	130	111	80	100	40	11	M4X12	23	4	8,5	63	7	1-M20X1,5	217	115	95	140	10	3
JS71	112	150	145	118	90	110	45	14	M5X12	30	5	11	71	7	1-M20X1,5	245	130	110	160	10	3,5
JS80	125	165	175	134	100	125	50	19	M6X16	40	6	15,5	80	10	1-M25X1,5	287	165	130	200	12	3,5
JS90S	140	180	195	140	100	125	56	24	M8X19	50	8	20	90	10	1-M25X1,5	315	165	130	200	12	3,5
JS90L	140	180	195	140	125	150	56	24	M8X19	50	8	20	90	10	1-M25X1,5	340	165	130	200	12	3,5
JS100L	160	205	215	160	140	172	63	28	M10X22	60	8	24	100	12	1-M32X1,5	385	215	180	250	15	4
JS112M	190	230	240	178	140	181	70	28	M10X22	60	8	24	112	12	2-M32X1,5	400	215	180	250	15	4
JS132S	216	270	275	206	140	186	89	38	M12X28	80	10	33	132	12	2-M32X1,5	483	265	230	300	15	4
JS132M	216	270	275	206	178	224	89	38	M12X28	80	10	33	132	12	2-M32X1,5	510	265	230	300	15	4

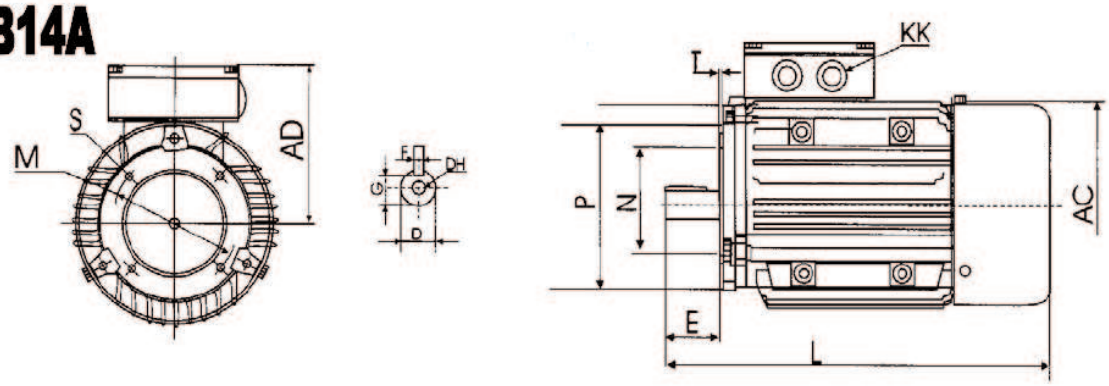
subject to qualifications

Three-phase asynchronous motors - IE 1

B14B



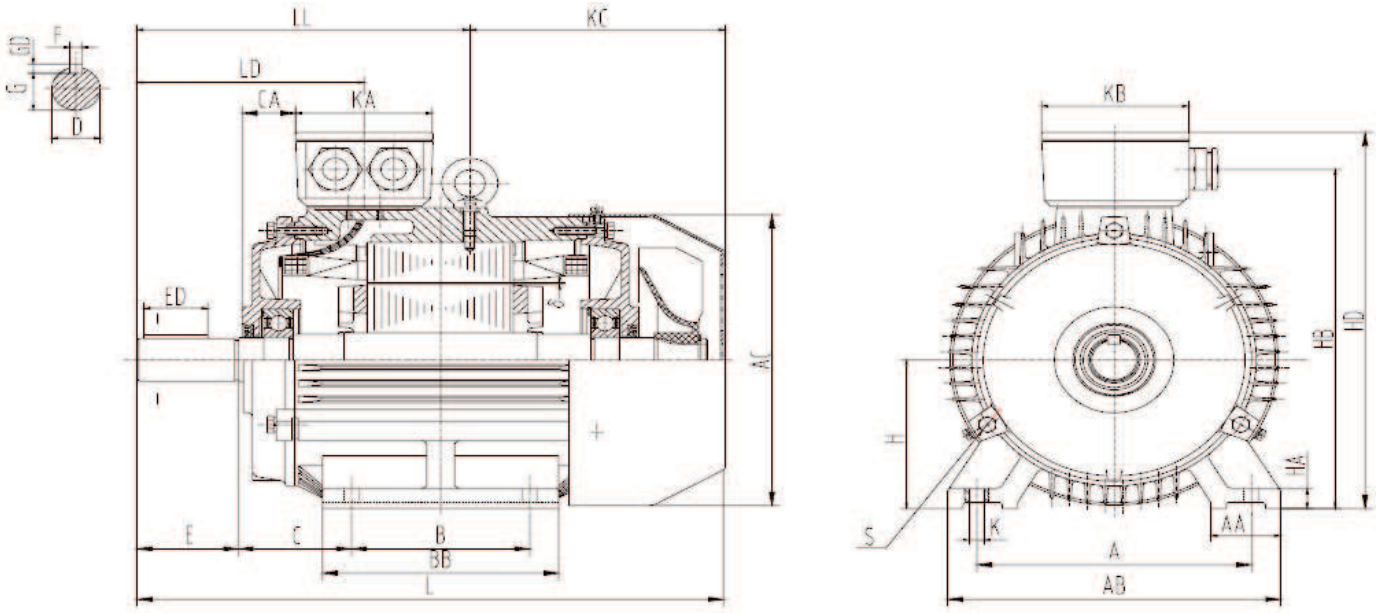
B14A



Motor-type	AC	AD	D	DH	E	F	G	KK	L	B14A					B14B				
										M	N	P	S	T	M	N	P	S	T
JF56	110	100	9	M4X12	20	3	7,2	1-M20X1,5	199	65	50	80	M5	2,5	85	70	105	M6	2,5
JF63	130	111	11	M4X12	23	4	8,5	1-M20X1,5	217	75	60	90	M5	2,5	100	80	120	M6	2,5
JF71	145	118	14	M5X12	30	5	11	1-M20X1,5	245	85	70	105	M6	2,5	115	95	140	M8	3
JF80	175	134	19	M6X16	40	6	15,5	1-M25X1,5	287	100	80	120	M6	3	130	110	160	M8	3,5
JF90S	195	140	24	M8X19	50	8	20	1-M25X1,5	315	115	95	140	M8	3	130	110	160	M8	3,5
JF90L	195	140	24	M8X19	50	8	20	1-M25X1,5	340	115	95	140	M8	3	130	110	160	M8	3,5
JF100L	215	160	28	M10X22	60	8	24	1-M32X1,5	385	130	110	160	M8	3,5	165	130	200	M10	3,5
JF112M	240	178	28	M10X22	60	8	24	2-M32X1,5	400	130	110	160	M8	3,5	165	130	200	M10	3,5
JF132S	275	206	38	M12X28	80	10	33	2-M32X1,5	483	165	130	200	M10	3,5	215	180	250	M12	4
JF132M	275	206	38	M12X28	80	10	33	2-M32X1,5	510	165	130	200	M10	3,5	215	180	250	M12	4

subject to qualifications

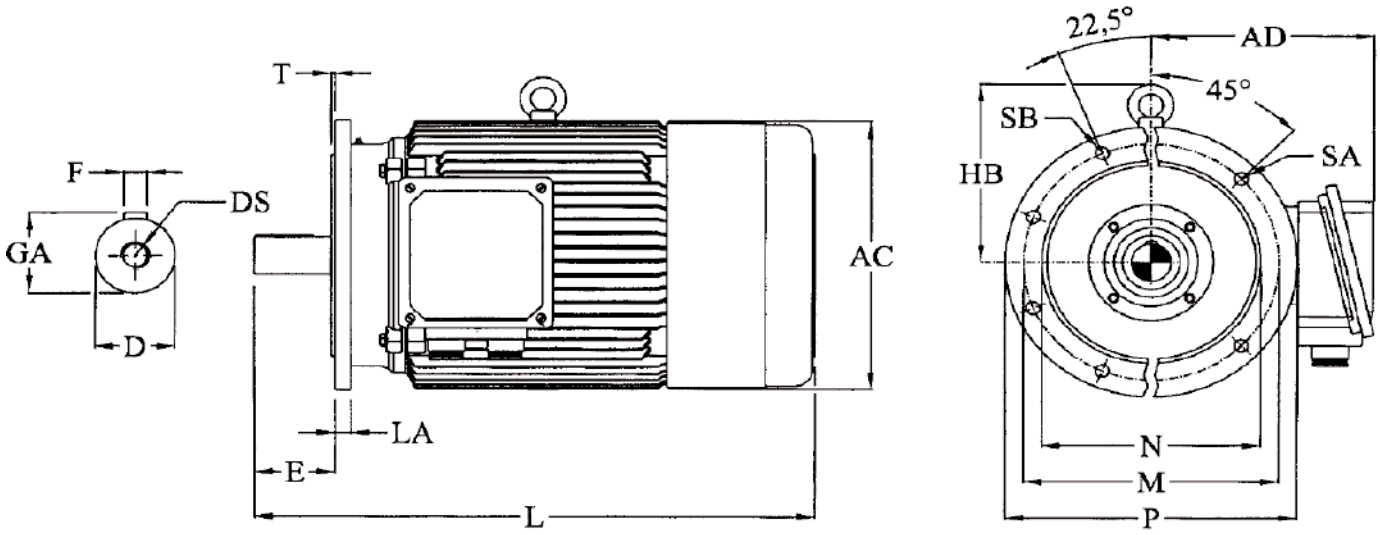
Three-phase asynchronous motors - IE 1



Motor-type		PN Type / DIN	A	B	C	H	K	D 2P	D 4-8P	E 2P	E 4-8P	F 2P	F 4-8P	G 2P	G 4-8P	GD 2P	GD 4-8P	ED 2P	ED 4-8P	DH	AA	AB	AC	BB	HA	HD	L 2P	L 4-8P	LD 2P	LD 4-8P	LL 2P	LL 4-8P	CA	HB	KA	KB	KC
			Anbaumaße, mm																																		
KS160	M	FF300	254	210	108	160	15	42k6		110		12		37		8		90		M16	65	320	330	260	20	420	615		156		374		66	371	172	182	241
	L	A350		254																				304			670				385						285
KS180	M	FF300	279	241	121	180	15	48k6		110		14		42,5		9		90		M16	70	350	380	311	22	455	700		271		380		81	417	172	182	320
	L	A350		279																				349			740										360
KS200	L	FF350	318	305	133	200	19	55m6		110		16		49		10		90		M20	70	395	420	369	25	505	770		296		427		92	449	210	230	343
		A400																																		
KS225	S	FF400	356	286	149	225	19	-	60m6	-	140	-	18	49	53	10	11	90	110	M20	75	435	470	368	28	560	-	815	-	329	-	458	95	505	210	230	362
	M	A450		311				55m6		110		16												393			820	845	290		429						387
KS250	M	FF500	406	349	168	250	24	60m6	65m6	140		18		53	58	11	11	110		M20	80	490	510	445	30	615	910		347		497		99	560	238	269	418
		A550																																		
KS280	S	FF500	457	368	190	280	24	65m6	75m6	140		18	20	58	67,5	11	12	110		M20	95	550	590	485	35	680	985		355		515		107	620	238	269	470
	M	A550		419																				536			1035				530						505
KS315	S	FF600	508	406	216	315	28	65m6	80m6	140	170	18	22	58	71	11	14	110	140	M20	120	635	645	570	45	845	1160	1270	397		612	642	117	726	310	352	578
	M	A660		457																				680			1190	1300	437	427	647	677					653
	L			508																																
KS355	M	FF740	610	560	254	355	28	75m6	100m6	140	210	20	28	67,5	100	12	14	130	200	M24	120	730	710	750	52	1010	1500	1570	424		745		119	900	370	420	750
	L			630																									454		815					

subject to qualifications

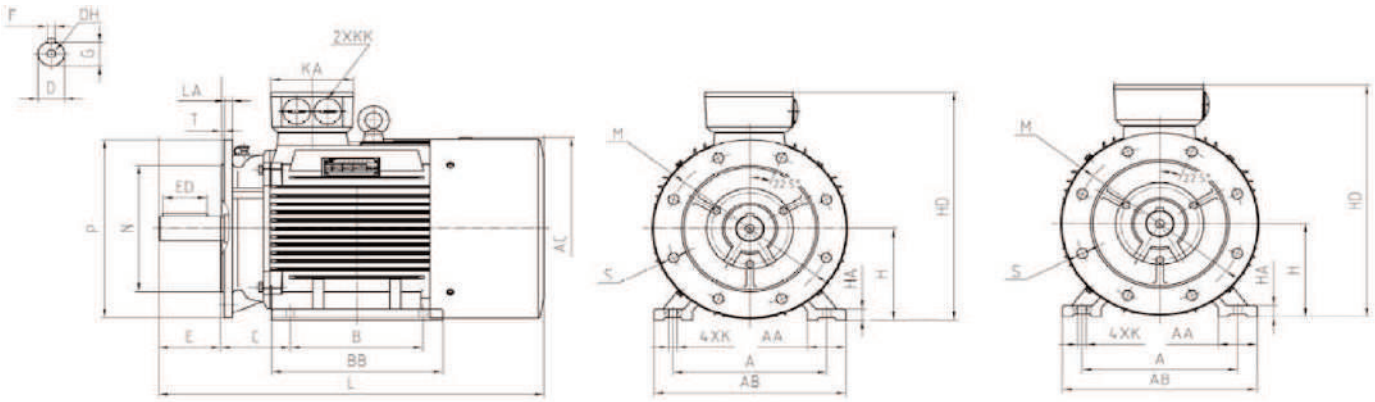
Three-phase asynchronous motors - IE 1



Motor-type		Anbaumaße, mm																			
		PN type	M	N	P	LA	SA	T	D		E		F		GA		AC	HB	AD	L	
		DIN		j6			Ø		2P	4-8P	2P	4-8P	2P	4-8P	2P	4-8P				2P	4-8P
KF160	M	FF300	300	250	350	18	4x 19	5	42k6		110		12		45		314	228	255	615	
	L	A350																		670	
KF180	M	FF300	300	250	350	20	4x 19	5	48k6		110		14		51,5		352	254	280	700	
	L	A350																		740	
KF200	L	A400	350	300	400	22	4x 19	5	55m6		110		16		59		395	283	305	770	
KF225	S	FF400	400	350	450	22	8x 19	5	-	60m6	-	140	-	18	-	64	-	268	335	-	820
	M	A450							55m6		110		16		59		470			815	845
KF250	M	A550	500	450	550	24	8x 19	5	60m6	65m6	140		18		64	69	480	325	370	910	
KF280	S	FF500	500	450	550	24	8x 19	5	65m6	75m6	140		18	20	69	79,5	547	360	400	985	
	M	A550																		1035	
KF315	S	FF600	600	550	660	25	8x 24	6	65m6	80m6	140	170	18	22	69	85	620	430	530	1185	1215
	M	A660																		1295	1325
	L																				
KF355	M	FF740	740	680	800	25	8x 24	6	75m6	100m6	140	210	20	25	79,5	106	710	490	655	1500	1570
	L																				

subject to qualifications

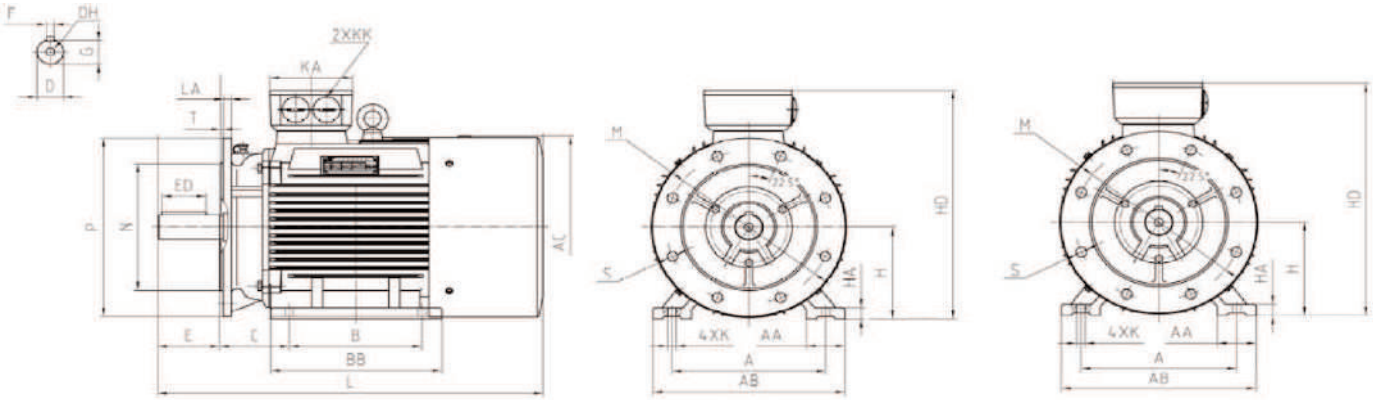
Three-phase asynchronous motors - IE 1



Motor-type		Anbaumaße, mm																										
		A	B	C	H	K	D		E		F		GA		AA	AB	AC	BB	HA	AD	L		PN Type	M	N	P	LA	S	T
							2P	4-8P	2P	4-8P	2P	4-8P	2P	4-8P							2P	4-8P	DIN		j6			Ø	
KS160	M	254	210	108	160	15	42k6		110		12		46		65	320	314	274	22	255	615		FF300	300	250	350	18	4x19	5
	L		254															318			670		A350						
KS180	M	279	241	121	180	15	48k6		110		14		51,5		70	355	352	315	25	280	700		FF300	300	250	350	20	4x19	5
	L		279															355			740		A350						
KS200	L	318	305	133	200	19	55m6		110		16		59		70	395	395	375	28	305	770		FF350 A400	350	300	400	22	4x19	5
KS225	S	356	286	149	225	19	-	60m6	-	140	-	18	59	64	75	435	470	375	31	335	-	820	FF400	400	350	450	22	8x19	5
	M		311				55m6		110		16							400			815	845	A450						
KS250	M	406	349	168	250	24	60m6	65m6	140		18		64	69	80	490	480	450	33	370	910		FF500 A550	500	450	550	24	8x19	5
KS280	S	457	368	190	280	24	65m6	75m6	140		18	20	69	79,5	85	550	547	435	38	400	985		FF500	500	450	550	24	8x19	5
	M		419															536			1035		A550						
KS315	S	508	406	216	315	28	65m6	80m6	140	170	18	22	69	86	120	635	620	570	48	530	1185	1215	FF600 A660	600	550	660	25	8x24	6
	M		457															680			1295	1325							
	L		508																										
KS355	M	610	560	254	355	28	75m6	100m6	140	210	20	25	79,5	106	116	730	710	760	57	655	1500	1570	FF740	740	680	800	25	8x24	6
	L		630																										

subject to qualifications

Three-phase asynchronous motors - IE 1



Typ / Type KS **Baugröße / Size / hauteur d´axe 400** **B3**

Motor-type	Anbaumaße, mm																	
	A	B	C	H	K	D 4-8P	E 4-8P	F 4-8P	G 4-8P	GD 4-8P	AA	AB	AC	BB	HA	HD	L 4-8P	LD 4-8P
KS400 M	686	630	280	400	35	110m6	210	28	100	16	120	806	856	1090	45	1010	1920	435
KS400 L		710																

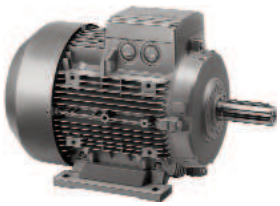
B35

Motor-type	Anbaumaße, mm																						
	A	B	C	H	K	D 4-8P	E 4-8P	F 4-8P	G 4-8P	GD 4-8P	AA	AB	AC	BB	HA	HD	L 4-8P	LD 4-8P	LA	LB	M	N	P	S
KS400 M	686	630	280	400	35	110m6	210	28	100	16	120	806	856	1090	45	1010	1920	435	25	1710	940	880	1000	8x28
KS400 L		710																						

subject to qualifications

VATHAUER
ANTRIEBSTECHNIK

Three-phase asynchronous motors - IE 2



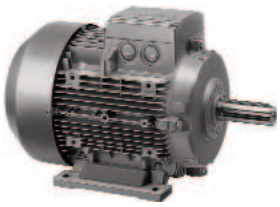
Three-phase asynchronous motors 2-pole
Rotation speed: 3000 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 2 | IEC60034-30:2008-IEC60034-2-1-2007

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	kW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 80 1-2	0,75	3000	1,7	77,6	0,83	2,49	2,5	5,3	3,0
JS 80 2-2	1,1	3000	2,4	79,7	0,84	3,65	3,2	7,0	3,8
JS 90 S-2	1,5	3000	3,1	81,6	0,84	4,96	2,7	7,1	3,5
JS 90 L-2	2,2	3000	4,5	83,3	0,85	7,27	2,4	6,9	3,0
JS 100 L-2	3	3000	5,9	84,9	0,87	9,91	3,2	8,0	4,0
JS 112 M-2	4	3000	7,6	85,9	0,88	13,11	2,5	7,5	3,0
JS 132 S-1-2	5,5	3000	10,6	87,1	0,86	17,88	2,7	7,5	3,5
JS 132 S-2-2	7,5	3000	13,9	88,4	0,88	24,36	2,4	7,5	3,3
KS 160 M-1-2	11	3000	19,9	90,9	0,88	35,70	2,5	7,8	3,0
KS 160 M2-2	15	3000	26,9	90,8	0,89	48,90	2,3	7,1	2,7
KS 160 L-2	18,5	3000	32,6	91,6	0,90	60,16	2,7	8,1	2,9
KS 180 M-2	22	3000	37,4	92,1	0,92	71,14	2,6	8,0	3,2
KS 200 L-1-2	30	3000	51,8	92,0	0,90	96,44	2,3	7,2	3,0
KS 200 L-2-2	37	3000	64,0	92,5	0,90	119,28	2,4	8,0	4,0
KS 225 S-2	45	3000	81,3	93,7	0,90	144,60	2,2	8,0	3,4
KS 250 M-2	55	3000	93,4	94,1	0,90	176,60	2,2	7,6	3,0
KS 280 S-2	75	3000	130,1	94,4	0,91	240,30	2,4	8,3	3,5
KS 280 M-2	90	3000	152,8	94,7	0,91	288,60	2,2	6,9	2,8
KS 315 S-2	110	3000	190,8	94,8	0,91	352,70	2,0	6,7	3,2
KS 315 M-2	1 32	3000	217,8	95,3	0,92	423,30	2,4	7,5	3,6
KS 315 L-1-2	160	3000	261,7	95,5	0,92	513,80	2,0	6,3	3,0
KS 315 L-2-2	200	3000	335,3	95,5	0,92	641,20	2,6	7,6	3,7
KS 355 M-2	250	3000	404,2	95,4	0,94	801,10	1,7	6,1	2,7
KS 355 L-2	315	3000	507,2	95,8	0,94	1009,6	1,7	5,8	2,6

subject to qualifications

VATHAUER
ANTRIEBSTECHNIK

Three-phase asynchronous motors - IE 2

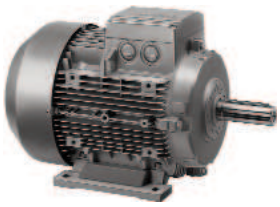


Three-phase asynchronous motors 4-pole
Rotation speed: 1500 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 2 | IEC60034-30:2008-IEC60034-2-1-2007

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	kW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 80 2-4	0,75	1500	1,8	79,8	0,76	5,12	2,4	5,0	2,9
JS 90 S-4	1,1	1500	2,5	81,6	0,77	7,30	3,0	6,0	3,5
JS 90 L-4	1,5	1500	3,4	82,9	0,77	9,91	3,2	6,8	3,5
JS 100 L-1-4	2,2	1500	4,6	84,5	0,81	14,60	3,0	7,0	3,5
JS 110 L-2-4	3	1500	6,1	85,5	0,82	19,9	2,5	7,0	3,3
JS 112 M-4	4	1500	8,1	86,7	0,82	26,40	3,5	7,6	4,0
JS 132 S-4	5,5	1500	10,9	87,8	0,83	36,10	2,2	6,4	2,8
JS 132 M-4	7,5	1500	14,5	88,7	0,84	49,20	2,4	7,0	3,0
KS 160 M-1-4	11	1500	21,1	90,9	0,83	71,30	2,4	8,2	3,1
KS 160 L-4	15	1500	28,1	91,1	0,85	97,40	2,2	7,1	2,5
KS 180 M-4	18,5	1500	34,7	92,1	0,85	119,90	2,2	7,9	2,9
KS 180 L-4	22	1500	39,8	92,4	0,85	142,70	2,2	8,3	2,9
KS 200 L-4	30	1500	54,8	92,7	0,85	193,90	2,3	7,2	3,0
KS 225 S-4	37	1500	65,1	93,2	0,88	238,20	2,4	7,5	3,0
KS 225 M-4	45	1500	83,2	93,6	0,88	289,90	2,5	7,4	3,1
KS 250 M-4	55	1500	97,1	94,1	0,88	354,20	2,3	6,9	2,8
KS 280 S-4	75	1500	130,5	94,5	0,88	481,80	2,4	7,2	3,1
KS 280 M-4	90	1500	156,8	94,8	0,88	578,20	2,3	6,9	3,0
KS 315 S-4	110	1500	185,0	94,8	0,91	706,30	2,2	6,7	2,9
KS 315 M-4	132	1500	221,8	95,0	0,90	848,00	2,4	7,4	2,9
KS 315 L-1-4	160	1500	265,2	95,5	0,91	1027,50	2,3	6,7	2,8
KS 315 L-2-4	200	1500	328,8	95,5	0,92	1285,10	2,2	6,2	2,6
KS 355 M-2-4	250	1500	407,0	95,3	0,93	1603,90	2,1	5,7	2,5
KS 355 L-2-4	315	1500	513,2	95,7	0,93	2020,30	2,4	7,2	2,6

subject to qualifications

Three-phase asynchronous motors - IE 2

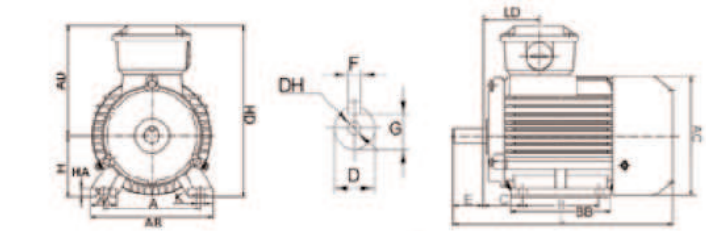


Three-phase asynchronous motors 6-pole
Rotation speed: 1000 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Energy Efficiency: IE 2 | IEC60034-30:2008-IEC60034-2-1-2007

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Locked rotor torque	Locked rotor current	Break down torque
	kW	1/ min	A	%	cos Phi	Nm	Ma/Mn	Ia/In	Mmax/Mn
JS 90 S-6	0,75	900	1,9	75,1	0,72	7,67	2,2	4,5	2,4
JS 90 L-6	1,1	900	2,8	76,1	0,72	11,10	2,4	4,5	2,6
JS 100 L-6	1,5	900	3,6	80,0	0,75	15,20	1,8	4,2	2,2
JS 112 M-6	2,2	900	5,1	81,9	0,76	21,90	2,3	4,5	2,8
JS 132 S-6	3	900	6,8	83,4	0,76	29,70	1,8	4,5	2,4
JS 132 M-1-6	4	900	8,9	84,8	0,76	39,60	2,3	5,0	2,7
JS 132 M-2-6	5,5	900	12,0	86,2	0,77	54,40	1,9	5,5	2,8
JS 160 M-6	7,5	900	15,3	89,0	0,80	73,80	2,2	6,7	3,0
KS 160 M-1-6	11	900	22,3	89,3	0,80	108,20	2,1	6,7	2,5
KS 180 L-6	15	900	29,3	90,6	0,82	146,10	2,1	7,0	2,6
KS 200 L-1-6	18,5	900	35,8	91,4	0,82	179,50	2,5	7,5	3,1
KS 200 L-2-6	22	900	42,2	91,2	0,83	213,80	2,4	7,2	2,9
KS 225 M-6	30	900	59,0	92,1	0,83	291,00	2,3	7,2	2,7
KS 250 M-6	37	900	67,8	92,8	0,85	358,60	2,4	7,5	3,0
KS 280 S-6	45	900	81,4	93,3	0,85	434,10	2,2	7,0	3,1
KS 280 M-6	55	900	100,8	80,6	0,85	530,20	2,1	7,3	3,1
KS 315 S-6	75	900	134,6	94,2	0,85	722,80	2,3	6,7	2,9
KS 315 M-6	90	900	160,3	94,6	0,86	867,30	2,4	6,8	2,9
KS 315 L-1-6	110	900	194,6	94,6	0,86	1061,20	2,2	6,2	2,5
KS 315 L-2-6	132	900	230,8	95,2	0,87	1271,60	2,5	7,1	2,8
KS 355 M-1-6	160	900	269,1	94,8	0,91	1543,50	2,0	6,5	2,6
KS 355 M-2-6	200	900	331,5	95,2	0,91	1929,90	1,9	6,3	2,5
KS 355 L-6	250	900	414,2	95,3	0,91	2415,30	1,7	5,6	2,2

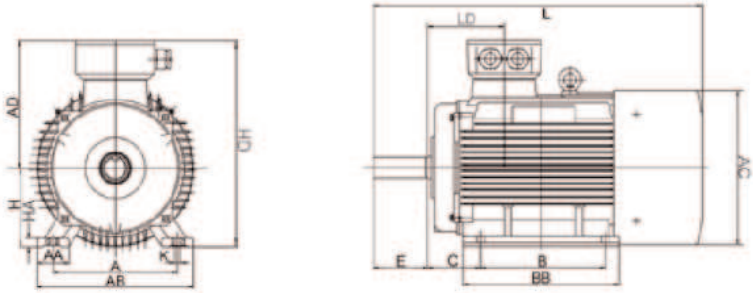
subject to qualifications

Three-phase asynchronous motors - IE 2



Typ: JS
Baugröße: 56 - 132

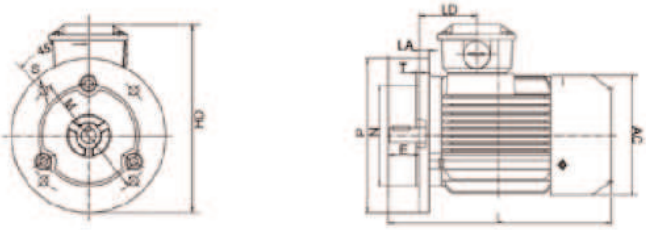
B3



Typ: JS
Baugröße: 56 - 132

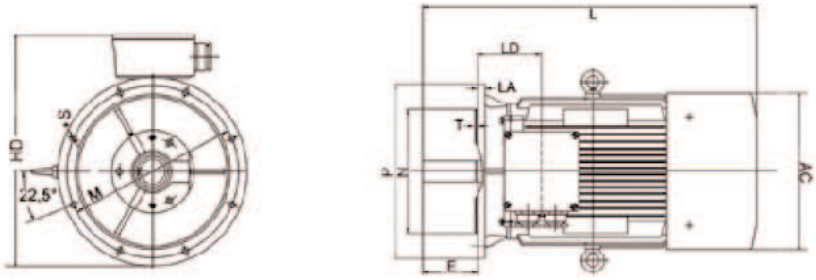
Typ: JS
Baugröße: 56 - 132

B3



Typ: JS
Baugröße: 56 - 132

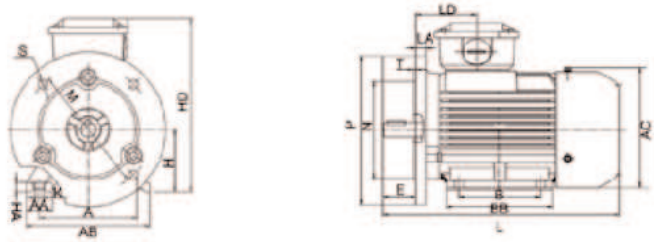
B5



Typ: JS
Baugröße: 56 - 132

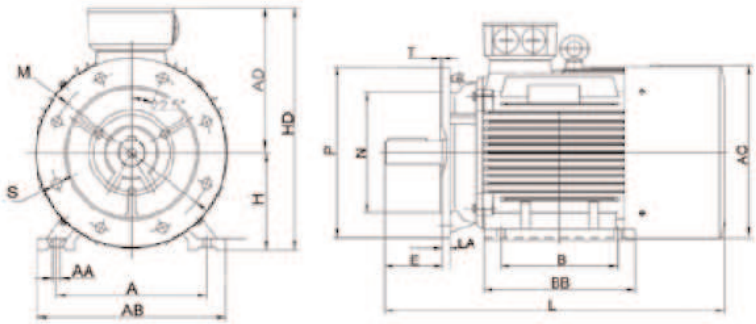
Typ: JS
Baugröße: 56 - 132

B5



Typ: JS
Baugröße: 56 - 132

B35



Typ: JS
Baugröße: 56 - 132

Typ: JS
Baugröße: 56 - 132

B35

ab BG 280 8 Befestigungslöcher

VATHAUER
ANTRIEBSTECHNIK

Three-phase asynchronous motors - IE 2

Typ: JS/JF
HS/HF

Baugröße: 56 - 355

B3 / B5 / B35

Motor-type		A	B	C	D	DH	E	F	G	H	K	AB	AC	AD	BB	L	M	N j6	P	S	T
JS56	2-6	90	71	36	9	M4x12	20	3	7,2	56	5,8	115	110	100	88	199	100	80	120	7	3
	8											111	113	96							
JS63	2-6	100	80	40	11		23	4	8,5	63	7	135	130	111	100	217	115	95	140	10	
	8											123	120	102							
JS71	2-6	112	90	45	14	M5x12	30	5	11	71		150	145	118	110	245	130	110	160		
	8											138	136	109							
JS80	2-6	125	100	50	19	M6x16	40	6	15,5	80		165	175	134	125	287					3,5
	8											157	155	124							
JS90S	2-6	140		56	24	M8x19	50	8	20	90	10	180	195	140		315	165	130	200	12	
	8											173	175	137		310					
JS90L	2-6		125									180	195	140	150	340					
	8											173	175	137		310					
JS100L	2-6	160		63	28	M10x22	60		24	100		205	215	160	172	385	215	180	250	15	4
	8											196	195	151		383					
JS112M	2-6	190	140	70						112	12	230	240	178	181	400					
	8											227	219	169	180	401					
JS132S	2-6	216		89	38	M12x28	80	10	33	132		270	275	206	186	483	265	230	300		
	8											262	258			475					
JS132M	2-6		178									270	275		224	510					
	8											262	258			513					
HS160M	2-8	254	210	108	42	M16x36	110	12	37	160	14,5	314	314	251	260	608	300	250	350	4x19	
HS160L	2-8		254												304	652					
HS180M	2-8	279	241	121	48			14	42,5	180		349	355	267	311	688					
HS180L	2-8		279												349	726					
HS200I	2-8	318	305	133	55			16	49	200	16,5	368	397	299	369	779	350	300	400		
HS225S	2-8	356	286	149	60		140	18	53	225	18,5	431	46	322	368	824	400	350	450	8x19	5
HS225M	2		311		55		110	16	49						393	819					
	4-8				60				53							849					
HS250M	2	406	349	168				18		250		484	495	358	445	910	500	450	550		
	4-8				65				58												
HS280S	2	457	368	190			140			280	24	542	547	387	485	981					
	4-6				75			20	67,5												
	8															982					
HS280M	2		419		65			18	58						536	1033					
	4-8				75			20	67,5												
HS315S	2	508	406	216	65	M20x42		10	50	315	28	620	620	527	570	1194	600	550	660	8x24	6
	4-8				80		170	22	71							1224					
HS315M	2		457		65		140	18	58						680	1304					
	4-8				80		170	22	71							1334					
HS315L	2		508		65		140	18	58							1304					
	4-8				80		170	22	71							1334					
HS355M	2	610	560	254	75		140	20	67,5	355		726	698	642	750	1486					
	4-6				100		210	28	86							1516	740	680	800		
	8				95		170	25													
HS355I	2		630		75		140	20	67,5							1486	600	550	660		
	4-6				100		210	28	86							1516					
	8				95		170	25									740	680	800		

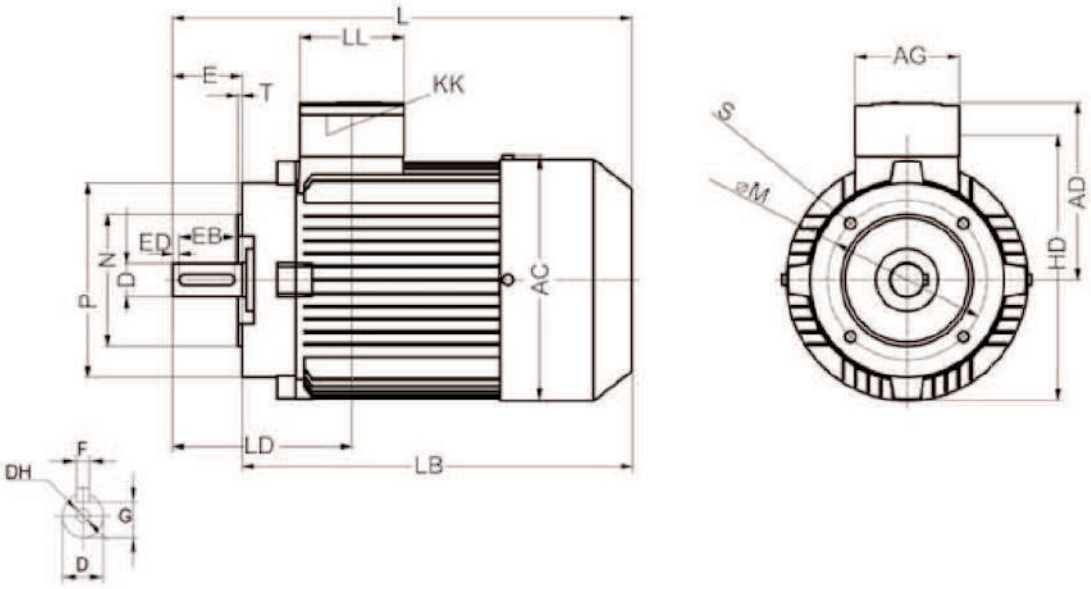
subject to qualifications

Three-phase asynchronous motors - IE 2

Typ: JF

Baugröße: 56 - 132

B14A



Motor-type		AC	AD	AG	D	DH	E	EB	ED	F	G	GA	HD	KK	L	LB	LD	LL	M	N	P	S	T
JF56	2-8	113	96	86	9	M4X12	20	16	2	3	7,2	10,2	152,5		199	179	63	86	65	50	80	M5	
JF63	2-8	120	102		11		23	16	3,5	4	8,5	12,5	162	1-M20X1,5	217	194	72,5		75	60	90		2,5
JF71	2-8	136	109	101	14	M5X12	30	25	2,5	5	11	16	177		245	215	80,5	101	85	70	105	M6	
JF80	2-6	156	129		19	M6X16	40	30		6	15,5	21,5	208		290	250	75		100	80	120		
	8	155	124										201,5		287	247	78						
JF90S	2-6	175	140	109	24	M8X19	50	40	5	8	20	27	227,5	1-M25X1,5	325	275	95	109	115	95	140	M8	3
	8		137										224,5		310	260	86						
JF90L	2-6		140										227,5		350	300	95						
	8		137										224,5		335	285	86						
JF100L	2-6	198	156		28	M10X22	60	50			24	31	255	1-M32X1,5	398	338	88,5		130	110	160		3,5
	8	195	151										248,5		383	323	84						
JF112M	2-6	219	166										275,5		447	387	92						
	8		169										278,5		401	341							
JF132S	2-6	258	188	117,5	38	M12X28	80	65	7,5	10	33	41	317	2-M32X1,5	475	395	100	117,5	165	130	200	M10	
	8																						
JF132M	2-6														513	433							
	8																						

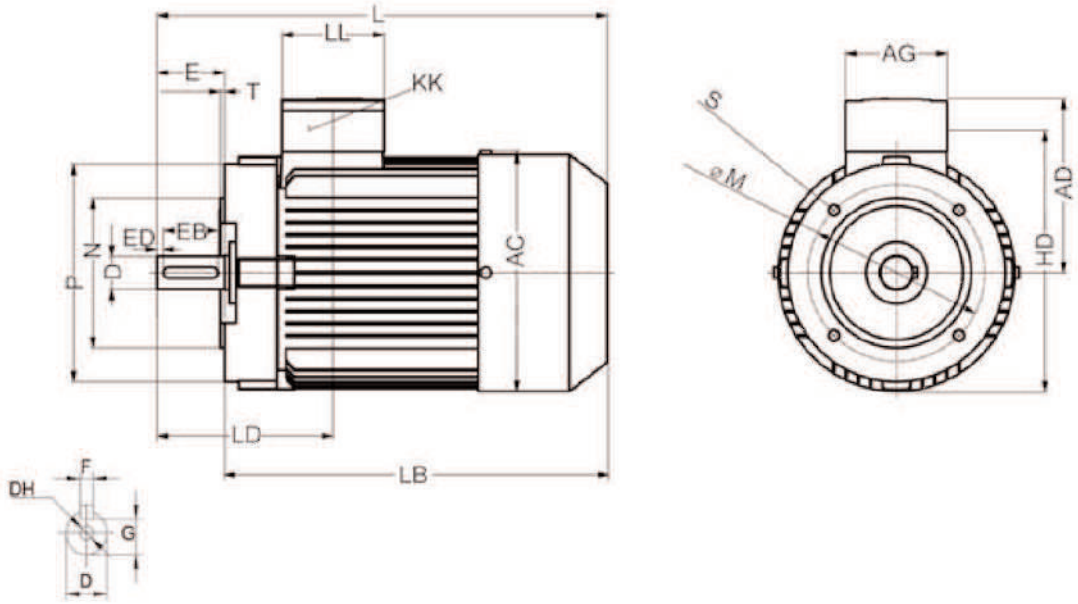
subject to qualifications

Three-phase asynchronous motors - IE 2

Typ: JF

Baugröße: 56 - 132

B14B



Motor-type		AC	AD	AG	D	DH	E	EB	ED	F	G	GA	HD	KK	L	LB	LD	LL	M	N	P	S	T
JS56	2-8	113	96	86	9	M4X12	20	16	2	3	7,2	10,2	152,5		199	179	63	86	85	70	105	M6	2,5
JS63	2-8	120	102		11		23	16	3,5	4	8,5	12,5	162	1-M20X1,5	217	194	72,5		100	80	120	M6	3
JS71	2-8	136	109	101	14	M5X12	30	25	2,5	5	11	16	179		245	215	80,5	101	115	95	140		
JS80	2-6	158	129		19	M6X16	40	30		6	15,5	21,5	209		290	250	75						
	8	155	124										204		287	247	78						
JS90S	2-6	175	140	109	24	M8X19	50	40	5	8	20	27	227,5	1-M25X1,5	325	275	95	109	130	110	160	M8	3,5
	8		137										224,5		310	260	86						
JS90L	2-6		140										227,5		350	300	95						
	8		137										224,5		335	285	86						
JS100L	2-6	198	156		28	M10X22	60	50			24	31	256		398	338	86,5		165	130	200	M10	
	8	195	151										251	1-M32X1,5	383	323	84						
JS112M	2-6	219	166										275,5		447	387	92						
	8		169										278,5		401	341							
JS132S	2-6	258	188	117,5	38	M12X28	80	65	7,5	10	33	41	317	2-M32X1,5	475	395	100	117,5	215	180	250	M12	4
	8																						
JS132M	2-6														513	433							
	8																						

subject to qualifications

Single-phase motors

Single-phase motors 2-pole | 4-pole
Rotation speed: 1000 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B35
Start capacitor and operate capacitor

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Operate capacitor	Start capacitor	Locked rotor torque
	KW	1/ min	A	%	cos Phi	Nm	uF	uF	Mmax/Mn
TSW 63-1-2	0,18	3000	1,31	65,0	0,92	2,50	8	40	1,70
TSW 63-2-2	0,25	3000	1,76	67,0	0,92	2,60	10	50	1,70
TSW 71-1-2	0,37	3000	2,42	70,0	0,95	2,70	12	75	1,70
TSW 71-2-2	0,55	3000	3,45	73,0	0,95	2,80	16	100	1,70
TSW 80-1-2	0,75	3000	4,54	74,0	0,97	2,90	20	100	1,70
TSW 80-2-2	1,1	3000	6,45	76,0	0,97	2,10	25	150	1,70
TSW 90S-2	1,5	3000	8,62	78,0	0,97	2,11	40	150	1,80
TSW 90 L-2	2,2	3000	12,5	79,0	0,97	2,20	50	250	1,80
TSW 63-1-4	0,12	1500	1,04	55,0	0,91	2,50	10	40	1,60
TSW 63-2-4	0,18	1500	1,50	56,0	0,91	2,50	12	40	1,60
TSW 71-1-4	0,25	1500	1,94	61,0	0,92	2,50	14	50	1,60
TSW 71-2-4	0,37	1500	2,80	62,5	0,92	2,50	16	75	1,50
TSW 80-1-4	0,55	1500	3,80	67,0	0,94	2,50	20	100	1,70
TSW 80-2-4	0,75	1500	4,75	73,0	0,94	2,50	25	150	1,70
TSW 90 S-4	1,1	1500	6,76	74,5	0,95	2,20	30	150	1,80
TSW 90 L-4	1,5	1500	9,03	76,0	0,95	2,20	40	220	1,80
TSW 100 L-1-4	2,2	1500	12,6	78,0	0,97	2,20	50	300	1,80

subject to qualifications

Single-phase motors

Single-phase motors 2-pole | 4-pole
Rotation speed: 1000 rpm
ISO-class: F
Motor protection: PTC / PTO
Design: B3 / B5 / B14 / B34 / B3
Operate capacitor

Type	Power	Speed	Rated current	Efficiency	Power factor	Rated rotor torque	Operate capacitor	Locked rotor torque
	KW	1/ min	A	%	cos Phi	Nm	uF	Mmax/Mn
TSW 63-1-2	0,18	3000	1,33	62,0	0,95	0,63	10	1,70
TSW 63-2-2	0,25	3000	1,76	65,0	0,95	0,87	12	1,70
TSW 71-1-2	0,37	3000	2,61	65,0	0,95	1,27	16	1,70
TSW 71-2-2	0,55	3000	3,66	68,0	0,96	1,88	20	1,70
TSW 80-1-2	0,75	3000	4,73	71,0	0,96	2,59	25	1,80
TSW 80-2-2	1,1	3000	6,73	72,5	0,98	3,74	35	1,70
TSW 90S-2	1,5	3000	8,87	75,0	0,98	5,10	45	1,80
TSW 90 L-2	2,2	3000	12,80	76,0	0,98	7,48	60	1,70
TSW 63-1-4	0,12	1500	1,04	55,0	0,92	0,85	10	1,60
TSW 63-2-4	0,18	1500	1,50	57,0	0,92	1,25	12	1,50
TSW 71-1-4	0,25	1500	1,94	60,0	0,92	1,73	16	1,50
TSW 71-2-4	0,37	1500	2,80	60,0	0,92	2,56	20	1,50
TSW 80-1-4	0,55	1500	3,80	63,0	0,91	3,75	20	1,70
TSW 80-2-4	0,75	1500	4,75	67,3	0,95	5,08	30	1,65
TSW 90 S-4	1,1	1500	6,76	68,5	0,92	7,45	40	1,70
TSW 90 L-4	1,5	1500	9,03	72,0	0,94	10,09	45	1,70
TSW 100 L-1-4	2,2	1500	12,6	74,0	0,92	14,69	75	1,80

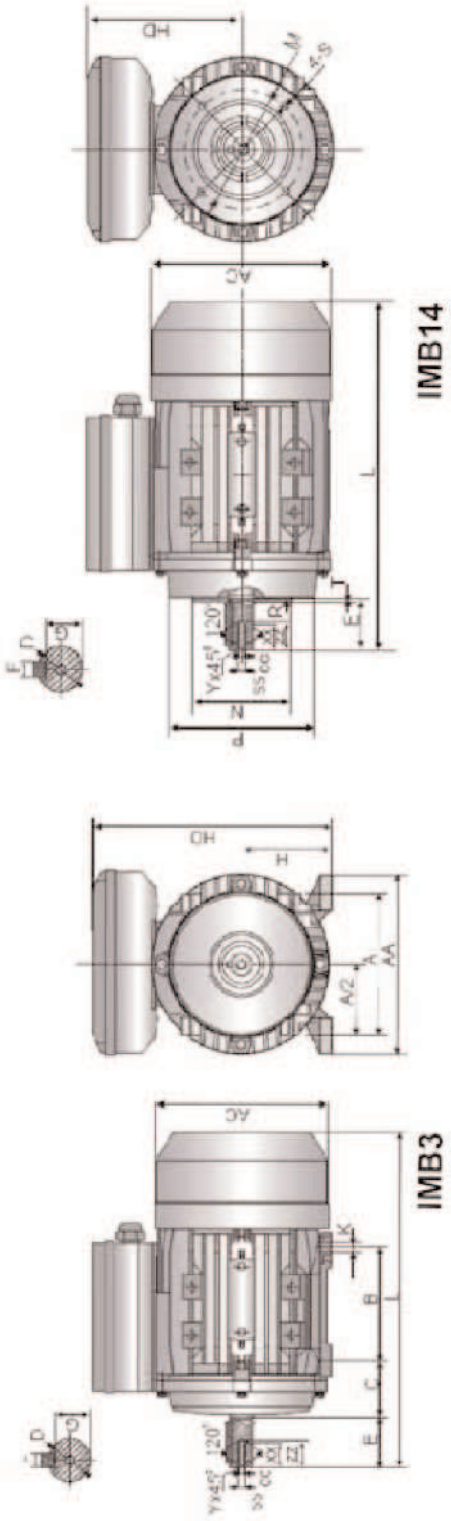
subject to qualifications

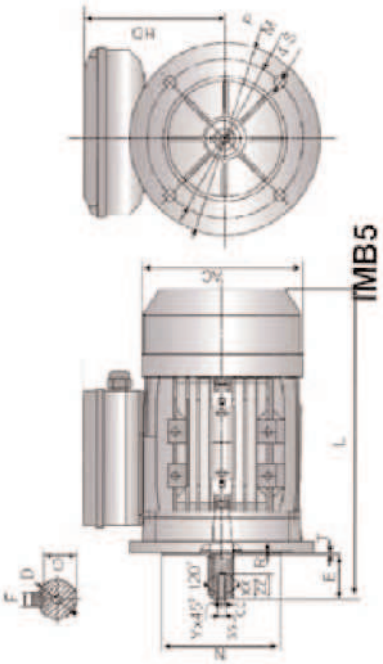
Single-phase motors

Typ: TSW

Baugröße: 56 - 100

Baugröße	A	B	C	D	E	F	G	H	K	B14 M	B14 N	B14 P	B14 R	B14 S	B14 T	B5 M	B5 N	B5 P	B5 R	B5 S	B5 T	AA	AC	AD	HD	L	SS	XX	ZZ	CC	Y
56	90	71	36	9	20	3	7,2	56	5,8x8,8	85	70	80	0	M5	2,5	96	80	120	0	7	3,0	108	115	156	100	182	M3	8	12	2,5	0,5
63	100	80	40	11	23	4	8,5	63	7x10	75	60	90	0	M5	2,5	115	95	140	0	10	3,0	120	130	179	115	212	M4	10	15	3,3	0,8
71	112	90	45	14	30	5	11,0	71	7x10	85	70	105	0	M5	2,5	130	110	160	0	10	3,5	132	145	194	123	254	M5	12	18	4,2	0,8
80	125	100	50	19	40	6	15,5	80	10x13	100	80	120	0	M6	3,0	165	130	200	0	12	3,5	157	165	223	143	280	M6	16	22	5,0	1,0
90S	140	100	56	24	50	8	20,0	90	10x13	115	95	140	0	M8	3,0	165	130	200	0	12	3,5	172	185	240	150	335	M8	20	25	6,8	1,0
90L	140	125	56	24	50	8	20,0	90	10x13	115	95	140	0	M8	3,0	165	130	200	0	12	3,5	172	185	240	150	335	M8	20	25	6,8	1,0
100L	160	140	63	28	60	8	24,0	100	12x15	130	110	130	0	M8	3,5	215	180	250	0	15	4,0	190	205	260	160	370	M10	22	28	8,0	1,5



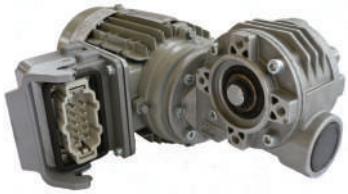


subject to qualifications

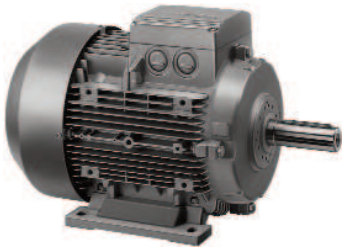
Customized motors

We provide individual geared motors

All standard motors will be suppied assembled to your needs with your required gear box and cord set.



MSF-Vathauer confegueres your required geared motor with motor cable or motor connector from several manufacturer.



We provide standard motors in efficiency class EFF1 and EFF2 in frames from 50-132. Suitable to your needs with standard shaft or special shaft in high-strength steel.

IEC-Standard-Motors with mounted motor starter or frequency converter will be special customised to your needs.

IEC - standard gearboxes

MSF-Vathauer supply different slip on gears for several applications.
For roller-conveyor, belt-conveyor, chain-conveyor, hopper and for the food and beverage industries.

Worm gearboxes

Worm gear boxes with hollow input shaft as well as hollow output shaft for flexible operation in sizes 030 to 110.

Applications: Belt-conveyor, chain-conveyor, roller-conveyor and screw conveyor.

Worm gearboxes

Quadratic worm gear boxes with hollow input shaft and hollow output shaft for flexbile operation in sizes 025 to 110.

Applications: Sea water application, chemicals industry, food- and beverages industry and winches.

Pre-stage worm gearboxes

Worm gear boxes with primary reduction with hollow input shaft and hollow output shaft.

Torque: 50Nm to 730Nm

Axial gearboxes

Axial gear box with one, two- or three stages.
Torque 70Nm to 460Nm.

Application: Timber- and paper industry as well as veneer squeezing machine.

One stage gear box

Torgue 30Nm to 118Nm. Various designs available.

Application: Pumps, Mixer, screw conveyor.

Allgemeine Informationen & technische Daten

General information & technical Data

„Hygienics“ ALUMINIUM - 3-Phasen Motor

„Hygienics“ aluminum - 3-Phase motor

ALUMINIUM - Schneckengetriebe

Aluminum - Worm gearboxes

ALUMINIUM - Stirnradstufe

Aluminum - ratio multiplier

„Hygienics“ EDELSTAHL - 3-Phasen Motor

„Hygienics“ stainless steel - 3-Phase motor

EDELSTAHL - Stirnkegelrad

Stainless steel - helical bevel gearbox

EDELSTAHL - Stirnkegelrad harsh environment

Stainless steel - shielded helical bevel gearbox

EDELSTAHL - Schneckengetriebe

Stainless steel - Worm gearbox

EDELSTAHL - Stirnradstufe

Stainless steel - shielded ratio multiplier

EDELSTAHL - Koaxialgetriebe

Stainless steel - shielded coaxial gearbox

EDELSTAHL - Geber / Encoder

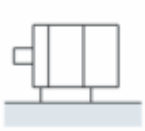
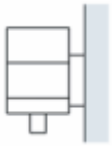
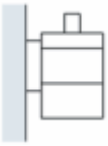
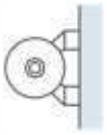
Stainless steel - encoder

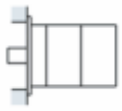
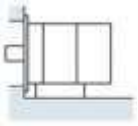
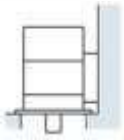
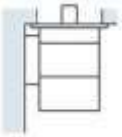
Sonderlösungen I Motore I Frequenzumrichter I Gehäuse

Special solutions I Motors I Frequency Inverter I Casing

Konstruktionen und Montageanordnungen

Types of constructions and mounting arrangements

Type of Construction	*Mounting A rrangements*					
						
Code I	IM B3	IM V5	IM V6	IM B6	IM B7	IM B8
Code II	IM 1001	IM 1011	IM 1031	IM 1051	IM 1061	IM 1071
H 56..160	●	●	●	●	●	●
H 180..225	●	-	-	-	-	-
H 250..315	●	-	-	-	-	-

Type of Construction	*Mounting A rrangements*					
						
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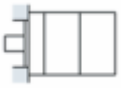
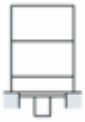
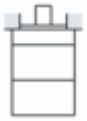
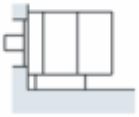
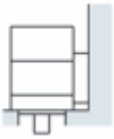
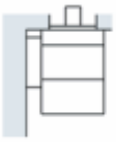
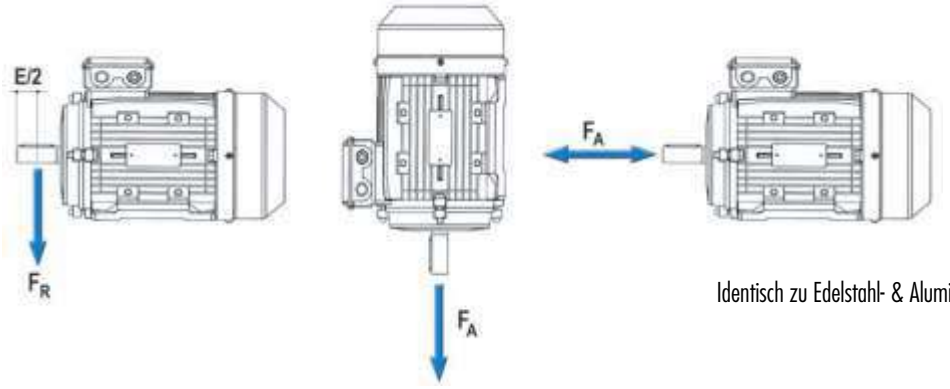
Code II	IM 3001	IM 3011	IM 3031	IM 2001	IM 2011	IM 2031
H 56..160	●	●	●	●	●	●
H 180..225	●	●	-	●	-	-
H 250 315	-	●	-	●	-	-

Typ e of Construction	*Mounting A rrangements*					
						
Code I	IM B14	IM V18	IM V19	IM B34	IM V15	IM V36
Code II	IM 3601	IM 3611	IM 3631	IM 2101	IM 2111	IM 2131
H 56..160	●	●	●	●	●	●
H 180..225	-	-	-	-	-	-
H 250..315	-	-	-	-	-	-

Technische Daten - Motore

Technical Data - motors

Size	Bearings		F_R max [Nm] - 50Hz, F_R/F_A < 0,2			F_A max [Nm] - 50Hz, F_R=0					
			2P	4P	6P	2P		4P		6P	
	DE	NDE				B5	V1	B5	V1	B5	V1
63	6202 2RZ	6202 2RZ	410	520	600	410	330	540	440	640	560
71	6202 2RZ	6202 2RZ	410	520	600	410	330	540	440	640	560
80	6205 2RZ	6203 2RZ	720	900	1050	490	550	610	730	720	880
90S/L	6205 2RZ	6203 2RZ	720	900	1050	490	550	610	730	720	880



Identisch zu Edelstahl- & Aluminiumglattmotore

Symbolbedeutung / Agenda

Meaning of the symbols

P_N [kW]	=	Nennleistung / rated power
n_N [min^{-1}]	=	Nenndrehzahl / rated speed
M_N [Nm]	=	Nenndrehmoment / rated torque
I_N [A]	=	Bemessungsstrom / rated current
cosφ	=	Nennleistungsfaktor / rated power factor
η% 100% 75% 50%	=	Wirkungsgrad bei 100%, 75%, 50% der Nennlast / efficiency at 100%, 75%, 50% of the rated load
M_S/M_N	=	Verhältnis zwischen Anlaufmoment und Nennmoment / ratio between starting torque and rated torque
M_{MAX}/M_N	=	rVerhältnis zwischen maximalem Drehmoment und Nenndrehmoment / ratio between maximum torque and rated torque
I_S/I_N	=	Verhältnis zwischen Anlaufstrom und Nennstrom / ratio between starting current and rated current
J_0 [kgm2]	=	Tägheitsmoment / moment of inertia
W [kg]	=	Motorgewicht / motor weight
M*f* [Nm]	=	Bremsmoment / braking moment

IP-Schutzarten

IP Degree of protection

IP	ERSTE ZIFFER / FIRST DIGIT
0	nicht geschützt non-protected
1	Schutz gegen solide Objekte größer als 50mm. (z.B. versehentlicher Kontakt mit der Hand) Protection against solid objects larger than 50mm. (e.g. accidental contact with hand)
2	Schutz gegen solide Objekte größer als 12mm. (z.B. versehentlicher Kontakt mit den Fingern) Protection against solid objects larger than 12mm. (e.g. accidental contact with fingers)
3	Schutz gegen solide Objekte größer als 1mm. (z.B. Werkzeuge, Drähte) Protection against solid objects larger than 1mm. (e.g. tools, wires)
4	Schutz gegen feste Gegenstände, die größer als 1 mm sind. Protection against solid objects larger than 1mm.
5	Staubschutz (keine schädlichen Ablagerungen) Protection against dust (no harmful deposits)
6	komplett staubgeschützt completely protection against dust

IP	ZWEITE ZIFFER / SECOND DIGITSE
0	nicht geschützt non-protected
1	Schutz gegen senkrecht fallende Wassertropfen Protection against vertical falling waterdrops
2	Schutz gegen fallende Wassertropfen bis zu 15° von der Vertikalen Protection against falling waterdrops at up to 15° from the vertical
3	Schutz gegen Spritzwasser bis zu 60° von der Vertikalen (Regen) Protection against spraying water at up to 60° from the vertical (rain)
4	Schutz gegen Spritzwasser aus allen Richtungen Protection against splashing water from all directions
5	Schutz gegen Wasserstrahlen aus allen Richtungen Protection against jets of water from all directions
6	Schutz vor Wasser, ähnlich wie bei schwerer See Protection against jets of water similar to heavy seas
7	Schutz gegen die Auswirkungen des Eintauchens (<1 m) Protection against the effects of immersion (<1m)
8	Schutz gegen die Auswirkungen des Untertauchens Protection against the effects of submersion

Gemäß der Norm IEC60034-5 ist die Schutzart IP gefolgt von zwei Ziffern mit Eigenschaften (erste Ziffer = Berührungsschutz und Eindringen von Festkörpern, zweite Ziffer = Schutz gegen das Eindringen von Flüssigkeiten). Motoren der Serien „Hygienics“ Aliminium und „Hygienics“ Edelstahl haben standardmäßig die Schutzart IP69K.

According to the standard IEC60034-5, the degree of protection is labeled IP followed by two digits characteristics (first digit = protection against contact and ingress of solid, second digit = protection against the ingress of liquids). Motors of the series „Hygienics“ aluminum and „Hygienics“ stainless steel have as standard degree of protection IP69K.

Was bedeutet IP69K?

What does IP69K mean?

Die Schutzart IP69K eignet sich für Anwendungen, bei denen Hochdruck- und Hochtemperatur-Waschvorgänge verwendet werden und oder Geräte desinfiziert werden müssen. Die IP69K-Testspezifikation wurde ursprünglich speziell für Straßenfahrzeuge entwickelt, die regelmäßig einer intensiven Reinigung bedürfen (Kipper, Betonmischer, etc.). Jedoch werden die Produkte mit dieser Schutzart weithin in der Lebensmittel- und Getränkeindustrie für Produkte und in Maschinenanlagen eingesetzt, die einer hygienischen Abwaschung standhalten müssen.
Im IEC 60529-Bewertungssystem bezieht sich IP6 auf die Fähigkeit des Produkts, dem Eindringen von Staub zu widerstehen. 69K bezeichnet die Fähigkeit des Produkts, dem Eindringen von Wasser mit hoher Temperatur (Dampf) und hohem Druck Stand zu halten. Die Produkte mit Schutzart IP69K sind hochdruck- und dampfbeständig in ihrer Reinigung. Der Test spezifiziert das Produkt mittels einer Testsprühdüse, die mit 80 °C warmem Wasser bei 80-100 bar (1160-1450) gespeist wird und einer Affow-Rate von 14-16 l / min. Die Düse wird an das getestete Gerät in einem Abstand von 10-15cm und einem Winkeln von 0 °, 30 °, 60 °und 90 ° für jeweils 30 Sekunden gehalten.

The IP69K rating is for applications where high pressure and high temperature washdown is used to sanitize equipment. The IP69K test speci?cation was initially developed for road vehicles, especially those that need regular intensive cleaning (dump truck, cement mixers, …) but has been widely adopted in the Food & Beverage industrie as a test of products to withstand sanitary washdown. In the IEC 60529 rating system, IP6 refers to product's ability to resist ingress of dust. The 69K refers toproduct's ability to resist ingress of high temperature (steam) / high pressure water. Products rated to IP69K are certified to be able to withstand high-pressure and steam cleaning. The test specifies a spray nozzle that is fed with 80°C water at 80-100 bar (1160-1450) and affow rate of 14-16 L/min. The nozzle is held 10-15cm. From the tested device at angles of 0°, 30°, 60° and 90° for 30 seconds each.

„Hygienics“ Aluminiummotor mit «Hi-Cleaning», NTT®-Beschichtung, IP69K für Lebensmittelverarbeitung, Pharmazie und andere Anwendungen, die extreme Sauberkeit erfordern und für häufiges Abwaschen

„Hygienics“ aluminum motor with «Hi-Cleaning», NTT® coating, IP69K for food processing, pharmaceutical and other applications requiring extreme cleanliness and frequent washdowns

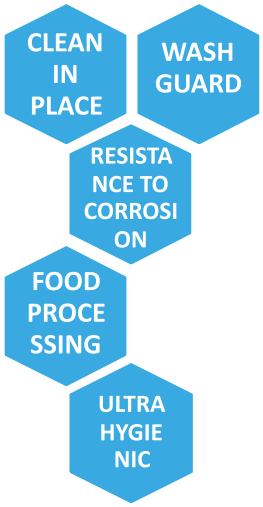
Die Aluminiummotoren werden als Alternative zu dem vorgeschlagen „Twin“ der Edelstahl-Baureihe gesehen, bei der keine extremen Bedingungen erforderlich sind. Diese benötigen ausschließlich eine Edelstahllösung. Sie werden in Branchen von Lebensmitteln, Getränken oder pharmazeutischen Produktionsanlagen eingesetzt, in denen die Motore zusammen mit anderen Teilen verbaut sind, welche oft Hochdruckwasserstrahlen ausgesetzt sind (manchmal bei hohen Temperaturen) oder noch aggressiveren Reinigungsmitteln. Dies kann bei anderen Motoren zu Beschädigung oder sogar zu Schäden führen und das Endprodukt verunreinigen. Das Aluminium-Sortiment hat keine Kühlrippen und ist mit einer innovativen „Hi-Cleaning“ - Beschichtung ausgestattet. Dies macht die Oberfläche sehr pflegeleicht und widerstandsfähig gegen z.B. aggressive Reinigungsmittel, welche bei der Desinfektion eingesetzt werden.

The aluminum motors are proposed as an alternative to the “twin” stainless steel series, where there are no extreme conditions require solely a stainless steel solution. They are used in food, beverage or pharmaceutical production plants where the motors - along with other parts - are often subjected to high pressure water jets (sometimes at high temperatures) or even more aggressive cleaning agents, that on the contrary can cause damage to other kind of motor, or even contaminate the end product. The aluminum range has no cooling fins and it is painted with an innovative “Hi-Cleaning” coating, which makes the surface very easy to clean and resistant to major aggressive used in sanitizing.

Dank der Schutzart IP69K ist die Aluminiummotorenreihe ein bewährtes Design für Washdown-Situationen. Alle externen Komponenten sind aus Aluminium gefertigt, die Motorwelle aus 420 Edelstahl mit magnetischen Eigenschaften, alle Schrauben aus 316L Edelstahl. Die Motore sind lackiert mit einer innovativen „Hy-Cleaning“-Beschichtung mit Nanopartikeln. Die Oberfläche ist völlig glatt. Somit ergibt sich eine ausgezeichnete Korrosionsbeständigkeit, die eine zuverlässige und dauerhafte Lösung darstellt, bei der eine leichte Reinigung möglich ist, wo Hygiene unerlässlich ist. Aluminiummotoren sind vollständig geschlossen, nicht belüftet (IC410) und erfüllen die höchsten Anforderungen auf ultra-hygienischer Linie. Die Oberflächentemperatur ist dank genauer Elektromagnete begrenzt. Die Motore der Klasse F sind für Dauerbetrieb S1 und Überhitzung in der Klasse B / F ausgelegt. Die Effizienzklasse (0,75 kW IEC / EN60034-30) IE4: Motore sind für den Umrichterbetrieb geeignet, d.h. ein großer Bereich bei konstantem Drehmoment.

Thanks to the IP69K degree of protection, the aluminum motor range is a proven design for washdown situations. All external components are manufactured in aluminum, motor shaft is in 420 stainless steel with magnetic properties , all screws in 316L stainless steel. Motors are painted with an innovative “Hy-Cleaning” coating with nano-particles. The surfaces are completely smooth. This gives excellent resistance to corrosion and represents a reliable and durable solution where an easy clea nability and sanitation are essential.

Aluminum motors are totally enclosed non ventilated (IC410), able to satisfy the highest needs on ultra-hygienic clean lines. The surface temperature is limited thanks to an accurate electromagne tic design and the additional internal active material.
The motors are class F designed for continuous duty S1 and overheating in class B/F, the energy efficiency class (0,75kW IEC / EN60034-30) is IE4. Motors are suitable for inverter operation with large range at constant torque.



Anschlussspannung	230 V 400 V
Netzfrequenz	50 Hz
ISO-Klasse	F
Schutzart	IP69K nach IC410
Betriebsart	S1
Bauform	B14 B5
Baugröße	63 - 90
Leistung	0,12 - 1,5 kW
Drehzahl	1500 oder 3000
Energieeffizienzklasse	IE4 nach IEC60034-30, IEC60034-2-1
Material	Aluminium

Anwendungsbereiche / Application fields

- Bäckerei / Bakery
- Abfüllung / Bottling
- Getränke / Beverage
- Tabak / Tobacco

2 *poles*
3000min-1

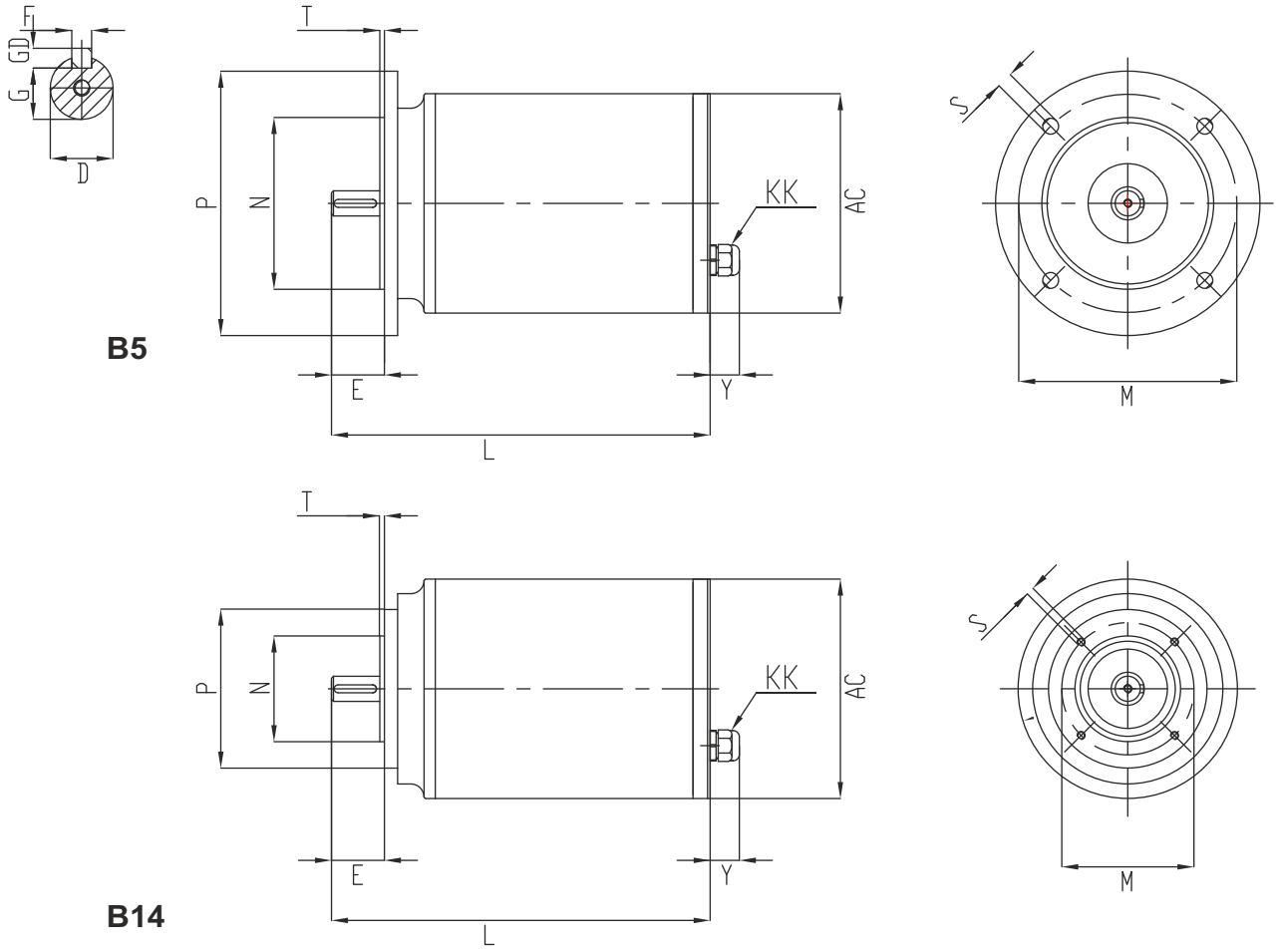
IE4

P_N [kW]				n_N [min^{-1}]	M_N [Nm]	I_N [A]	cos φ		η 100 %	η 75 %	η 50 %	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W B14 [kg]
0,18	HC W	63 A	2	2840	0,61	0,42	0,81	-	77,0	-	-	3,5	3,9	6,5	0,000 8	6,3
0,25	HC W	63 B	2	2840	0,84	0,56	0,83	-	77,6	-	-	3,5	3,9	6,7	0,001 1	7,5
0,37	HC W	71 A	2	2840	1,24	0,8	0,83	-	80,0	-	-	4,4	4,6	8,2	0,001 4	8,9
0,55	HC W	71 B	2	2840	1,85	1,2	0,85	-	81,5	-	-	4,5	4,7	8,7	0,001 7	10,6
0,75	HC W	80 A	2	2920	2,45	1,6	0,82	*IE4*	87,0	87,6	85,8	4,1	4,6	11,0	0,003 1	14,6
1,1	HC W	80 B	2	2920	3,60	2,3	0,84	*IE4*	87,5	88,0	86,2	4,2	5,0	11,5	0,004 0	18,1

4 poli / *poles*
1500min-1

IE4

P_N [kW]	Motor			n_N [min^{-1}]	M_N [Nm]	I_N [A]	cos φ		η 100 %	η 75 %	η 50 %	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W B14 [kg]
0,12	HC W	63 A	4	1440	0,80	0,32	0,69	-	77,0	-	-	2,4	3,1	5,6	0,001 1	6,3
0,18	HC W	63 B	4	1440	1,2	0,47	0,71	-	77,5	-	-	2,4	3,1	5,8	0,001 5	7,5
0,25	HC W	71 A	4	1440	1,7	0,6	0,74	-	79,0	-	-	2,7	3,0	6,1	0,001 8	8,9
0,37	HC W	71 B	4	1440	2,5	0,9	0,76	-	81,1	-	-	3,2	3,4	6,9	0,002 3	10,6
0,55	HC W	80 A	4	1460	3,6	1,3	0,72	-	83,9	-	-	3,7	4,8	9,1	0,004 1	14,6
0,75	HC W	80 B	4	1460	4,9	1,7	0,73	*IE4*	87,0	86,5	83,8	4,2	5,0	10,0	0,005 3	18,1
1,1	HC W	90 S	4	1460	7,2	2,4	0,77	*IE4*	87,2	87,3	85,4	4,0	4,7	10,1	0,007 5	22,1
1,5	HC W	90 L	4	1460	9,8	3,2	0,77	*IE4*	88,2	88,1	86,4	4,5	5,1	10,8	0,01 0	27,9



Size	Bearings		CableGlands	IM B5 (*)						IM B14					
	D	NDE	KK	M	N	P	R	n x S	T	M	N	P	R	n x S	T
63	6202 2RZ	6202 2RZ	M16X1.5	115	95 j6	140	0	4x10	3	75	60 j6	90	0	4xM5	2,5
7	6202 2RZ	6202 2RZ	M20X1.5	130	110 j6	160	0	4x10	3,5	85	70 j6	105	0	4xM6	2,5
80	6205 2RZ	6203 2RZ	M20X1.5	165	130 j6	200	0	4x12	3,5	100	80 j6	120	0	4xM6	3
90S/L	6205 2RZ	6203 2RZ	M25X1.5	165	130 j6	200	0	4x12	3,5	115	95 j6	140	0	4xM8	3

Size	Shaft					General		
	D	E	F	G	GD	AC	Y	L
63A	11 j6 M4	23	4	8,5	4 E	131	22	228
63B								243
71A	14 j6 M5	30	5	11	5	131	25	265
71B								285
80A	19 i6 M6	40	6	15,5	6	166	25	268
80B								288
90S	24 j6 M8 0	5	8	20	7	166	30	333
90L								373

(*) *only HYW series*

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

This range is ip69K ATEX (on request) CE NTT NANOTECHNOLOGY TREATMENT nsF component certified

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*
Z30	21 Nm	30 mm	0.06 ÷ 0.18 kW	ø14 mm
Z45	41 Nm	45 mm	0.09 ÷ 0.37 kW	ø18 mm
Z50	72 Nm	50 mm	0.12 ÷ 0.75 kW	ø25 mm
Z63	147 Nm	63 mm	0.37 ÷ 1.8 kW	ø25 mm
Z85	347 Nm	85 mm	0.55 ÷ 4.0 kW	ø35 mm

This product is:

ip69K

ATEX (on request)

CE

NTT NANOTECHNOLOGY TREATMENT

nsF component

Twin viton seals with stainless steel 316L shield.

NTT™ stands for a special surface treatment which results in modified external properties of the complete unit in order to get a smooth surface and an higher corrosion resistance.

Output shaft and hollow shaft in AISI 316L.

All stainless steel 316L hardware.

CuSn12Ni (C91700) Nickel bronze worm gears are centrifugally cast onto an iron hub for maximum strength and superior life. removable hollow shaft with key for safe torque transmissions.

Housing with special smooth surfaces.

Z30

21 nm

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	ratio code
							-	-	-O	-p			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	56	63	rd	[mm]	
280	**5**	0.18	5	3.3	**0.60**	**17**			c		82	1.26	09
200	**7**	0.18	7	2.4	**0.44**	**17**			c		80	1.44	01
140	**10**	0.18	10	1.8	**0.32**	**17**			c		78	1.44	02
93	**15**	0.18	13	1.4	**0.25**	**19**			c		73	1.44	03
70	**20**	0.18	17	1.1	**0.20**	**19**			c		70	1.09	04
47	**30**	0.12	15	1.4	**0.17**	**21**			c		62	1.44	05
35	**40**	0.12	19	1.1	**0.13**	**20**			c		57	1.09	06
23	**61**	0.09	19	1.1	**0.10**	**20**			c		50	0.72	07
17.5	**80**	0.06	16	1.0	**0.06**	**16**			c		48	0.56	08
14	**100**	0.06*	16	0.5	**0.03**	**8**			c		40	0.45	10

*** Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2r}**
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available *Flange motore disponibili*
B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*
B) **Available on request without reduction bushing** *Disponibile a richiesta senza bussola di riduzione*
C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

ø

unit Z30 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo Z30 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.025Lt. *Quantità olio per tutte le posizioni: 0.025Lt.*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

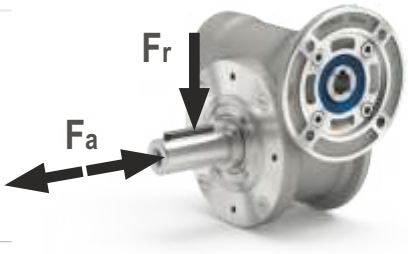
radial and axial loads

Carichi radiali e assiali ø

Output shaft

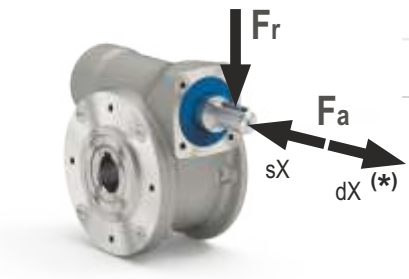
Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
200	120	600
150	140	700
100	160	800
75	180	900
50	200	1000
25	250	1250
15	280	1400



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [n]	F_R [n]
1400	20	100

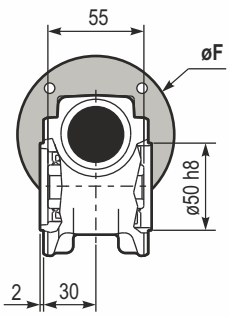
*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

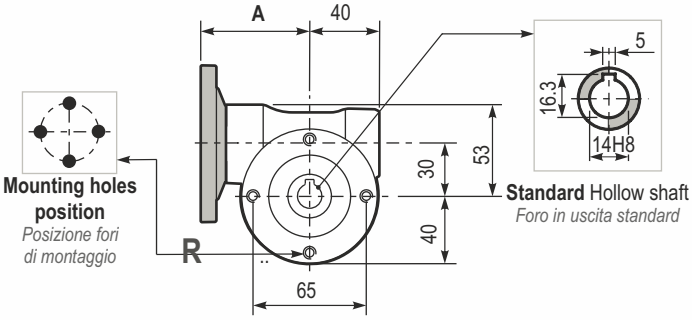
Tab. 2

PZ30**UN**.. **Basic gearbox** *base*
Riduttore

Gearbox weight 1.25 kg
Peso riduttore

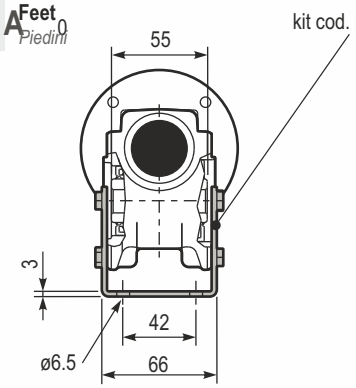
M. flanges	Kit code	øF	A
56B14	KZ304046	80	62
63B14	KZ304045	90	63

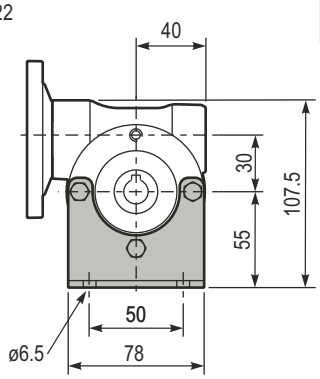




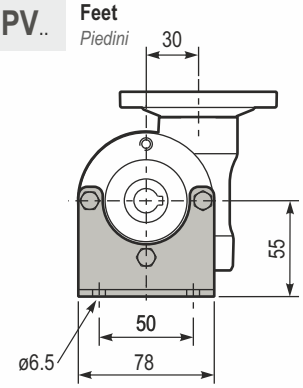
PZ30**P** .. **A**0 **Feet**
Piedini

kit cod. KIZ309022

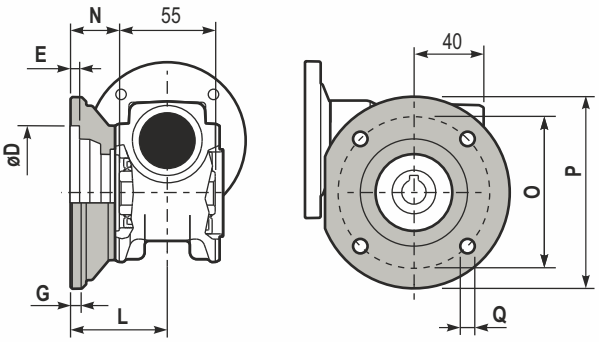




PZ3 **PV**.. **Feet**
Piedini



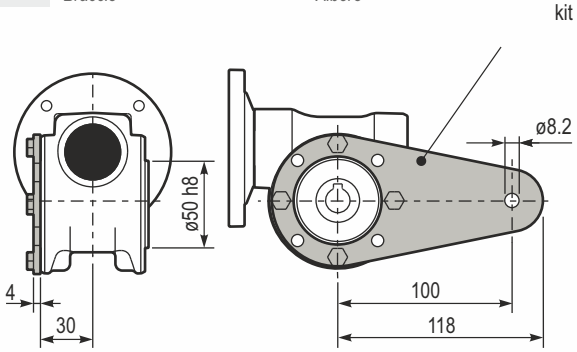
FC.. **Output flange** *uscita* cod. KIZ459027
Flangia



Type	øD	E	G	L	N	O	P	Q	Kit code
FC	50 +0.15 +0.05	6	6	50.5	23	68	80	7 0	KZ309010
FL	60 +0.15 +0.05	6	6	55.5	28	87	110	8.5	KZ459010

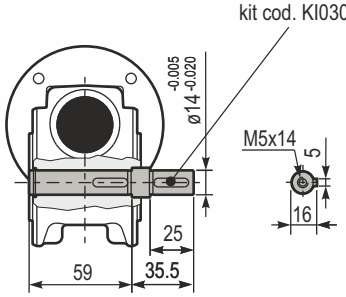
PZ3 **BR**.. **Reaction arm** *di reazione* **shaft** *in entrata*
Braccio *Albero*

kit



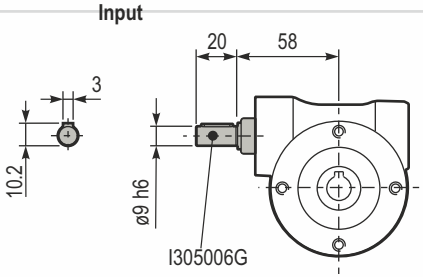
S.. **Single output shaft** *semplice in uscita* Z30..
Albero

kit cod. KI0305028



Z30UN

Input



Z45

41 nm

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Dynamic efficiency	Tooth module	ratio code
							-	-	-O	-p	-Q			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	56	63	71	rd	[mm]	
200	**7**	0.37	14	2.2	0.80	30			c	c		80	2.2	01
140	**10**	0.37	20	1.5	0.57	30			c	c		79	2.2	02
100	**14**	0.37	27	1.1	0.41	30			c	c		77	2.4	03
67	**21**	0.37	36	1.2	0.43	41			c	c		67	1.6	04
50	**28**	0.25	31	1.3	0.33	41			c	c		65	2.5	05
38	**37**	0.25	40	1.0	0.26	41			c	c		63	1.8	06
30	**46**	0.25	46	0.9	0.22	41			c	c		59	1.5	07
23	**60**	0.18	41	1.0	0.18	41			c	c		56	1.2	08
20	**70**	0.12	31	1.0	0.12	30			c	c		54	1.0	09
13.7	**102**	0.09	31	1.0	0.09	29			c	c		49	0.72	10

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con bussola di riduzione

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication

Lubrificazione

unit Z45 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo Z45 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.08Lt. *Quantità olio per tutte le posizioni: 0.08Lt.*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

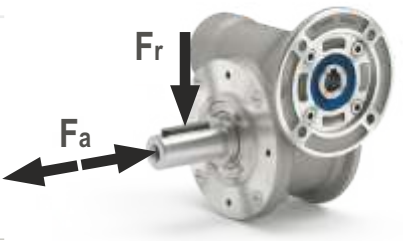
radial and axial loads

Carichi radiali e assiali

Output shaft

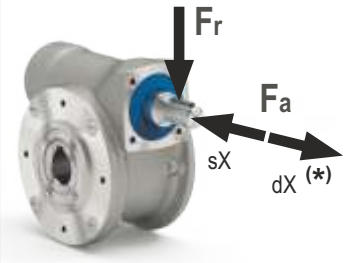
Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
200	180	900
150	200	1000
100	220	1100
75	240	1200
50	260	1400
25	300	1800
15	400	2000



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [n]	F_R [n]
1400	42	210

*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

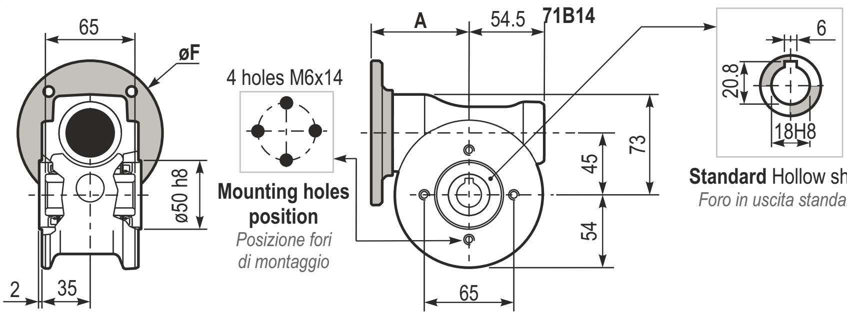
Tab. 2

Aluminium

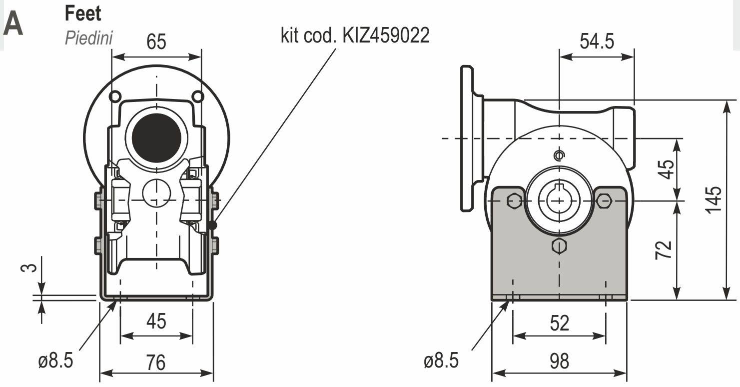
PZ45UN.. Basic gearbox *Riduttore base*

Gearbox weight *Peso riduttore* 2.50 kg

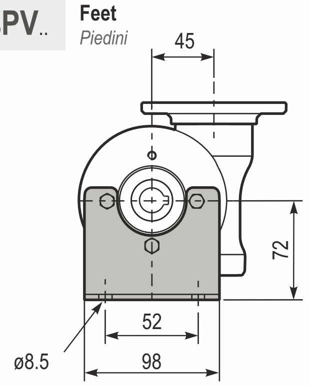
M. flanges	Kit code	øF	A
56B14	KZ454049	80	71.5
63B14	KZ454047	90	74
	KZ454045	105	71.5



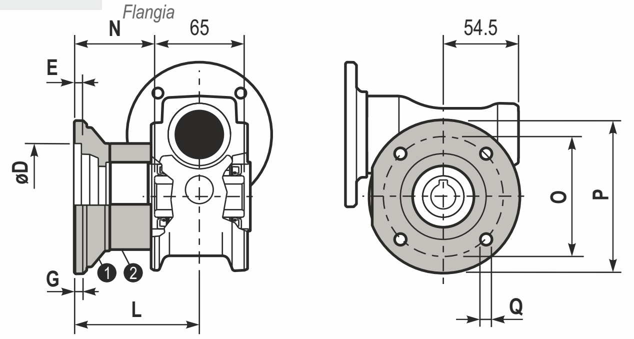
PZ45P..A Feet *Piedini*



PZ45PV.. Feet *Piedini*



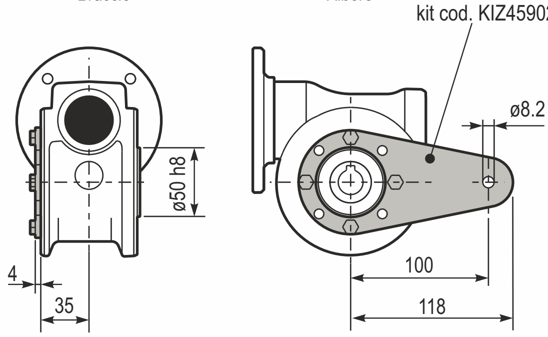
PZ45FC.. Output flange *Flangia uscita*



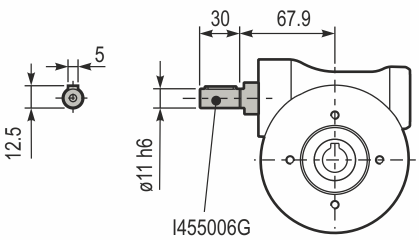
Type	øD		EG	L	N	O	P	Q	Kit code
FC	60 $^{+0.15}_{+0.05}$	9	9	60.5	28	87	110	8.5	❶ KZ459010 ❷ -
FL	60 $^{+0.15}_{+0.05}$	9	9	90.5	58	87	110	8.5	❶ KZ459010 ❷ KZ450200

BR.. Reaction arm *Braccio di reazione*

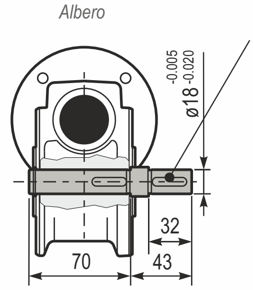
PZ45 P output shaft *Albero semplice in uscita* Z45..

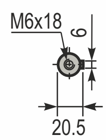


Z45UN



S..R Input shaft / Single shaft *Albero in entrata*





Z50

72 nm

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges			B14 motor flanges				Dynamic efficiency	Tooth module	ratio code
							-	-	-	-O	-p	-Q	-r			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	-	56	63	71	80	rd	[mm]	
200	**7**	0.75	29	1.9	1.5	57					c			82	2.5	01
140	**10**	0.75	41	1.5	1.1	62					c			80	2.4	02
100	**14**	0.75	57	1.2	0.90	68					c			79	2.6	03
78	**18**	0.55	51	1.2	0.67	62					c			75	2.0	04
54	**26**	0.55	67	1.0	0.54	66					c			69	2.7	05
47	**30**	0.55	79	0.9	0.50	72					c			70	2.5	12
39	**36**	0.37	63	1.2	0.43	72				c	c			69	2.1	06
33	**43**	0.37	72	1.0	0.35	68				c	c			66	1.8	07
28	**50**	0.25	53	1.2	0.31	66				c	c			62	1.5	13
23	**60**	0.25	59	1.0	0.26	62				c	c			58	1.3	08
21	**68**	0.25	66	0.9	0.22	58				c	c			57	1.2	09
17.5	**80**	0.18	53	1.1	0.19	57				c	c			54	1.0	10
14	**100**	0.12	41	1.3	0.15	51				c	c			50	0.8	11

Motor flanges available *Flange motore disponibili*

B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*

B) Available on request without reduction bushing *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

unit Z50 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo Z50 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

all positions: 0.12Lt. *Quantità olio per tutte le posizioni: 0.12Lt.*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

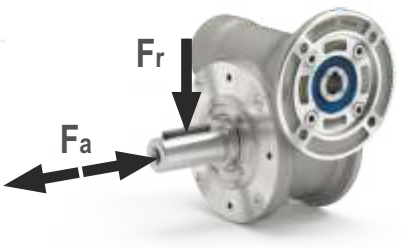
radial and axial loads

Carichi radiali e assiali

Output shaft

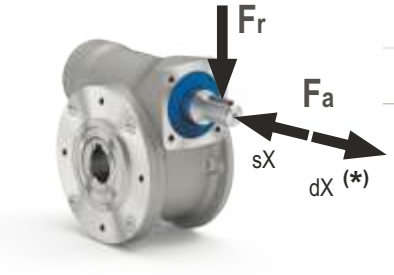
Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
200	240	1200
150	280	1400
100	300	1500
75	340	1700
50	380	1900
25	480	2500
15	560	2800



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [n]	F_R [n]
1400	76	380

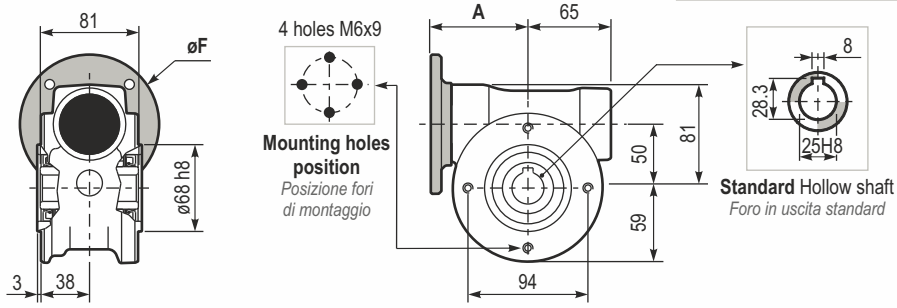
*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

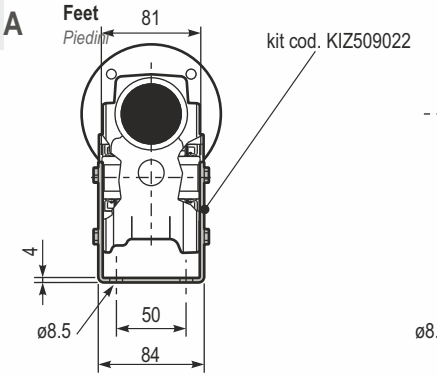
PZ50UN.. Basic gearbox *base*
Riduttore

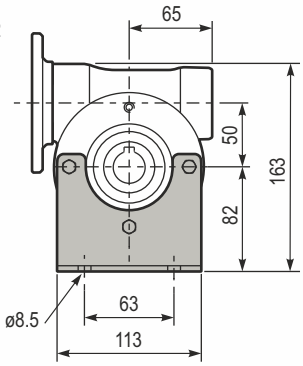
Gearbox weight *Peso riduttore* **3.70 kg**

M. flanges	Kit code 56B14	øF	A
	KZ504049	80	76
63B14	KZ504047	90	78.5
71B14	KZ504045	105	76
80B14	KZ504046	120	76.5

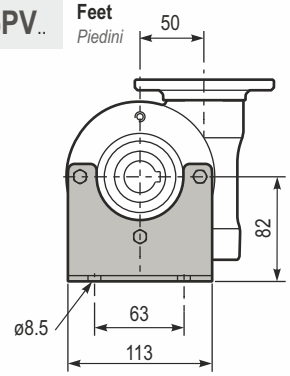


PZ50P .. A Feet *Piedini*

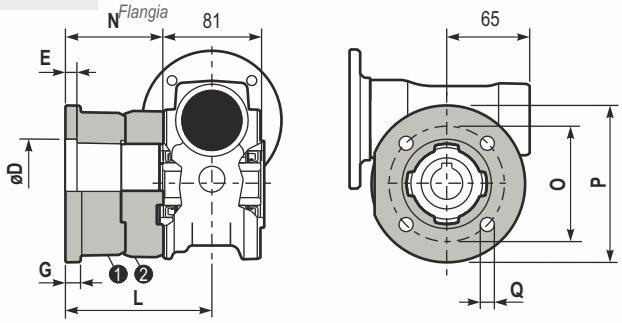




PZ50PV.. Feet *Piedini*

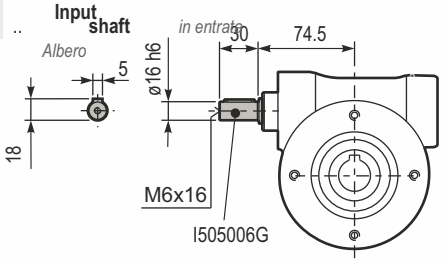


FC.. FL.. Output flange *uscita*
Flangia

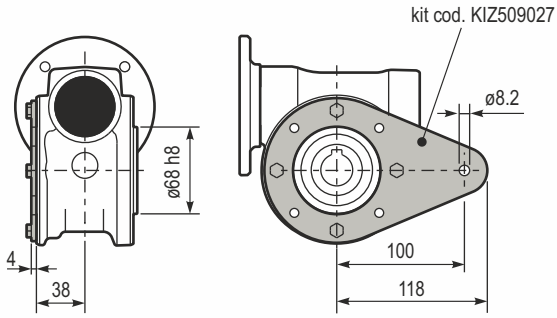


Type	øD	E	G	L	N	O	P	Q	Kit code
FC	70 +0.20 +0.15	9	12	85	44.5	90	123	10.5	❶ KZ509010 ❷ -
FL	70 +0.20 +0.15	9	12	114.5	74	90	123	10.5	❶ KZ509010 ❷ KZ500200

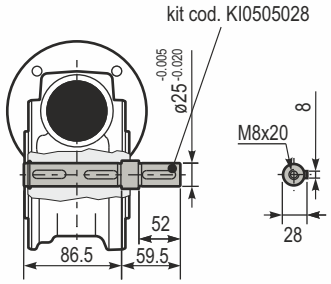
S..R .. Input shaft *Albero* *in entrata*



BR.. Reaction arm *Braccio* P.. output shaft *Albero* *semplice in uscita* Z50..



Single



Z63

147 nm

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges				B14 motor flanges			Dynamic efficiency	Tooth module	ratio code
							-	-	-	-	-Q	-r	-T			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	-	-	71	80	90	rd	[mm]	
200	**7**	1.8	71	1.8	3.2	125					c	c		83	3.1	01
140	**10**	1.8	99	1.4	2.4	134					c	c		81	3.1	02
93	**15**	1.5	121	1.1	1.7	138					c	c		79	3.1	03
74	**19**	1.1	111	1.2	1.4	138					c	c		78	2.6	04
58	**24**	1.1	135	1.0	1.2	142					c	c		75	2.0	05
47	**30**	1.1	167	0.9	0.96	146					c	c		74	3.2	06
39	**36**	0.75	125	1.2	0.88	147					c	c		68	2.7	07
35	**40**	0.75	135	1.0	0.78	140					c	c		66	2.5	13
31	**45**	0.55	111	1.2	0.67	135					c	c		66	2.1	08
23	**60**	0.55	140	0.9	0.51	130					c	c		62	1.6	12
21	**67**	0.55	151	0.8	0.45	124					c	c		60	1.5	09
17.5	**80**	0.37	115	1.0	0.38	119					c	c		57	1.3	10
14.9	**94**	0.37	123	1.0	0.36	119					c	c		52	1.1	11

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con bussola di riduzione

B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication

Lubrificazione

unit Z63 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo Z63 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

all positions: 0.30Lt. *Quantità olio per tutte le posizioni: 0.30Lt.*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

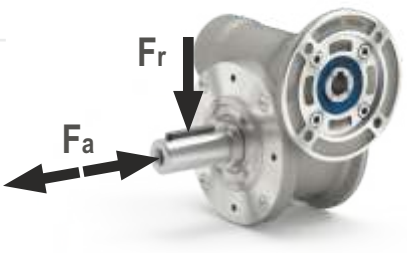
radial and axial loads

Carichi radiali e assiali

Output shaft

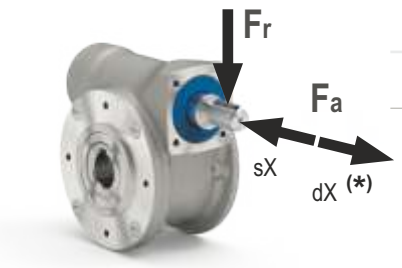
Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
200	360	1800
150	400	2000
100	460	2300
75	500	2500
50	600	3000
25	700	3800
15	800	4000



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [n]	F_R [n]
1400	90	450

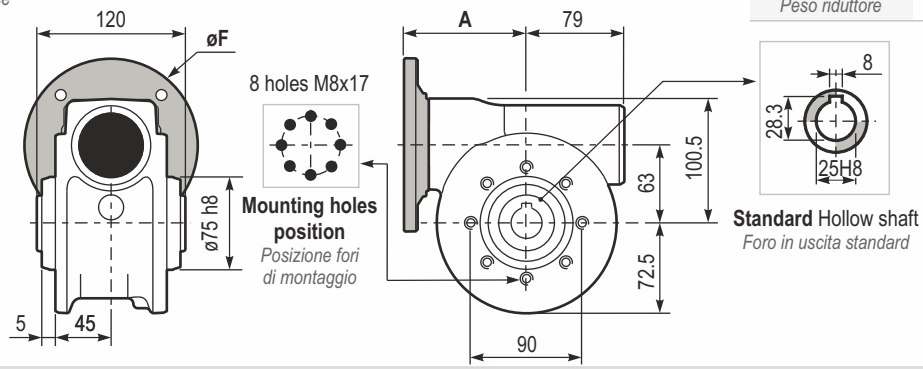
*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

PZ63UN.. Basic gearbox
Riduttore

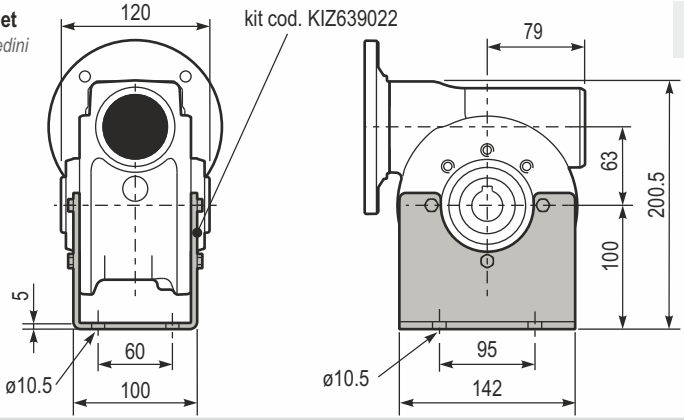
M. flanges	Kit code	øF	A
71B14	KZ634047	105	97.5
80B14	KZ634046	120	99.5
90B14	KZ634041	140	99.5

base

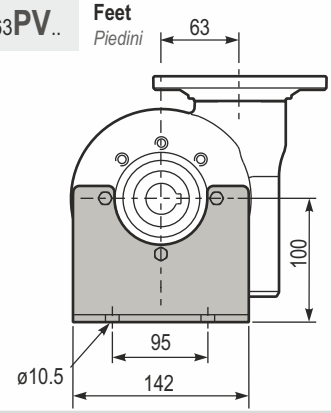


Gearbox weight *Peso riduttore* **6.70 kg**

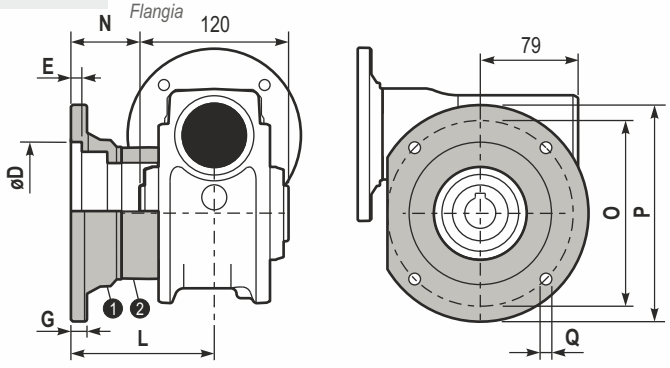
PZ63P .. A Feet
Piedini



PZ63PV.. Feet
Piedini



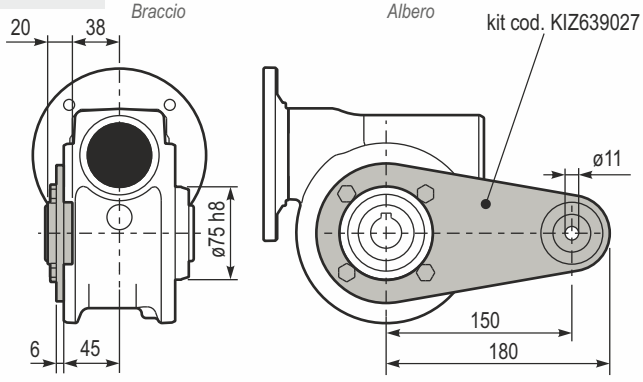
FC PZ63 Output flange
Flangia uscita



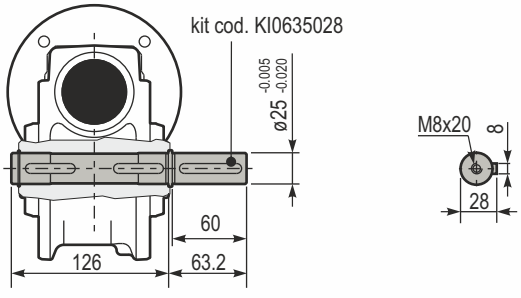
Type	øD	E	G	L	N	O	P	Q	Kit code
FC	1 +0.20 +0.15	7	13	86	26	150	175	11	❶ KZ639010 ❷ - 15
FL	115 +0.20 +0.15	7	13	116	56	150	175	11	❶ KZ639010 ❷ KZ630200

BR.. Reaction arm PZ63
Braccio di reazione

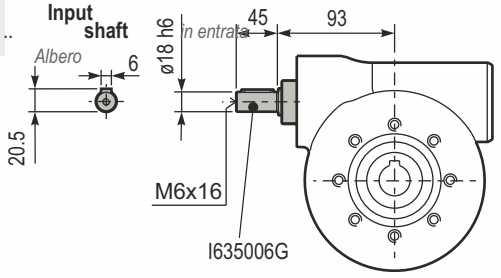
P output shaft PZ63..
Albero semplice in uscita



Single



S..R .. Input shaft
Albero in entrata



Z85

347 Nm

ALUMINIUM - Schneckengetriebe

Aluminum worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges				B14 motor flanges			Dynamic efficiency	Tooth module	Ratio code
							-	-	-	-	-R	-T	-U			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	-	-	80	90	100 112	RD	[mm]	
200	**7**	4.0	168	1.5	6.1	257								88	4.23	01
140	**10**	4.0	218	1.3	5.2	284								80	4.2	02
100	**14**	3.0	223	1.4	4.1	305								78	4.5	03
70	**20**	2.2	237	1.2	2.7	294								79	3.4	04
64	**22**	2.2	258	1.1	2.5	294								78	3.1	05
50	**28**	2.2	315	1.1	2.4	347								75	4.7	06
37	**38**	1.5	276	1.2	1.8	336								71	3.5	07
30	**46**	1.5	320	1.0	1.5	326								68	3.1	08
27	**52**	1.1	258	1.1	1.2	289								66	2.7	09
21	**67**	1.1	327	0.9	0.97	289								65	2.1	10
18.9	**74**	0.75	220	1.2	0.91	268								58	1.9	11
14.6	**96**	0.55	191	1.3	0.70	242								53	1.5	12

Motor flanges available *Flange motore disponibili*

B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*

B) Available on request without reduction bushing *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

Unit Z85 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo Z85 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

all positions: 0.95Lt. *Quantità olio per tutte le posizioni: 0.95Lt.*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

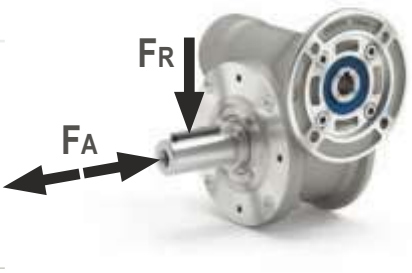
Radial and axial loads

Carichi radiali e assiali

Output shaft

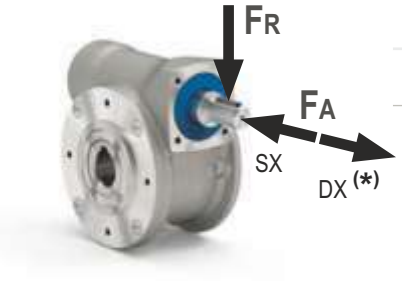
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
200	500	2500
150	580	2900
100	600	3000
75	700	3500
50	800	4000
25	1000	5000
15	1160	5800



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	130	650

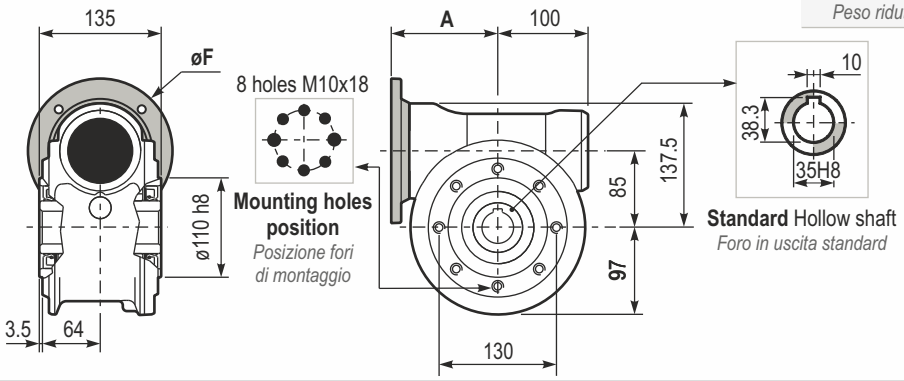
*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

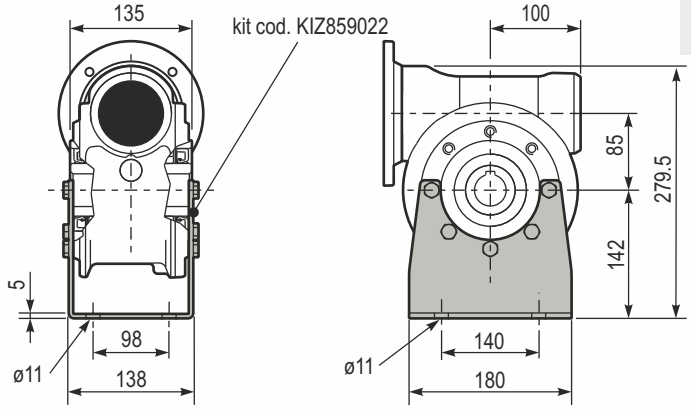
PZ85UN.. Basic gearbox
Riduttore base

Gearbox weight *Peso riduttore* **13.00 kg**

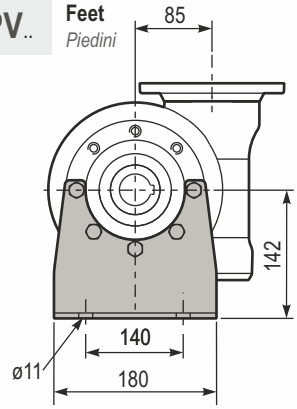
M. flanges	Kit code	øF	A
80B14	KZ854046	120	118.5
90B14	KZ854045	140	118.5
100/112B14	KZ854047	160	127.5



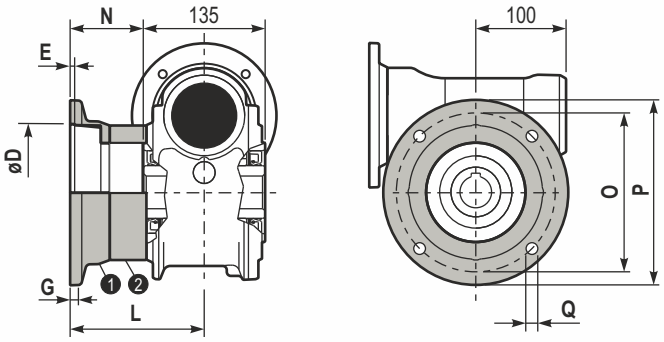
PZ85PA.. Feet
Piedini



PZ85PV.. Feet
Piedini

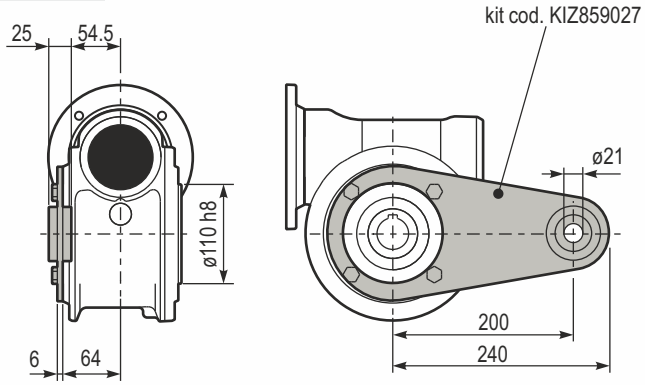


PZ85FC.. Output flange
Flangia uscita

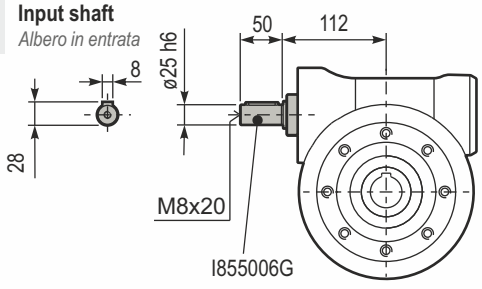


Type	øD	E	G	L	N	O	P	Q	Kit code
FC	$152^{+0.06}_{+0.00}$	5	16	108	40.5	176	205	13	❶ KZ859010 ❷ -
FL	$152^{+0.06}_{+0.00}$	5	16	148.5	81	176	205	13	❶ KZ859010 ❷ KZ850201

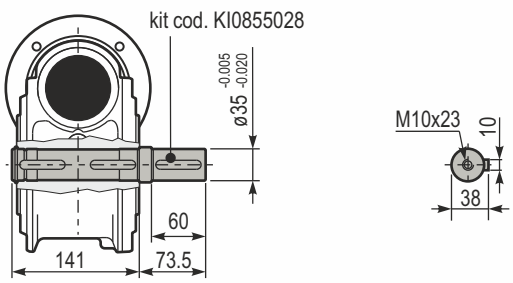
PZ85BR.. Reaction arm
Braccio di reazione



RZ85UN.. Input shaft
Albero in entrata



PZ85..S.. Single output shaft
Albero semplice in uscita



ALUMINIUM - Stirnradstufe

Aluminum ratio multipliers

This range is ATEX (on request) CE NTT NANOTECHNOLOGY TREATMENT nsF component certified

ALUMINIUM - Stirnradstufe

Aluminum ratio multipliers

t ype	torque *Coppia* *Tipo*	Center distance *Interasse*	Input power *Potenza in entrata*	Output shaft *Albero in uscita*
211Z	20 Nm	30 mm	0.25 ÷ 0.37 kW	ø14 mm

this product is:

ATEX (on request) · CE · NTT NANOTECHNOLOGY TREATMENT · NSF COMPONENT

Stainless steel output shaft.

Ntt™ stands for a special surface treatment which results in modified external properties of the complete unit in order to get a smooth surface and an higher corrosion resistance.

Fully modular IEC flanges and compact NEMA C motor flanges.

Standard FPM (fkm) seals are used, since seals will be in a closed area.

Hardened and ground gears.

211Z

20 Nm

ALUMINIUM - Stirnradstufe

Aluminum ratio multipliers

The dynamic efficienty is **0.98** for all ratios

Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges				Output shaft	Ratios code
							-	-	-O	-P	-Q			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	56	63	71			
682	**2.05**	0.37	5	2.0	0.73	10			C	C		1939		01
595	**2.35**	0.37	6	2.1	0.76	12			C	C		1740		02
500	**2.80**	0.37	7	2.0	0.75	14			C	C		1542		03
414	**3.38**	0.37	8	2.0	0.75	17			C	C		1344	standard	04
298	**4.70**	0.37	12	1.7	0.64	20			C	C		1047	ø14	05
225	**6.22**	0.37	15	1.5	0.55	23			C	C		956		06
169	**8.29**	0.37	20	1.0	0.36	20			C	C		758		07
142	**9.83**	0.25	16	1.0	0.24	16			C	C		659		08

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con bussola di riduzione

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication

Lubrificazione

Unit 211Z is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo 211Z viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.05Lt. *Quantità olio per tutte le posizioni: 0.05Lt*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

Radial and axial loads

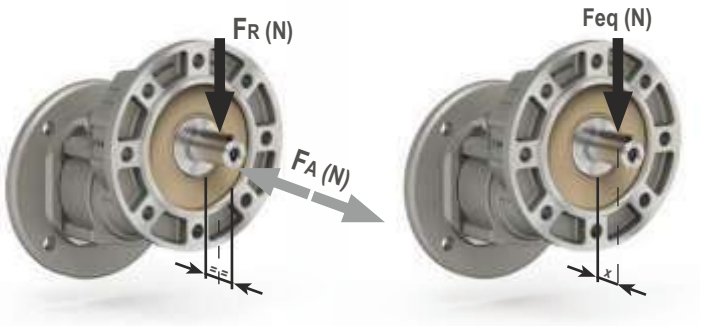
Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
700	101	504
600	120	600
400	138	696
300	151	756
200	175	876
140	192	960

$$Feq = F_R \cdot \frac{34.5}{X + 19.5}$$



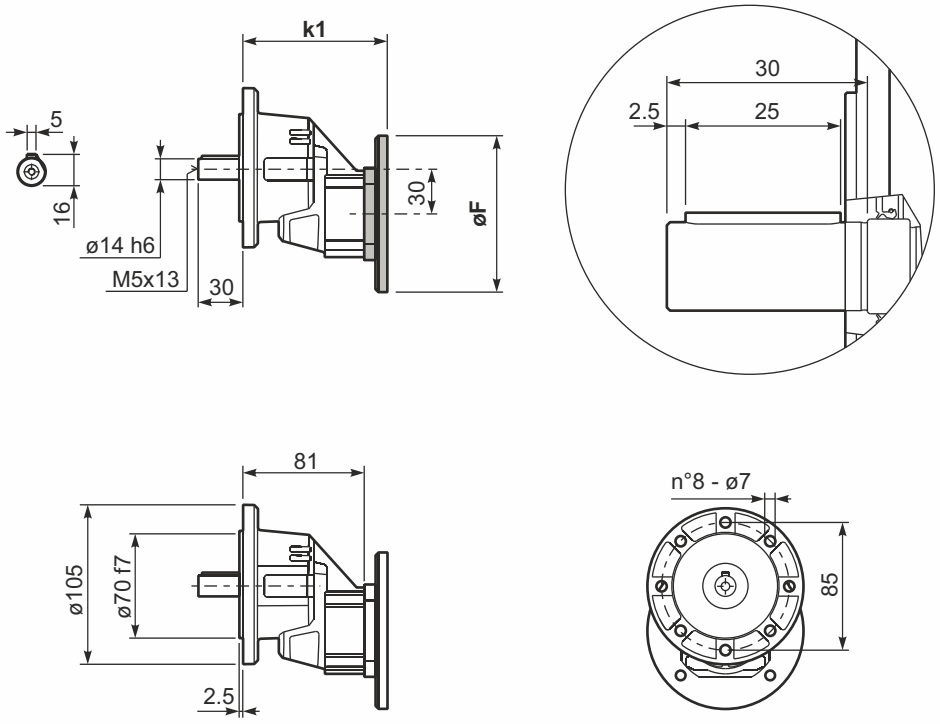
Tab. 2

P211Z-**F**...

Basic gearbox
Riduttore base

Gearbox weight *Peso riduttore*	1.40 kg

M. flanges	Kit code	k1	øF
56 B14	KZ504049	97	80
63 B14	KZ504047	99.5	90
71 B14	KZ504045	97	105



„Hygienics“ Edelstahlmotoren aus rostfreiem Stahl 316L, IP69K für die Lebensmittelverarbeitung, Pharmazie und andere Anwendungen für extreme Sauberkeit und häufiges Abwaschen

„Hygienics“ stainless steel Motors 316L, IP69K for food processing, pharmaceutical and other applications requiring extreme cleanliness and frequent washdowns

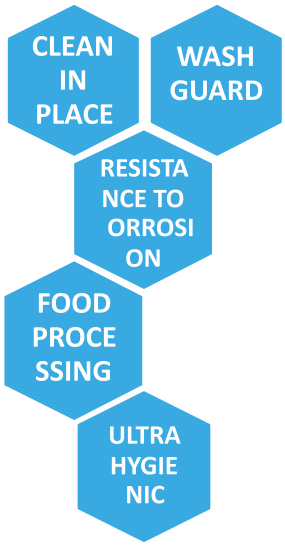
Bei Lebensmittel-, Getränke- oder chemisch-pharmazeutischen Produktionsanlagen sind die Motoren, zusammen mit anderen Teilen, oft Hochdruckwasserstrahlen ausgesetzt (manchmal auch bei hohen Temperaturen) oder noch aggressiveren Reinigungsmitteln.
Edelstahlmotoren können diesen Betriebszustand aushalten, wozu im Gegensatz Motoren anderer Art beschädigt oder sogar verschmutzt werden. Im Gegensatz zu Standardmotoren hat die Edelstahl-Baureihe keine Kühlung, keine Farbe, die abplatzt und keine Oberfläche, die rosten kann. Dies bedeutet, dass Abfallprodukte leicht weggespült werden können und keine Rückstände am Gerät entstehen und der Motor ohne Bedenken in der Lebensmittelverarbeitung eingesetzt werden kann. Sogar das Typenschild ist auf dem Außengehäuse eingraviert.

When food, beverage or chemical-pharmaceutical production plants are washed down, the motors, along with other parts, are often subjected to high pressure water jets (sometimes at high temperatures) or even more aggressive cleaning agents. Stainless steel motors can withstand this operating condition, that on the contrary can cause damage to other kind of motor, or even contaminate the end product. Unlike standard motors, the stainless steel range has no coolings, no paint to chip or fiake and no surface that will rust . This means that waste products can be washed away easily leaving no residue and the motor can be used with confidence in food processing areas , even the rating plate is engraved on the outer casing to.

Dank der Schutzart IP69K ist die Edelstahlmotorenreihe ein bewährtes Design für Washdown-Situationen.
Alle externen Komponenten sind aus Edelstahl AISI 316L gefertigt, die Motorwelle aus Edelstahl AISI 420 mit magnetischen Eigenschaften. Es gibt keine Farbe zum Abplatzen. Dies ermöglicht eine ausgezeichnete Beständigkeit gegen Korrosion und stellt eine zuverlässige und dauerhafte Lösung dar, bei der Hygiene eine wesentliche Rolle spielt. Edelstahlmotoren sind vollständig geschlossen, nicht belüftet (IC410) und erfüllen die höchsten Anforderungen an hygienisch einwandfreie Linien. Die Oberflächentemperatur ist begrenzt und das elektromagnetische Design und das zusätzliche interne aktive Material begünstigen dies. Die Effizienzklasse IE3: Die Motoren der Klasse F sind für Dauerbetrieb S1 und Überhitzung in der Klasse B / F ausgelegt. Die Effizienzklasse (0,75 kW IEC / EN60034-30) IE4: Motoren sind für den Umrichterbetrieb geeignet, d.h. für einen großen Bereich bei konstantem Drehmoment. Die Kabelverschraubung ist aus Edelstahl, die Öldichtungen aus Viton. Sämtliche Angaben sind auf der Rückseite lasergraviert. Die Oberfläche ist völlig glatt.

Thanks to the IP69K degree of protection, the stainless steel motor range is a proven design for washdown situations.
All external components are manufactured in AISI 316L stainless steel, motor shaft is in AISI 420 stain less steel with magnetic properties. There is no paint to flake off. This gives excellent resistance to corrosion and represents a reliable and durable solution where hygiene is essential.
The stainless steel motor range are totally enclosed non ventilated (IC410), able to satisfy the highest needs on ultra-hygienic clean lines. The surface temperature is limited thanks to an accurate electromagnetic design and the additional internal active material. The efficiency class is IE3.

The motors are class F designed for continuous duty S1 and overheating in class B/F, the energy efficiency class (0,75kW IEC / EN60034-30) is IE4. Motors are suitable for inverter operation with large range at constant torque.
The cable gland is in stainless steel, the oils seals are in viton.
The ratings are laser engraved on the back cover.
The surfaces are completely smooth.



Anschlussspannung	230 V 400 V
Netzfrequenz	50 Hz
ISO-Klasse	F
Schutzart	IP69K nach IC410
Betriebsart	S1
Bauform	B14 B5
Baugröße	63 - 90
Leistung	0,12 - 1,5 kW
Drehzahl	1500 oder 3000
Energieeffizienzklasse	IE4 nach IEC60034-30, IEC60034-2-1
Material	Edelstahl AISI316L

Anwendungsbereiche / Application fields

- Geflügel / Poultry
- Fleisch / Meat
- Meeresfrüchte / Seafood
- Milchverarbeitung / Dairy Processing
- Bäckerei / Bakery
- Abfüllung / Bottling
- Getränke / Beverage
- Pharmazeutische Industrie, Kosmetik / Pharmaceutical Industry ,cosmetics
- Chemische Herstellung / Chemical manufacture
- Tabak / Tobacco

Edelstahl

2 *poles*
3000min $^{-1}$

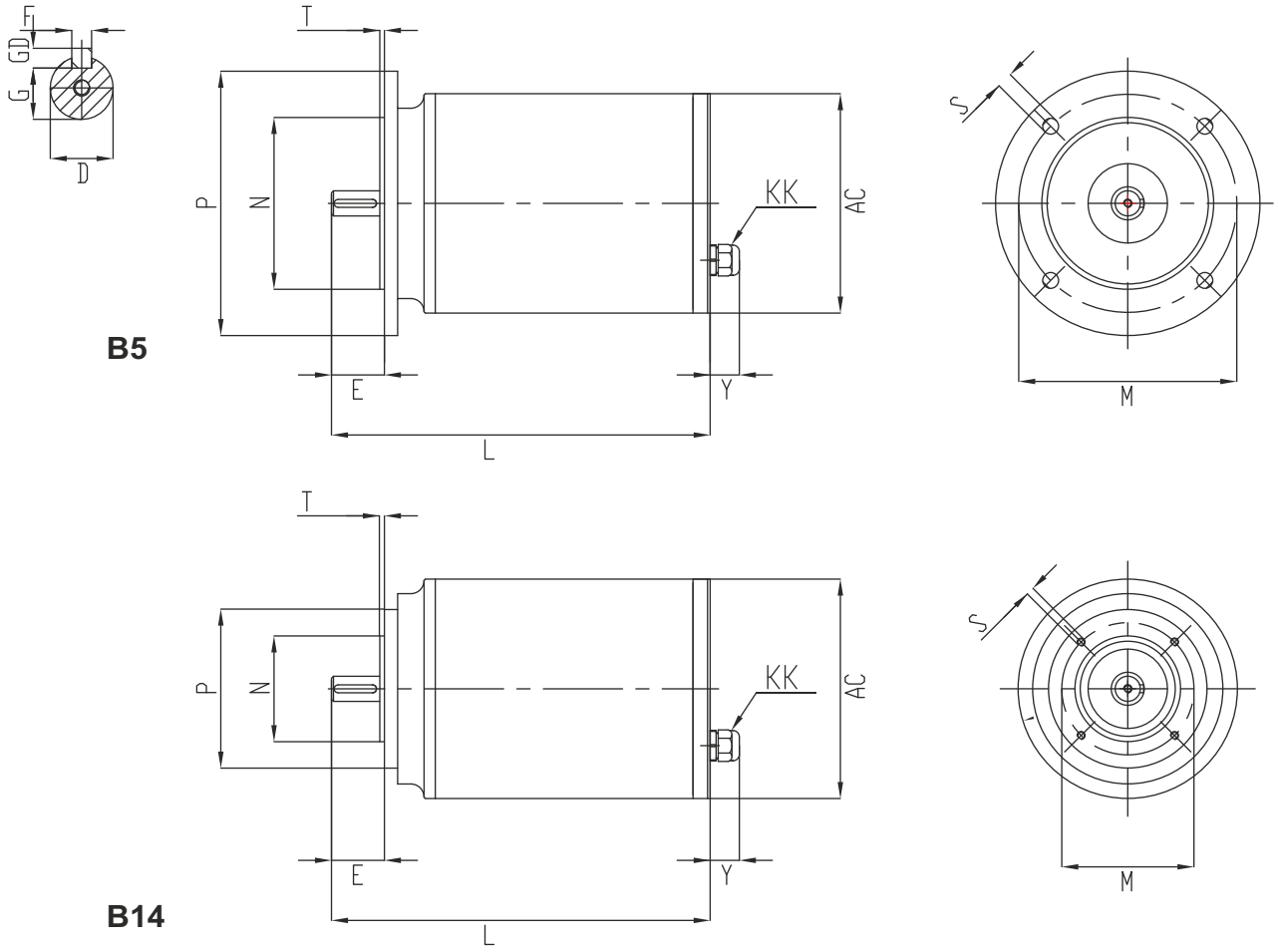
IE4

P_N [kW]	Motor			n_N [min^{-1}]	M_N [Nm]	I_N [A]	cos φ		η 100 %	η 75 %	η 50 %	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W B14 [kg]	W B5 [kg]
0,18	HY W	63 A	2	2840	0,61	0,42	0,81	-	77,0	-	-	3,5	3,9	6,5	0,0008	8,7	9,4
0,25	HY W	63 B	2	2840	0,84	0,56	0,83	-	77,6	-	-	3,5	3,9	6,7	0,0011	10	10,7
0,37	HY W	71 A	2	2840	1,24	0,8	0,83	-	80,0	-	-	4,4	4,6	8,2	0,0014	11,6	12,5
0,55	HY W	71 B	2	2840	1,85	1,2	0,85	-	81,5	-	-	4,5	4,7	8,7	0,0017	13,5	14,4
0,75	HY W	80 A	2	2920	2,45	1,6	0,82	*IE4*	87,0	87,6	85,8	4,1	4,6	11,0	0,0031	19	21
1,1	HY W	80 B	2	2920	3,60	2,3	0,84	*IE4*	87,5	88,0	86,2	4,2	5,0	11,5	0,0040	22	24

4 poli / *poles*
1500min $^{-1}$

IE4

P_N [kW]	Motor			n_N [min^{-1}]	M_N [Nm]	I_N [A]	cos φ		η 100 %	η 75 %	η 50 %	M_S/M_N	M_{max}/M_N	I_S/I_N	J_0 [kg m^2]	W B14 [kg]	W B5 [kg]
0,12	HY W	63 A	4	1440	0,80	0,32	0,69	-	77,0	-	-	2,4	3,1	5,6	0,0011	8,7	9,4
0,18	HY W	63 B	4	1440	1,2	0,47	0,71	-	77,5	-	-	2,4	3,1	5,8	0,0015	10	10,7
0,25	HY W	71 A	4	1440	1,7	0,6	0,74	-	79,0	-	-	2,7	3,0	6,1	0,0018	11,6	12,5
0,37	HY W	71 B	4	1440	2,5	0,9	0,76	-	81,1	-	-	3,2	3,4	6,9	0,0023	13,5	14,4
0,55	HY W	80 A	4	1460	3,6	1,3	0,72	-	83,9	-	-	3,7	4,8	9,1	0,0041	19	21
0,75	HY W	80 B	4	1460	4,9	1,7	0,73	*IE4*	87,0	86,5	83,8	4,2	5,0	10,0	0,0053	22	24
1,1	HY W	90 S	4	1460	7,2	2,4	0,77	*IE4*	87,2	87,3	85,4	4,0	4,7	10,1	0,0075	27	28,5
1,5	HY W	90 L	4	1460	9,8	3,2	0,77	*IE4*	88,2	88,1	86,4	4,5	5,1	10,8	0,0100	33	34,5



Size	Bearings		CableGlands	IM B5 (*)						IM B14					
	D	NDE	KK	M	N	P	R	n x S	T	M	N	P	R	n x S	T
63	6202 2RZ	6202 2RZ	M16X1.5	115	95 j6	140	0	4x10	3	75	60 j6	90	0	4xM5	2,5
7	6202 2RZ	6202 2RZ	M20X1.5	130	110 j6	160	0	4x10	3,5	85	70 j6	105	0	4xM6	2,5
80	6205 2RZ	6203 2RZ	M20X1.5	165	130 j6	200	0	4x12	3,5	100	80 j6	120	0	4xM6	3
90S/L	6205 2RZ	6203 2RZ	M25X1.5	165	130 j6	200	0	4x12	3,5	115	95 j6	140	0	4xM8	3

Size	Shaft					General		
	D	E	F	G	GD	AC	Y	L
63A	11 j6 M4	23	4	8,5	4 E	131	22	228
63B								243
71A	14 j6 M5	30	5	11	5	131	25	265
71B								285
80A	19 i6 M6	40	6	15,5	6	166	25	268
80B								288
90S	24 j6 M8 0	5	8	20	7	166	30	333
90L								373

(*) *only HYW series*

EDELSTAHL - Stirnkegelrad

Full stainless steel helical bevel gearboxes

This range is ip69K ATEX (on request) CE nsF component certified

EDELSTAHL - Stirnkegelrad

Full stainless steel helical bevel gearboxes

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*
X42I	150 Nm	-	0.25 ÷ 1.5 kW	**ø25**
X62I	410 Nm	-	0.75 ÷ 4.0 kW	**ø35**

This product is:

ip69K

ATEX (on request)

CE

nsF component

Output shaft in AISI 316L and special cover for full seals protection.

Closed protection cap with o-ring in AISI 316L.

Special high tech full stainless steel housing with accurate finishing and strong rigidity.

Fully modular IEC flanges and compact NEMA C motor flanges.

Stainless steel 316L hollow input/output shaft.
Viton seals with stainless steel 316L shield.

Hardened and ground gears.

X42I

150 nm

EDELSTAHL - Stirnkegelrad

Full stainless steel helical bevel gearboxes

The dynamic efficienty is

Input speed (n_1) = 1400 min^{-1}

Output speed n_2 [min^{-1}]	ratio i	Motor power p_{1M} [kw]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power p_{1R} [kw]	Nominal torque M_{2r} [Nm]	B5 motor flanges - - - -	B14 motor flanges -Q 71	-r 80	-T 90		Output shaft ø	ratio code
192	**7.29**	1.5	71	1.3	2.0	95		c	c		2811		01
125	**11.20**	1.5	110	1.4	2.0	150		c	c		288		02
106	**13.18**	1.5	129	1.2	1.7	150		c	c		1911		03
92	**15.27**	1.1	109	1.4	1.5	150		c	c		1711		04
78	**17.93**	1.1	128	1.2	1.3	150		c	c		1511		05
69	**20.25**	1.1	145	1.0	1.1	150		c	c		198		06
65	**21.40**	1.1	153	1.0	1.1	150		c	c		1311		07
60	**23.47**	0.75	115	1.3	0.98	150		c	c		178	**standard**	08
51	**27.55**	0.75	135	1.1	0.83	150		c	c		158	**ø25**	09
47.9	**29.21**	0.75	143	1.0	0.78	150		c	c		1011		10
42.6	**32.88**	0.75	161	0.9	0.70	150		c	c		138		11
36.7	**38.12**	0.55	138	1.1	0.60	150		c	c		911		12
31.2	**44.89**	0.55	163	0.9	0.51	150		c	c		108		13
27.8	**50.34**	0.37	122	1.1	0.40	131		c	c		711		14
23.9	**58.58**	0.37	142	1.1	0.39	150		c	c		98		15
18.1	**77.36**	0.25	126	1.2	0.30	150		c	c		78		16

Motor flanges available
Flange motore disponibili

B) *Fornito con bussola di riduzione*

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication

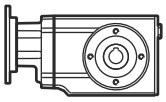
Lubrificazione

unit X42I is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo X42I viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*

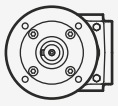
Shell *Omala S4 WE 320*

B3 *Standard* 0.85 LT

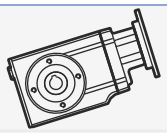


B6 *On request* 0.95 LT

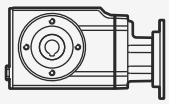
B7 *On reques* 0.85 LT



V8 *On request* asK

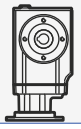


B8 *On request* 1.00 LT



V5 *On request* 1.60 LT

V6 *On request* 1.00 LT



0.96 for all ratios

For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

radial and axial loads

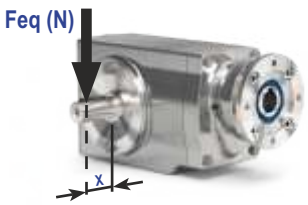
Carichi radiali e assiali

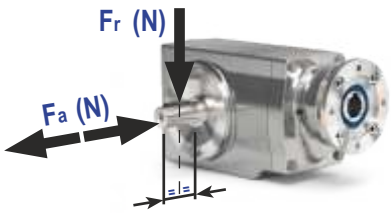
Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
250	500	2500
150	600	3000
100	700	3500
75	800	4000
50	960	4800
25	960	4800
15	960	4800

$$Feq = Fr \cdot \frac{54}{X + 28}$$

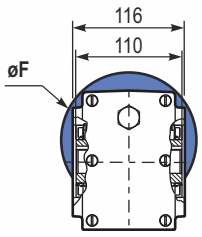


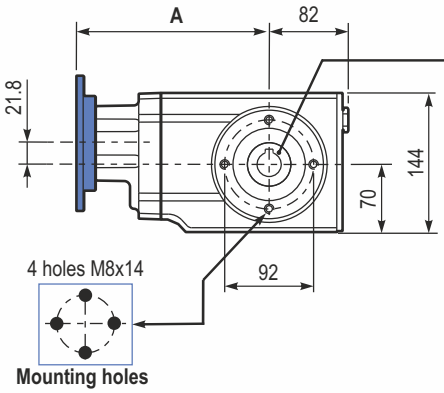


Tab. 2

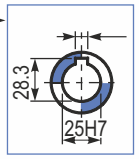
PX42II... 14.5 **Basic gearbox** *base*
Riduttore

M. flanges	Kit code	øF	A
71B14	KI634047	105	197.5
80B14	KI634046	120	199.5
90B14	KI634041	140	199.5





Mounting holes position
Posizione fori di montaggio

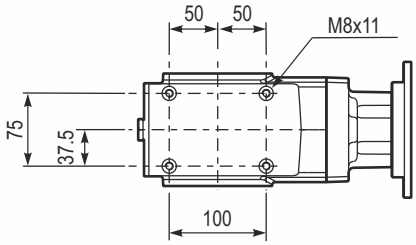


Standard Hollow shaft
Foro in uscita standard

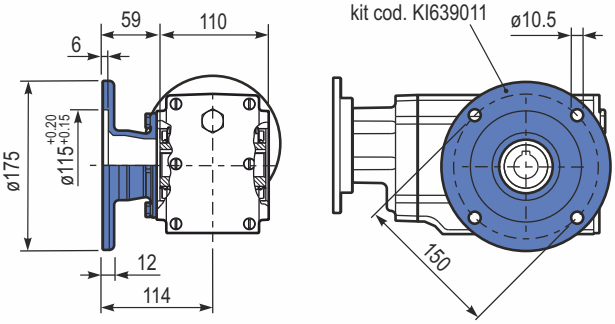
Gearbox weight *peso riduttore* **13.0 kg**

8

PX **-FB**.. **Feet**
Piedini

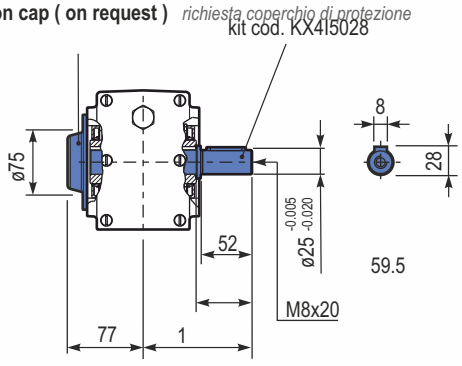


-FL.. PX42I.. **Output flange** *uscita* 42I
Flangia

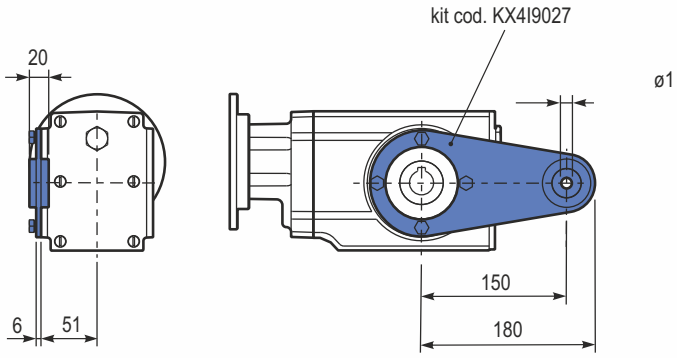


PX **A**.. **Single output shaft** *semplice in uscita*
Albero

kit cod. KI630211
Protection cap (on request) *richiesta coperchio di protezione*
A



PX42I**BR**.. **Reaction Arm** *di reazione* 1
Braccio



ø1

Edelstahl

X62I

410 Nm

EDELSTAHL - Stirnkegelrad

Full stainless steel helical bevel gearboxes

The dynamic efficienty is

Input speed (n_1) = 1400 min^{-1}

Output speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges - - - - - - - -U 100-412	B14 motor flanges -R 80	-T 90		Output shaft	Ratio code
232	**6.03**	4	155	1.6	6.1	240				3011		01
151	**9.26**	4	238	1.1	4.5	270				308		02
123	**11.36**	4	291	1.2	4.7	350				2011		03
91	**15.36**	4	394	1.0	3.8	385				1611		04
80	**17.46**	4	448	0.9	3.5	400				208		05
70	**19.97**	3	386	1.1	3.1	410				1311		06
59	**23.60**	3	456	0.9	2.7	410				168	**Standard ø35**	07
57	**24.45**	3	472	0.9	2.6	410				1111		08
45.6	**30.69**	2.2	436	0.9	2.0	410				138		09
39.6	**35.35**	1.5	346	1.2	1.8	410				811		10
37.3	**37.57**	1.5	368	1.1	1.7	410				118		11
28.8	**48.68**	1.1	348	1.0	1.1	365				611		12
25.8	**54.33**	1.1	389	1.1	1.2	410				88		13
18.7	**74.81**	0.75	367	1.0	0.73	360				68		14

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con Bussola di Riduzione

B) Available on request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor flange holes position**
Posizione Fori Flangia Motore

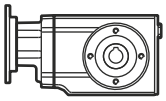
Lubrication

Lubrificazione

Unit X62I is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo X62I viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

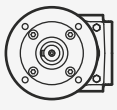
Agip *Telium VSF 320* — **Shell** *Omala S4 WE 320*

B3 *Standard* 1.85 LT

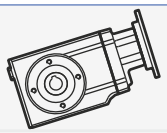


B6 *On request* 2.00 LT

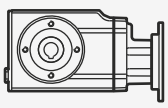
B7 *On request* 1.70 LT



V8 *On request* ASK

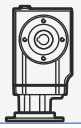


B8 *On request* 2.00 LT



V5 *On request* 3.35 LT

V6 *On request* 2.30 LT



0.96 for all ratios

For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

Radial and axial loads

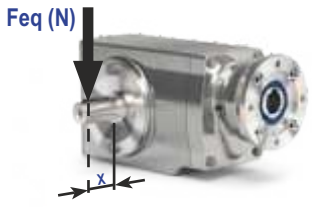
Carichi radiali e assiali

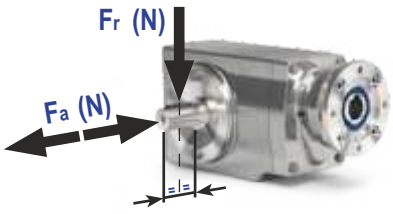
Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
250	600	3000
150	700	3500
100	780	3900
75	890	4450
50	1140	5700
25	1330	6650
15	1660	8300

$$Feq = Fr \cdot \frac{69}{X + 39}$$

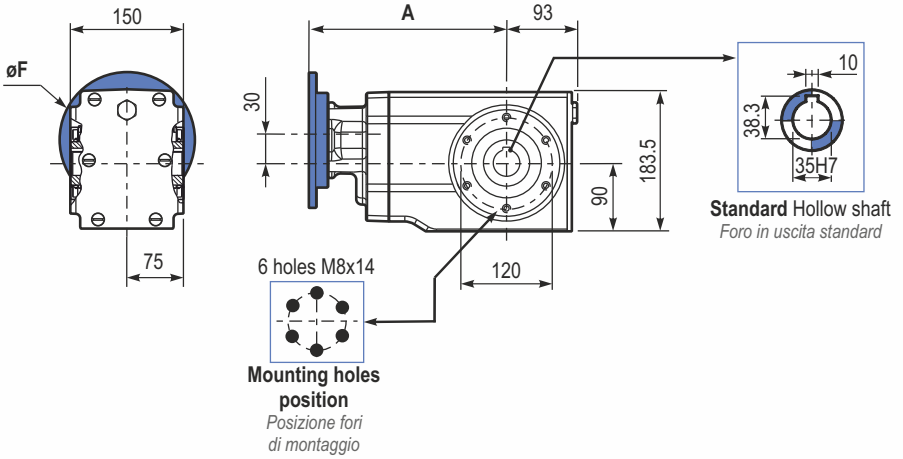




Tab. 2

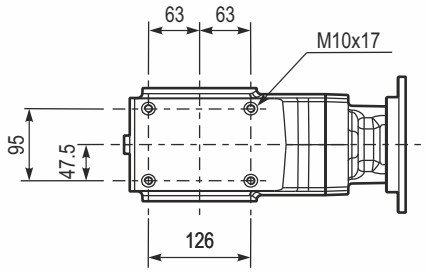
PX62II... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	255
90B14	KI854045	140	255
100-112B14	KI854041	160	264

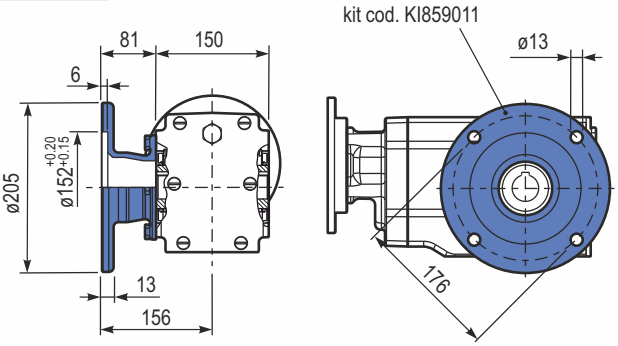


Gearbox weight / *peso riduttore* **25.8 kg**

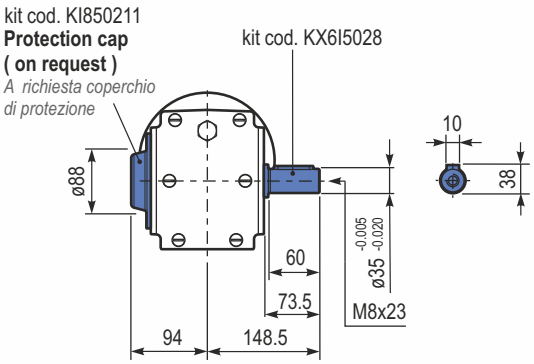
PX62I-FB.. Feet
Piedini



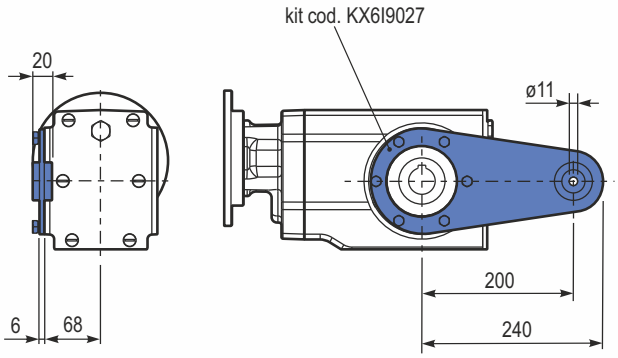
PX62I-FL.. Output flange
Flangia uscita



PX62I..A.. Single output shaft
Albero semplice in uscita



PX62IBR.. Reaction Arm
Braccio di reazione



Edelstahl

EDELSTAHL - Stirnkegelrad harsh environment

stainless steel shielded helical bevel gearboxes

This range is ip69K CE nsF component certified

EDELSTAHL - Stirnkegelrad harsh environment

stainless steel shielded helical bevel gearboxes

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*
X22L	50 Nm	-	0.12 ÷ 0.37 kW	**ø20**
X32L	90 Nm	-	0.25 ÷ 1.5 kW	**ø20**
X42L	150 Nm	-	0.25 ÷ 1.5 kW	**ø25**
X52L	250 Nm	-	0.55 ÷ 3.0 kW	**ø30**
X62L	410 Nm	-	0.75 ÷ 4.0 kW	**ø35**

This product is:

ip69K

CE

nsF component

The “L” series is an already totally enclosed aluminum gearboxes, that is shielded and sealed by stainless steel 316L case.

Output shaft is produced in AISI 316L.

Protection cap in AISI 316L.

Fully modular IEC flanges and compact NEMA C motor flanges.

Stainless steel 316L hollow output shaft.
Viton seals with stainless steel 316L shield.

Hardened and ground gears.

X22L

50 nm

EDELSTAHL - Stirnkegelrad harsh environment

stainless steel shielded helical bevel gearboxes

The dynamic efficienty is

Input speed (n_1) = 1400 min^{-1}

Output speed n_2 [min^{-1}]	ratio i	Motor power p_{1M} [kw]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power p_{1R} [kw]	Nominal torque M_{2r} [Nm]	B5 motor flanges - 63 -	B5 motor flanges - -	B14 motor flanges -p	B14 motor flanges -Q 71		Output shaft ø	ratio code
290	**4.83**	0.37	12	2.6	0.95	30			c		289		01
189	**7.40**	0.37	18	1.7	0.62	30			c		287		02
146	**9.58**	0.37	23	1.7	0.64	40			c		199		03
128	**10.98**	0.37	27	1.7	0.63	45			c		179		04
107	**13.07**	0.37	32	1.4	0.53	45			c		159		05
95	**14.66**	0.37	35	1.3	0.47	45			c		197		06
89	**15.79**	0.37	38	1.2	0.44	45			c		139		07
83	**16.81**	0.37	41	1.1	0.41	45			c		177	**standard ø20**	08
70	**20.00**	0.37	48	1.0	0.37	48			c		157		09
64	**21.93**	0.37	53	0.9	0.35	50			c		109		10
58	**24.18**	0.25	39	1.3	0.32	50			c		137		11
48.2	**29.04**	0.25	47	1.1	0.26	50			c		99		12
41.7	**33.57**	0.18	42	1.2	0.23	50			c		107		13
36.2	**38.67**	0.18	48	1.0	0.20	50			c		79		14
31.5	**44.44**	0.18	55	0.9	0.17	50			c		97		15
23.7	**59.18**	0.12	48	1.0	0.13	50			c		77		16
19.9	**70.24**	0.12	57	0.9	0.11	50			c		67		17

Motor flanges available *Flange motore disponibili*

B) *Fornito con bussola di riduzione*

B) **Available on request without reduction bushing** *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

Always specify the mounting position

Specificare sempre la posizione di montaggio

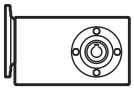
unit X22L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo X22L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*

Shell *Omala S4 WE 320*

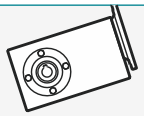
B3 *Standard* 0.25 LT



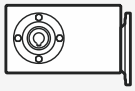
B6 *On request* 0.25 LT

B7 *On reques* 0.25 LT

V8 *On request* asK



B8 *On request* 0.25 LT



V5 *On request* 0.43 LT

V6 *On request* 0.31 LT

0.96 for all ratios

Tab. 1

radial and axial loads

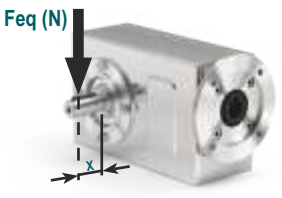
Carichi radiali e assiali

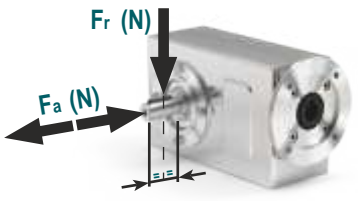
Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
400	360	1800
250	380	1900
150	420	2100
100	440	2200
75	440	2200
50	440	2200
25	440	2200
15	440	2200

$$Feq = Fr \cdot \frac{42}{X + 23}$$

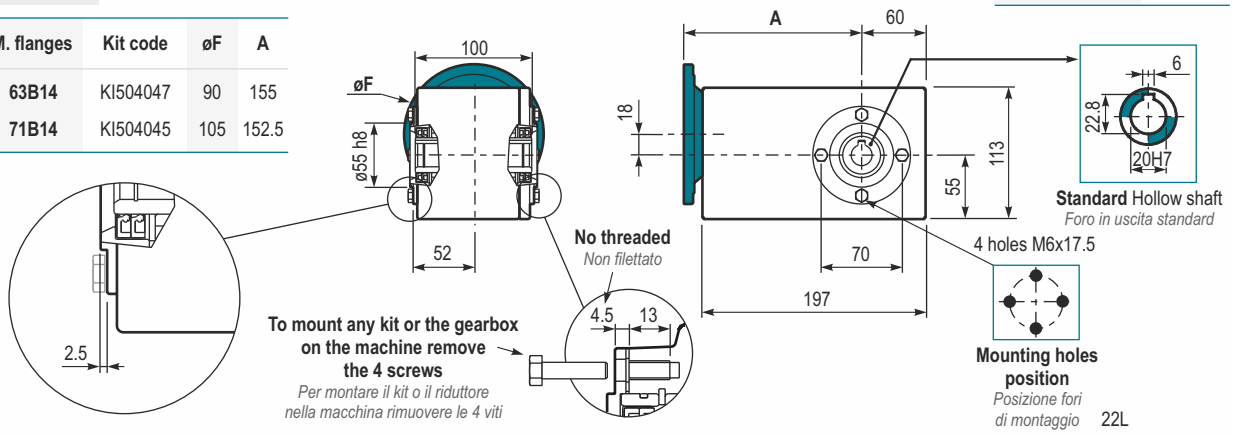




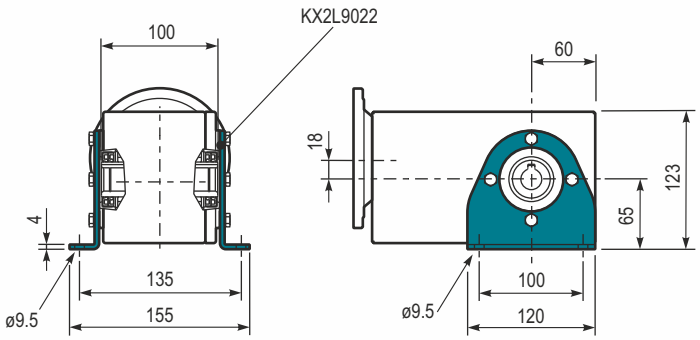
Tab. 2

PX22L...

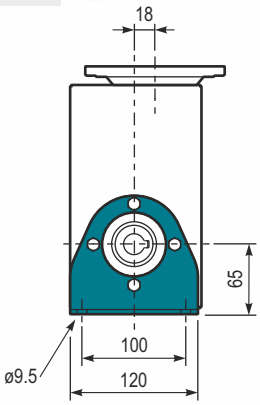
M. flanges	Kit code	øF	A
63B14	KI504047	90	155
71B14	KI504045	105	152.5



PX P .. A Feet *Piedini* 22L..



PX22LPV.. Feet *Piedini*



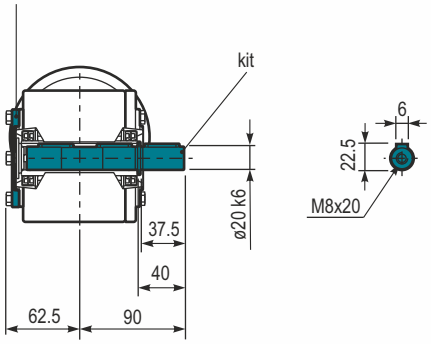
PXA..

cod. KIX2S5028

cod. X2L0209

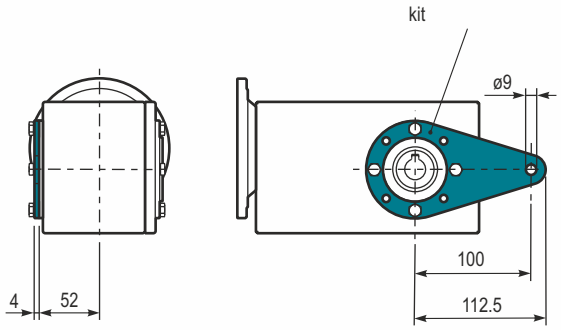
Protection cap (on request)

A



BR.. Reaction

cod. KX2L9027



Edelstahl

X32L

90 nm

EDELSTAHL - Stirnkegelrad harsh environment

stainless steel shielded helical bevel gearboxes

The dynamic efficienty is

Input speed (n_1) = 1400 min^{-1}

Output speed n_2 [min^{-1}]	ratio i	Motor power p_{1M} [kw]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power p_{1R} [kw]	Nominal torque M_{2r} [Nm]	B5 motor flanges - - / - -	B14 motor flanges -Q 71	-r 80	-T 90		Output shaft ø	ratio code
191	**7.33**	1.5	72	1.0	1.5	70		c	c		289		01
125	**11.22**	1.1	80	1.1	1.2	85		c	c		287		02
106	**13.26**	1.1	95	0.9	0.98	85		c	c		199		03
91	**15.37**	1.1	110	0.8	0.89	90		c	c		179		04
78	**18.04**	0.75	89	1.0	0.76	90		c	c		159		05
69	**20.30**	0.75	100	0.9	0.68	90		c	c		197		06
65	**21.54**	0.75	106	0.9	0.64	90		c	c		139		07
59	**23.53**	0.55	85	1.1	0.58	90		c	c		177	**standard**	08
51	**27.62**	0.55	100	0.9	0.50	90		c	c		157	**ø20**	09
47.6	**29.40**	0.55	106	0.8	0.47	90		c	c		109		10
42.5	**32.97**	0.37	80	1.1	0.42	90		c	c		137		11
36.5	**38.37**	0.37	93	1.0	0.36	90		c	c		99		12
31.1	**45.00**	0.25	73	1.2	0.31	90		c	c		107		13
27.6	**50.67**	0.25	83	1.1	0.27	90		c	c		79		14
23.8	**58.73**	0.25	96	0.9	0.23	90		c	c		97		15
18.1	**77.55**	0.25*	127	0.7	0.18	90		c	c		77		16

*** Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2r}**

Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available *Flange motore disponibili*

B) *Fornito con bussola di riduzione*

B) Available on request without reduction bushing *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

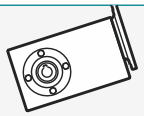
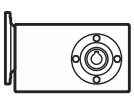
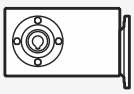
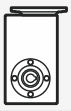
Lubrificazione

Always specify the mounting position

Specificare sempre la posizione di montaggio

unit X32L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo X32L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*	**V8** *On request* asK	
B3 *Standard* 0.40 IT		**B8** *On request* 0.60 IT	
B6 *On request* 0.60 IT		**V5** *On request* 0.85 LT	
B7 *On reques* 0.40 IT		**V6** *On request* 0.60 IT	

0.96 for all ratios

Tab. 1

radial and axial loads

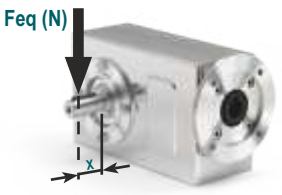
Carichi radiali e assiali

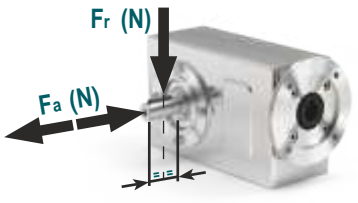
Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
250	400	2000
150	450	2250
100	500	2500
75	560	2800
50	560	2800
25	560	2800
15	560	2800

$$Feq = Fr \cdot \frac{47.5}{X + 28.5}$$



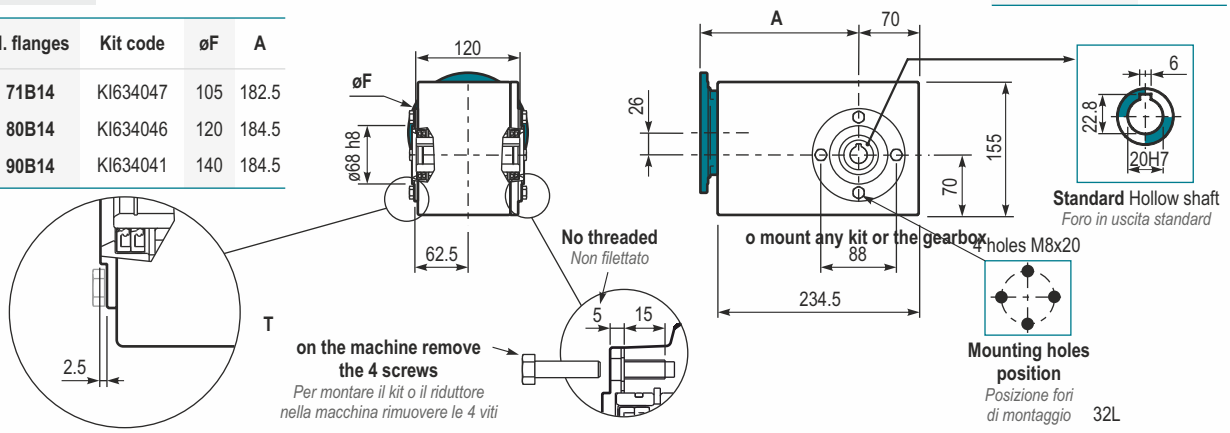


Tab. 2

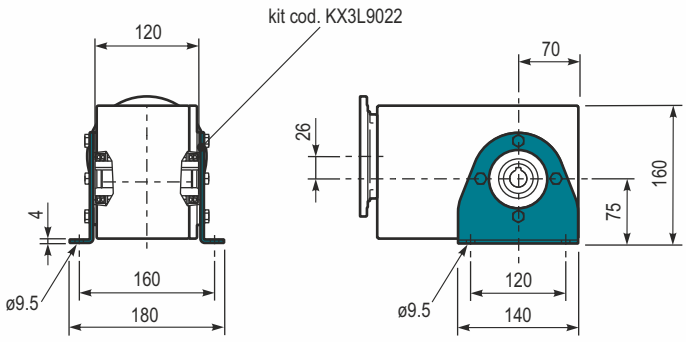
PX32L...

M. flanges	Kit code	øF	A
71B14	KI634047	105	182.5
80B14	KI634046	120	184.5
90B14	KI634041	140	184.5

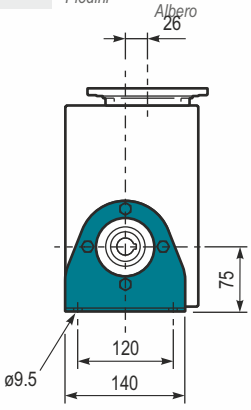
Gearbox weight
Peso riduttore



PX **P** .. **A** **Feet** *Piedini* 32L..

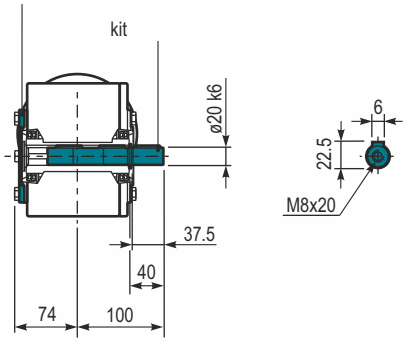


PX32L**PV**.. **Feet** *Piedini* **output shaft** *Albero*

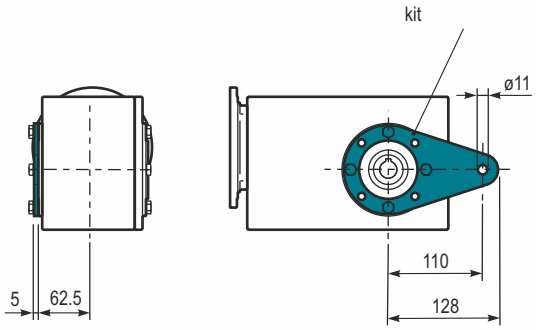


PX**A**.. **Single** cod. KIX3S5028

Protection cap (on request) *richiesta coperchio di protezione* X3L0209
A



BR.. **Reaction** cod. KX3L9027



Edelstahl

X42L

150 nm

EDELSTAHL - Stirnkegelrad harsh environment

stainless steel shielded helical bevel gearboxes

The dynamic efficienty is

Input speed (n_1) = 1400 min^{-1}

Output speed n_2 [min^{-1}]	ratio i	Motor power p_{1M} [kw]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power p_{1R} [kw]	Nominal torque M_{2r} [Nm]	B5 motor flanges - - / - -	B14 motor flanges -Q 71	-r 80	-T 90		Output shaft ø	ratio code
192	**7.29**	1.5	71	1.3	2.0	95		c	c		2811		01
125	**11.20**	1.5	110	1.4	2.0	150		c	c		2811		02
106	**13.18**	1.5	129	1.2	1.7	150		c	c		1911		03
92	**15.27**	1.1	109	1.4	1.5	150		c	c		1711		04
78	**17.93**	1.1	128	1.2	1.3	150		c	c		1511		05
69	**20.25**	1.1	145	1.0	1.1	150		c	c		198		06
65	**21.40**	1.1	153	1.0	1.1	150		c	c		1311		07
60	**23.47**	0.75	115	1.3	0.98	150		c	c		178	**standard**	08
51	**27.55**	0.75	135	1.1	0.83	150		c	c		158	**ø25**	09
47.9	**29.21**	0.75	143	1.0	0.78	150		c	c		1011		10
42.6	**32.88**	0.75	161	0.9	0.70	150		c	c		138		11
36.7	**38.12**	0.55	138	1.1	0.60	150		c	c		911		12
31.2	**44.89**	0.55	163	0.9	0.51	150		c	c		108		13
27.8	**50.34**	0.37	122	1.1	0.40	131		c	c		711		14
23.9	**58.58**	0.37	142	1.1	0.39	150		c	c		98		15
18.1	**77.36**	0.25	126	1.2	0.30	150		c	c		78		16

Motor flanges available
Flange motore disponibili

B) *Fornito con bussola di riduzione*

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

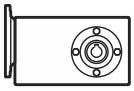
Lubrication
Lubrificazione

Always specify the mounting position
Specificare sempre la posizione di montaggio

unit X42L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo X42L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*

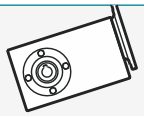
B3
Standard
0.60 IT



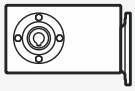
B6
On request
0.75 LT

B7
On reques
0.50 LT

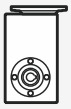
V8
On request
asK



B8
On request
0.70 LT



V5
On request
1.10 LT



V6
On request
0.60 IT

0.96 for all ratios

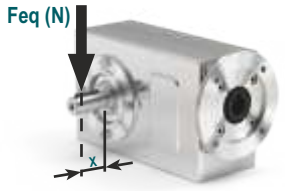
Tab. 1

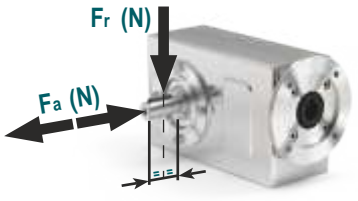
radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
250	500	2500
150	600	3000
100	700	3500
75	800	4000
50	960	4800
25	960	4800
15	960	4800

$$Feq = F_r \cdot \frac{54}{X + 28}$$



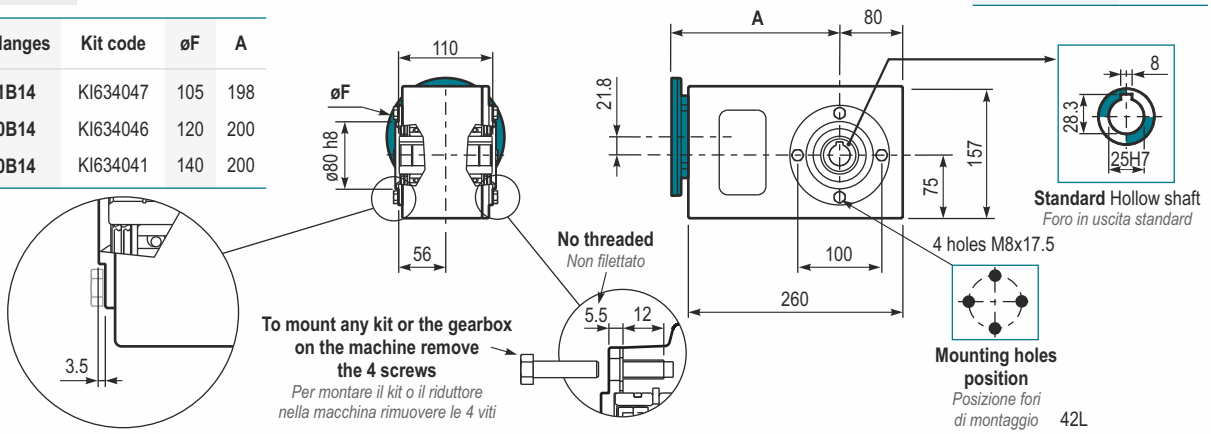


Tab. 2

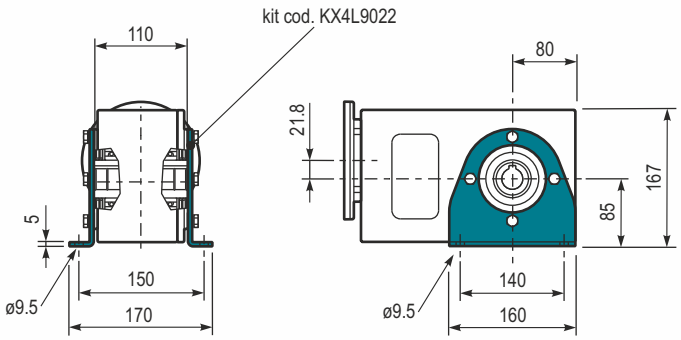
PX42L...

M. flanges	Kit code	øF	A
71B14	KI634047	105	198
80B14	KI634046	120	200
90B14	KI634041	140	200

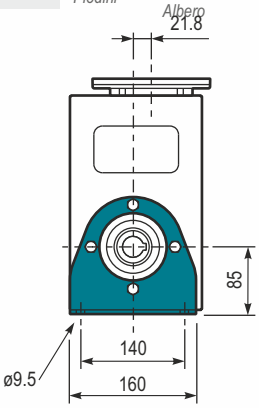
Gearbox weight
Peso riduttore



PX P .. A Feet 42L..
Piedini

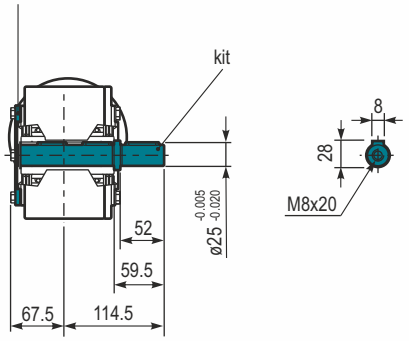


PX42LPV.. Feet output shaft
Piedini *Albero*

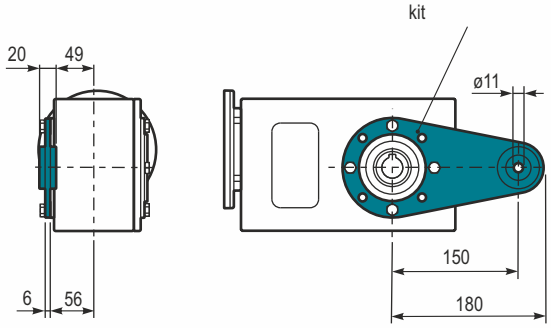


PXA.. Single cod. KX4I5028

Protection cap (on request) *richiesta coperchio di protezione* X4L0209
A



BR.. Reaction cod. KX4L9027



X52L

250 Nm

EDELSTAHL - Stirnkegelrad harsh environment

Stainless steel shielded helical bevel gearboxes

The dynamic efficienty is

Input speed (n_1) = 1400 min^{-1}

Output speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges - - - - - - - -	B14 motor flanges -R 80	-T 90	-U 100-112		Output shaft	Ratio code
232	**6.03**	3	116	1.2	3.4	135					3011		01
151	**9.26**	3	179	0.9	2.6	155					3081		02
123	**11.36**	3	219	1.0	3.1	230					2011		03
91	**15.36**	2.2	218	1.1	2.5	250					1611		04
80	**17.46**	2.2	248	1.0	2.2	250					208		05
70	**19.97**	2.2	284	0.9	1.9	250					1311		06
59	**23.60**	1.5	231	1.1	1.6	250					168	**Standard ø30**	07
57	**24.45**	1.5	239	1.0	1.6	250					1111		08
45.6	**30.69**	1.1	220	1.1	1.2	250					138		09
39.6	**35.35**	1.1	253	1.0	1.1	250					811		10
37.3	**37.57**	1.1	269	0.9	1.0	250					118		11
28.8	**48.68**	0.75	239	1.0	0.78	250					611		12
25.8	**54.33**	0.75	267	0.9	0.70	250					88		13
18.7	**74.81**	0.55	271	0.8	0.43	210					68		14

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con Bussola di Riduzione

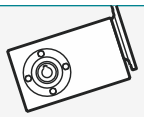
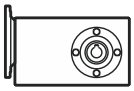
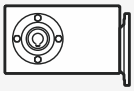
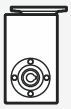
B) Available on request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

C) Motor flange holes position
Posizione Fori Flangia Motore

Lubrication
Lubrificazione

Always specify the mounting position
Specificare sempre la posizione di montaggio

Unit X52L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo X52L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*	**V8** *On request* ASK	
B3 *Standard* 0.90 LT		**B8** *On request* 1.40 LT	
B6 *On request* 1.50 LT		**V5** *On request* 1.95 LT	
B7 *On request* 0.75 LT		**V6** *On request* 1.15 LT	

0.96 for all ratios

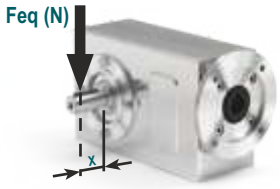
Tab. 1

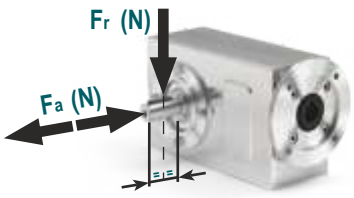
Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
250	600	3000
150	700	3500
100	800	4000
75	820	4100
50	960	4800
25	1350	6750
15	1660	8300

$$Feq = F_r \cdot \frac{61.5}{X + 31}$$



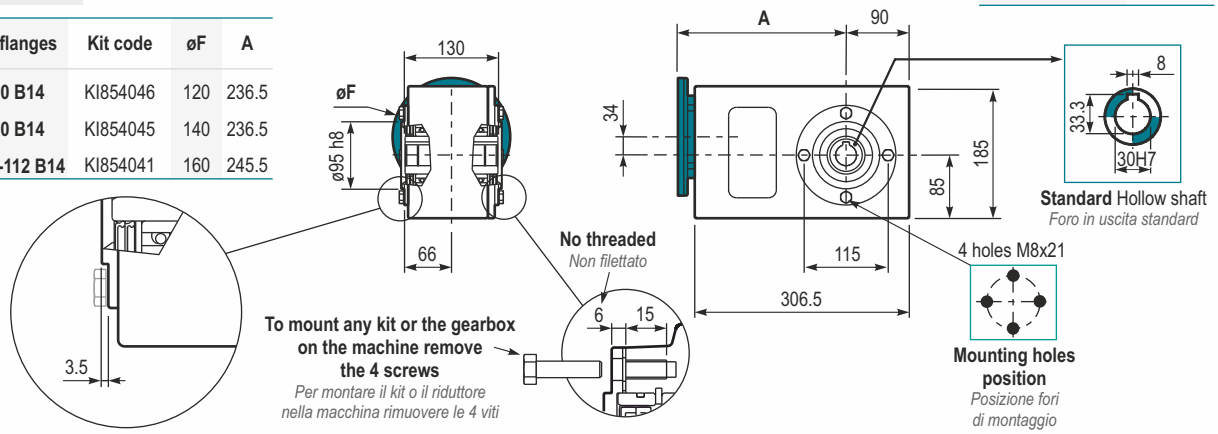


Tab. 2

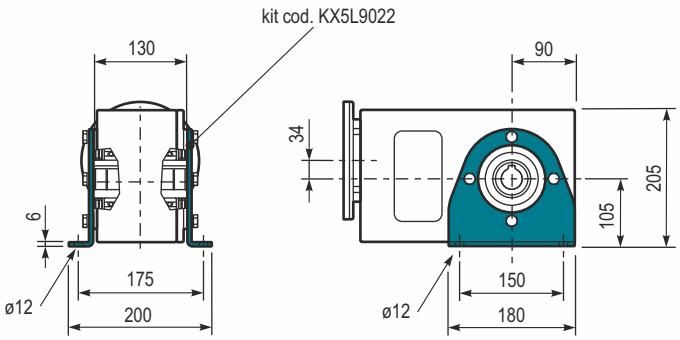
PX52L... Basic gearbox
Riduttore base

Gearbox weight *Peso riduttore* **15.8 kg**

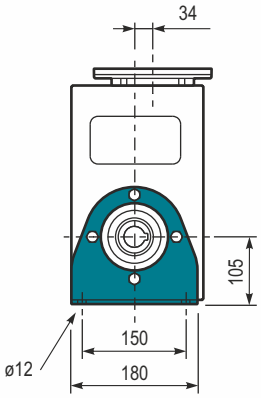
M. flanges	Kit code	øF	A
80 B14	KI854046	120	236.5
90 B14	KI854045	140	236.5
100-112 B14	KI854041	160	245.5



PX52LPA.. Feet
Piedini

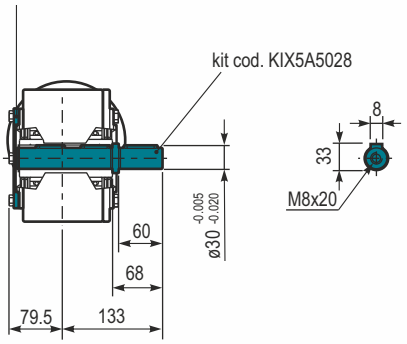


PX52LPV.. Feet
Piedini

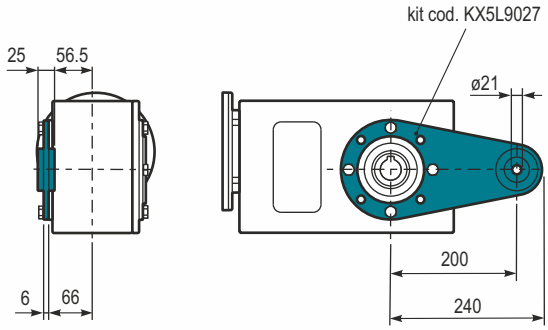


PX52L..A.. Single output shaft
Albero semplice in uscita

cod. X5L0209
Protection cap (on request)
A richiesta coperchio di protezione



PX52LBR.. Reaction Arm
Braccio di reazione



Edelstahl

X62L

410 Nm

EDELSTAHL - Stirnkegelrad harsh environment

Stainless steel shielded helical bevel gearboxes

The dynamic efficienty is — **Input speed (n_1) = 1400 min^{-1}**

Output speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges - - - - - - - -	B14 motor flanges -R 80	-T 90	-U 100-112		Output shaft	Ratio code
232	**6.03**	4	155	1.6	6.1	240					3011		01
151	**9.26**	4	238	1.1	4.5	270					308		02
123	**11.36**	4	291	1.2	4.7	350					2011		03
91	**15.36**	4	394	1.0	3.8	385					1611		04
80	**17.46**	4	448	0.9	3.5	400					208		05
70	**19.97**	3	386	1.1	3.1	410					1311		06
59	**23.60**	3	456	0.9	2.7	410					168	**Standard ø35**	07
57	**24.45**	3	472	0.9	2.6	410					1111		08
45.6	**30.69**	2.2	436	0.9	2.0	410					138		09
39.6	**35.35**	1.5	346	1.2	1.8	410					811		10
37.3	**37.57**	1.5	368	1.1	1.7	410					118		11
28.8	**48.68**	1.1	348	1.0	1.1	365					611		12
25.8	**54.33**	1.1	389	1.1	1.2	410					88		13
18.7	**74.81**	0.75	367	1.0	0.73	360					68		14

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con Bussola di Riduzione

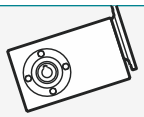
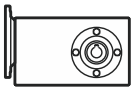
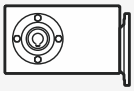
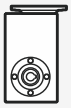
B) Available on request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

C) Motor flange holes position
Posizione Fori Flangia Motore

Lubrication
Lubrificazione

Always specify the mounting position
Specificare sempre la posizione di montaggio

Unit X62L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo X62L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*	**V8** *On request* ASK	
B3 *Standard* 1.25 LT		**B8** *On request* 1.60 LT	
B6 *On request* 1.70 LT		**V5** *On request* 2.45 LT	
B7 *On request* 0.95 LT		**V6** *On request* 1.50 LT	

0.96 for all ratios

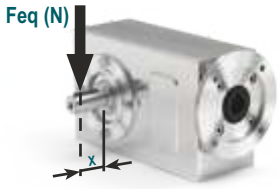
Tab. 1

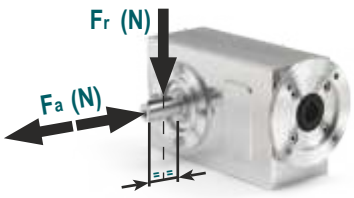
Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
250	600	3000
150	700	3500
100	780	3900
75	890	4450
50	1140	5700
25	1330	6650
15	1660	8300

$$Feq = Fr \cdot \frac{69}{X + 39}$$



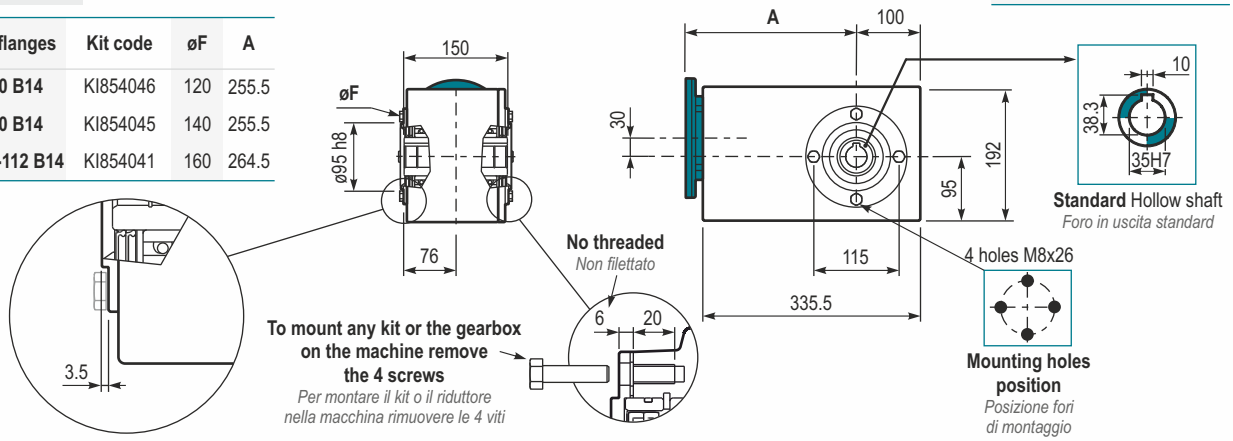


Tab. 2

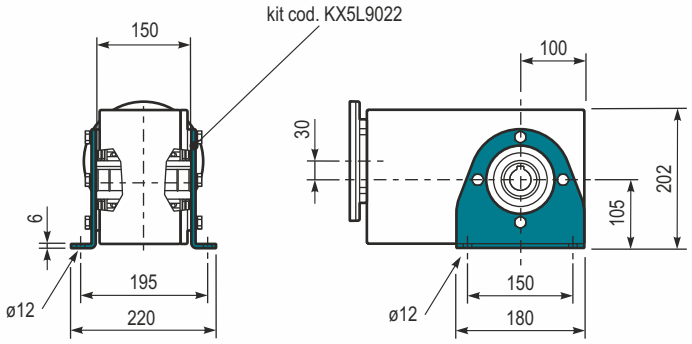
PX62L... **Basic gearbox**
Riduttore base

M. flanges	Kit code	øF	A
80 B14	KI854046	120	255.5
90 B14	KI854045	140	255.5
100-112 B14	KI854041	160	264.5

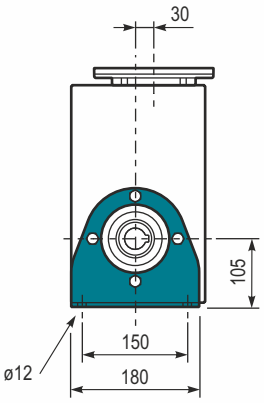
Gearbox weight *Peso riduttore* **19.5 kg**



PX62L**PA**.. **Feet**
Piedini

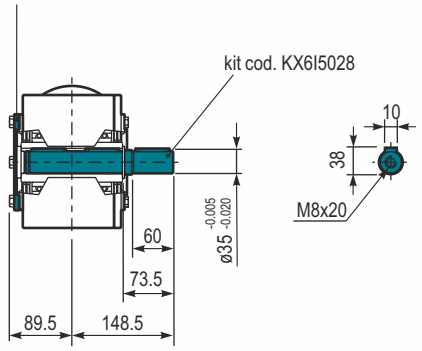


PX62L**PV**.. **Feet**
Piedini

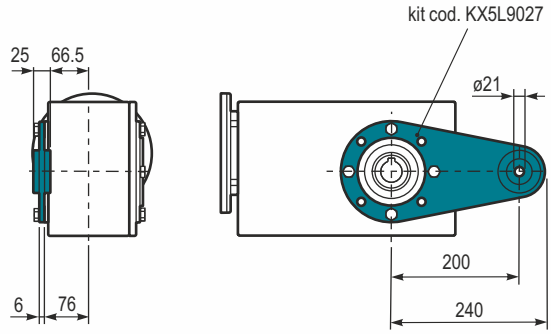


PX62L..**A**.. **Single output shaft**
Albero semplice in uscita

cod. X5L0209
Protection cap (on request)
A richiesta coperchio di protezione



PX62L**BR**.. **Reaction Arm**
Braccio di reazione



Edelstahl

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

This range is ip69K ATEX (on request) CE nsF component certified

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*	
I30	21 Nm	30 mm	0.06 ÷ 0.18 kW	**ø14 mm**	
I45	41 Nm	45 mm	0.12 ÷ 0.37 kW	**ø18 mm**	ø19 mm
I50	72 Nm	50 mm	0.12 ÷ 0.75 kW	**ø25 mm**	ø24 mm
I63	147 Nm	63 mm	0.37 ÷ 1.8 kW	**ø25 mm**	ø28 mm
I85	347 Nm	85 mm	0.55 ÷ 4.0 kW	**ø35 mm**	
I11	651 Nm	110 mm	1.1 ÷ 4.0 kW	**ø42 mm**	

standard

This product is:

ip69K

Ex ATEX (on request)

CE

nsF component

Twin viton seals with stainless steel 316L shield.

Mounting holes on both sides of the housing for versatile mounting.

Output shaft is produced in AISI 316L.
Special cover assures full protection of oil seals.

Closed protection cap in AISI 316L with o-ring.

CuSn12Ni (C91700) Nickel bronze worm gears are centrifugally cast onto an iron hub for maximum strength and superior life. removable hollow shaft with key for safe torque transmissions.

Special high tech full stainless steel housing with accurate finishing and strong rigidity.

I30

21 nm

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	ratios code
							-	-	-O	-p			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	56	63	rd	[mm]	
280	**5**	0.18	5	3.3	0.60	17			B-C		82	1.26	01
200	**7**	0.18	7	2.4	0.44	17			B-C		80	1.44	02
140	**10**	0.18	10	1.8	0.32	17			B-C		78	1.44	03
93	**15**	0.18	13	1.4	0.25	19			B-C		73	1.44	04
70	**20**	0.18	17	1.1	0.20	19			B-C		70	1.09	05
47	**30**	0.12	15	1.4	0.17	21			B-C		62	1.44	06
35	**40**	0.12	19	1.1	0.13	20			B-C		57	1.09	07
23	**61**	0.09	19	1.1	0.10	20			B-C		50	0.72	08
17.5	**80**	0.06	16	1.0	0.06	16			B-C		48	0.56	09
14	**100**	0.06*	16	0.5	0.03	8			B-C		40	0.45	10

*** Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2r}**
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available *Flange motore disponibili*
B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*
B) **Available on request without reduction bushing** *Disponibile a richiesta senza bussola di riduzione*
C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

unit I30 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo I30 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.06Lt. *Quantità olio per tutte le posizioni: 0.06Lt*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

*** For more details on lubrication and plugs check our website.**
** Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.*

Tab. 1

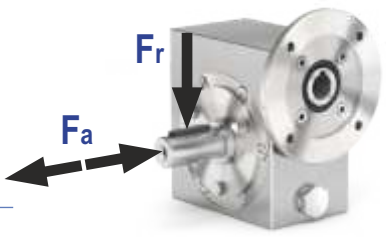
radial and axial loads

Carichi radiali e assiali

Output shaft

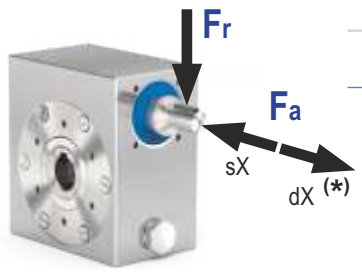
Albero di uscita

n_2 [min^{-1}]	F_A [n]	F_R [n]
200	120	600
150	140	700
100	160	800
75	180	900
50	200	1000
25	250	1250
15	280	1400



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [n]	F_R [n]
1400	20	100

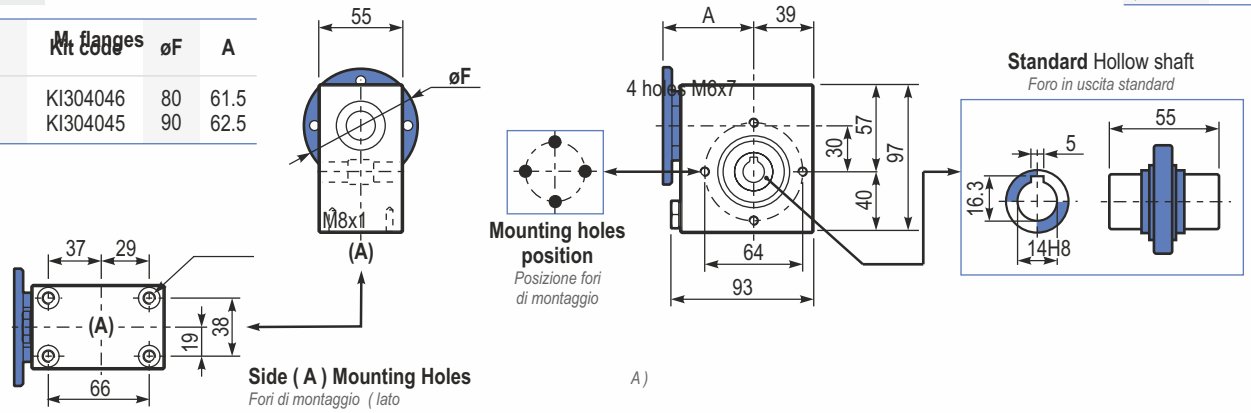
*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

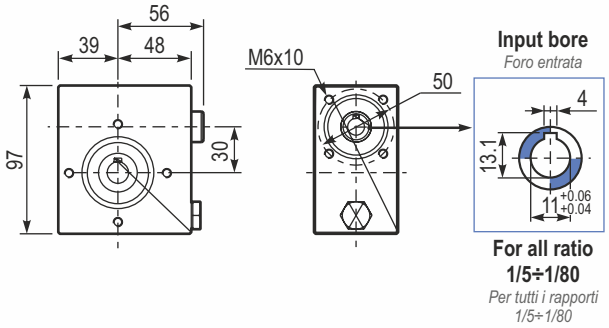
UN... PI Basic gearbox *base*
Riduttore

	M. flanges Kit code	øF	A
56B14	KI304046	80	61.5
63B14	KI304045	90	62.5

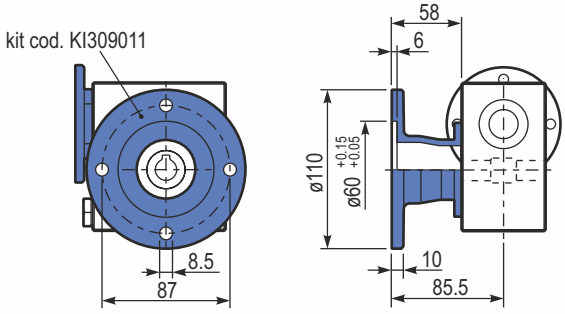
Gearbox weight *peso riduttore* **2.5 kg**



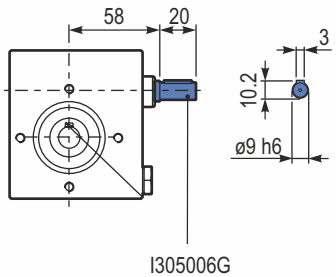
BI30UN... Modular base *modulare* 30
Base



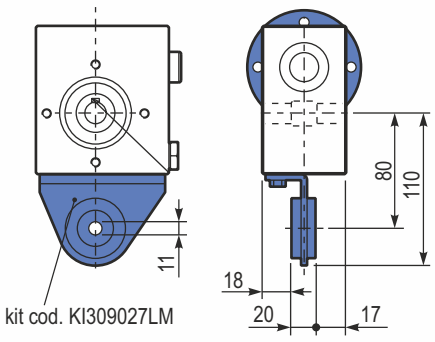
PI30FL... Output flange *uscita* 1
Flangia



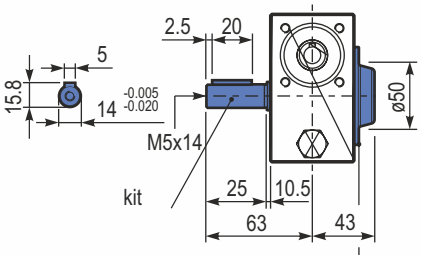
RI30UN... Input shaft *in entrata* 30.....
Albero



PI30BR... Reaction arm *di reazione*
Braccio



SPI... Single Shaft *lento semplice* cod. KI0305028
Albero



kit cod. KI450211
Protection cap (on request) *richiesta coperchio A*
di protezione

Edelstahl

I45

41 nm

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	ratios code
							-	-	-p	-Q			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	63	71	rd	[mm]	
200	**7**	0.37	14	2.2	0.80	30			**B**-c		80	2.2	01
140	**10**	0.37	20	1.5	0.57	30			**B**-c		79	2.2	02
100	**14**	0.37	27	1.1	0.41	30			**B**-c		77	2.4	03
67	**21**	0.37	36	1.2	0.43	41			**B**-c		67	1.6	04
50	**28**	0.25	31	1.3	0.33	41			**B**-c		65	2.5	05
38	**37**	0.25	40	1.0	0.26	41			**B**-c		63	1.8	06
30	**46**	0.25	46	0.9	0.22	41			**B**-c		59	1.5	07
23	**60**	0.18	41	1.0	0.18	41			**B**-c		56	1.2	08
20	**70**	0.12	31	1.0	0.12	30			**B**-c		54	1.0	09
13.7	**102**	0.12	41	0.7	0.09	29			**B**-c		49	0.72	10

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con bussola di riduzione

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication

Lubrificazione

ø

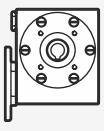
unit I45 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo I45 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip
Telium VSF 320

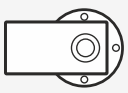
Shell
Omala S4 WE 320

B3
Standard
0.15 LT

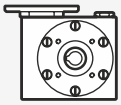
B8
On request
0.15 LT



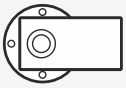
B6
On request
0.15 LT



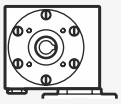
V5
On request
0.15 LT



B7
On request
0.20 IT



V6
On request
0.15 LT



For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

radial and axial loads

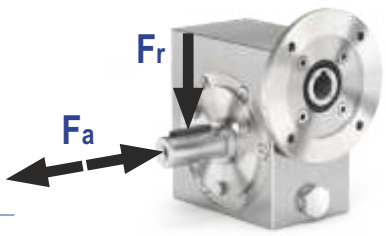
Carichi radiali e assiali

ø

Output shaft

Albero di uscita

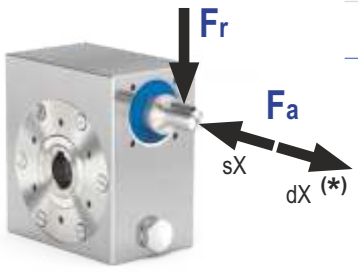
n_2 [min^{-1}]	FA [n]	FR [n]
200	180	900
150	200	1000
100	220	1100
75	240	1200
50	260	1400
25	300	1800
15	400	2000



Input shaft

Albero in entrata

n_1 [min^{-1}]	FA [n]	FR [n]
1400	42	210



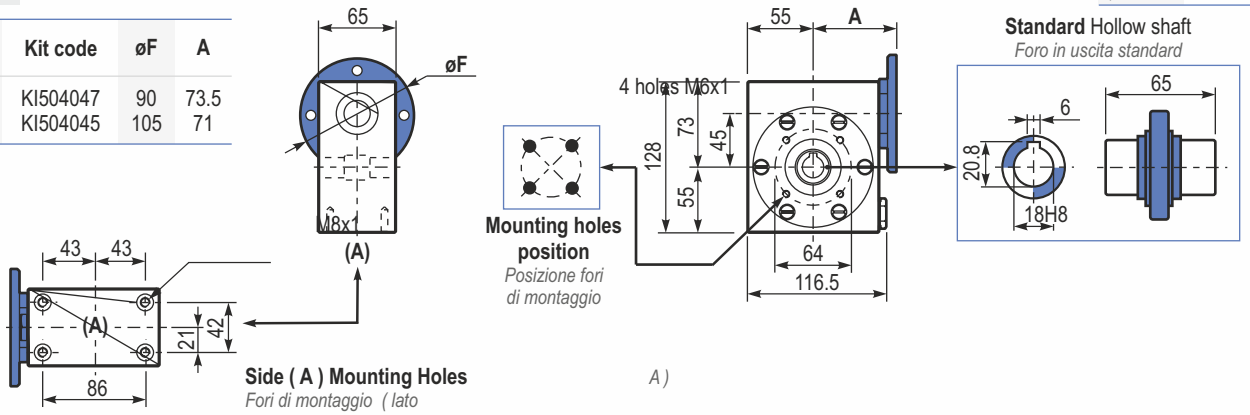
*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

UN... PI **Basic gearbox** *Riduttore* — *base* 1

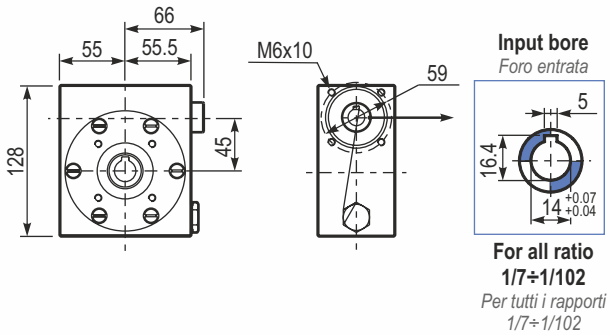
Gearbox weight *peso riduttore* **5.0 kg**

M. flanges	Kit code	øF	A
63B14	KI504047	90	73.5
71B14	KI504045	105	71

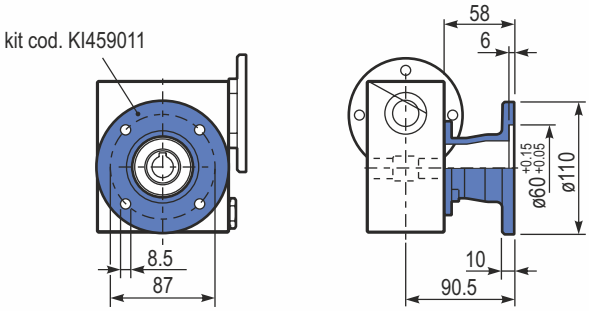


Side (A) Mounting Holes
Fori di montaggio (lato A)

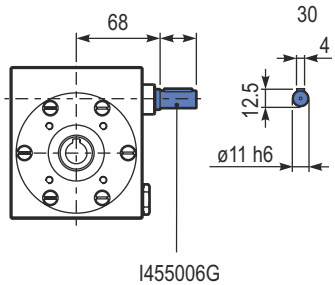
BI45UN... **Modular base** *Base* — *modulare* 45



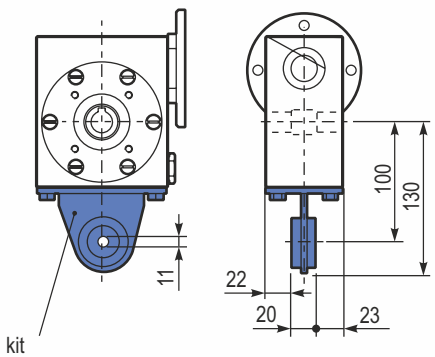
PI45FL... **Output flange** *Flangia* — *uscita* 1



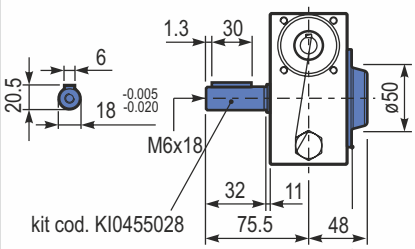
lento semplice **R** 45UN... **Input shaft** *Albero* — *in entrata* 45.....



PI **BR...** **Reaction arm** *Braccio* — *di reazione*



S... PI 45



kit cod. KI450211
Protection cap (on request) *richiesta a*
di protezione cod. KI459

Edelstahl

I50

72 nm

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Dynamic efficiency	Tooth module	ratios code
							-	-	-p	-Q	-r			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	63	71	80	rd	[mm]	
200	**7**	0.75	29	1.9	1.5	57			B-C	**B**		82	2.5	01
140	**10**	0.75	41	1.5	1.1	62			B-C	**B**		80	2.4	02
100	**14**	0.75	57	1.2	0.90	68			B-C	**B**		79	2.6	03
78	**18**	0.55	51	1.2	0.67	62			B-C	**B**		75	2.0	04
54	**26**	0.55	67	1.0	0.54	66			B-C	**B**		69	2.7	05
47	**30**	0.55	79	0.9	0.50	72			B-C	**B**		70	2.5	12
39	**36**	0.37	63	1.2	0.43	72			B-C			69	2.1	06
33	**43**	0.37	72	1.0	0.35	68			B-C			66	1.8	07
28	**50**	0.25	53	1.2	0.31	66			B-C			62	1.5	13
23	**60**	0.25	59	1.0	0.26	62			B-C			58	1.3	08
21	**68**	0.25	66	0.9	0.22	58			B-C			57	1.2	09
17.5	**80**	0.18	53	1.1	0.19	57			B-C			54	1.0	10
14	**100**	0.12	41	1.3	0.15	51			B-C			50	0.8	11

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con bussola di riduzione

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

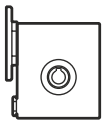
Lubrication

Lubrificazione

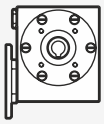
unit I50 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo I50 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip	**Shell**
Telium VSF 320	*Omala S4 WE 320*

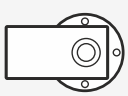
B3
Standard
0.22 IT



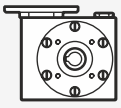
B8
On request
0.22 IT



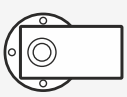
B6
On request
0.22 IT



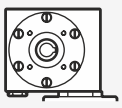
V5
On request
0.22 IT



B7
On request
0.28 LT



V6
On request
0.22 IT



For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

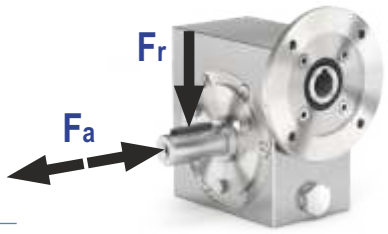
radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

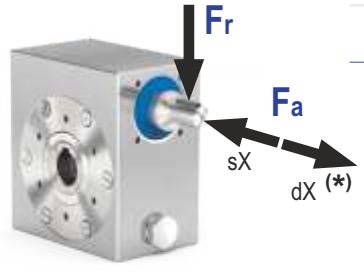
n_2 [min^{-1}]	F_A [n]	F_R [n]
200	240	1200
150	280	1400
100	300	1500
75	340	1700
50	380	1900
25	480	2500
15	560	2800



Input shaft

Albero in entrata

n_1 [min^{-1}]	F_A [n]	F_R [n]
1400	76	380



*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

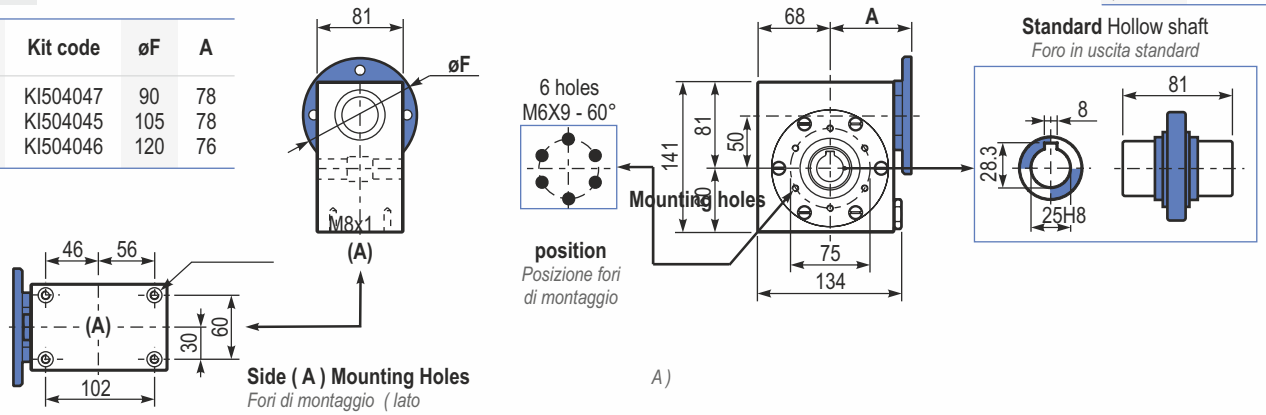
Tab. 2

Edelstahl

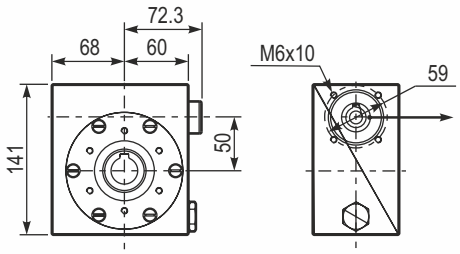
UN... PI Basic gearbox
Riduttore *base*

Gearbox weight *peso riduttore* 7.3 kg cod. KI500211

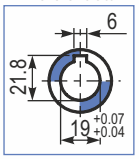
M. flanges	Kit code	øF	A
63B14	KI504047	90	78
71B14	KI504045	105	78
80B14	KI504046	120	76



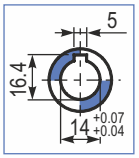
BI50UN... Modular base
Base *modulare* 50



Input bore
Foro entrata

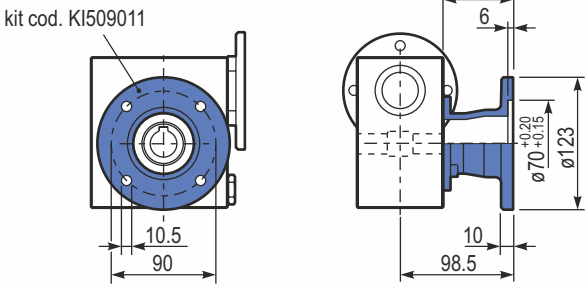


From 1/7 to 1/30
Dal 1/7 al 1/30

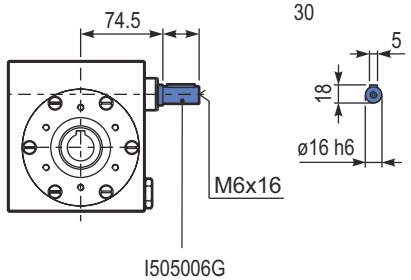


From 1/36 to 1/100
Dal 1/36 al 1/100

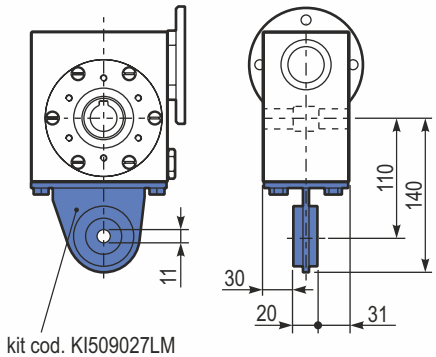
PI50FL... Output flange
Flangia *uscita* 1



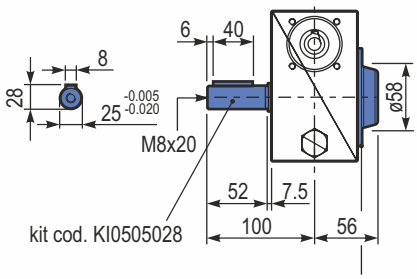
R 50UN... Input shaft
lento semplice *Albero* *in entrata* 50....



PI BR... Reaction arm
Braccio *di reazione*



SPI50



kit
Protection cap
(on request)
A richiesta coperchio di protezione

Edelstahl

I63

147 nm

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Dynamic efficiency	Tooth module	ratios code
							-	-	-Q	-r	-T			
n_2 [min^{-1}]	i	p_{1M} [kw]	M_{2M} [Nm]	f.s	p_{1R} [kw]	M_{2r} [Nm]	-	-	71	80	90	rd	[mm]	
200	**7**	1.8	71	1.8	3.2	125			B-C	**B**-c		83	3.1	01
140	**10**	1.8	99	1.4	2.4	134			B-C	**B**-c		81	3.1	02
93	**15**	1.5	121	1.1	1.7	138			B-C	**B**-c		79	3.1	03
74	**19**	1.1	111	1.2	1.4	138			B-C	**B**-c		78	2.6	04
58	**24**	1.1	135	1.0	1.2	142			B-C	**B**-c		75	2.0	05
47	**30**	1.1	167	0.9	0.96	146			B-C	**B**-c		74	3.2	06
39	**36**	0.75	125	1.2	0.88	147			B-C	**B**-c		68	2.7	07
35	**40**	0.75	135	1.0	0.78	140			B-C	**B**-c		66	2.5	13
31	**45**	0.55	111	1.2	0.67	135			B-C	c		66	2.1	08
23	**60**	0.55	140	0.9	0.51	130			B-C	c		62	1.6	12
21	**67**	0.55	151	0.8	0.45	124			B-C	c		60	1.5	09
17.5	**80**	0.37	115	1.0	0.38	119			B-C	c		57	1.3	10
14.9	**94**	0.37	123	1.0	0.36	119			B-C	c		52	1.1	11

Motor flanges available
Flange motore disponibili

B) **Supplied with reduction bushing**
Fornito con bussola di riduzione

B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

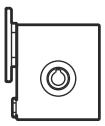
Lubrication
Lubrificazione

unit I63 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo I63 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

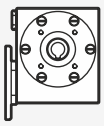
Agip
Telium VSF 320

Shell
Omala S4 WE 320

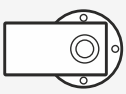
B3
Standard
0.60 IT



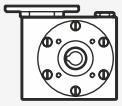
B8
On request
0.60 IT



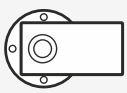
B6
On request
0.60 IT



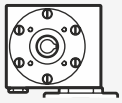
V5
On request
0.60 IT



B7
On request
0.82 LT



V6
On request
0.60 IT



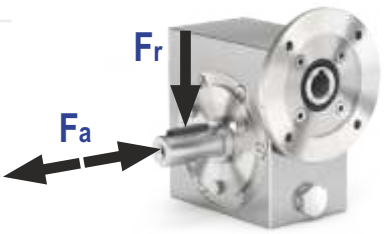
For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

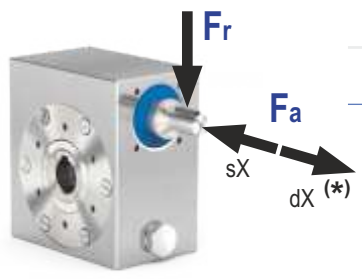
radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	FA [n]	FR [n]
200	360	1800
150	400	2000
100	460	2300
75	500	2500
50	600	3000
25	700	3800
15	800	4000



Input shaft
Albero in entrata



n_1 [min^{-1}]	FA [n]	FR [n]
1400	90	450

*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

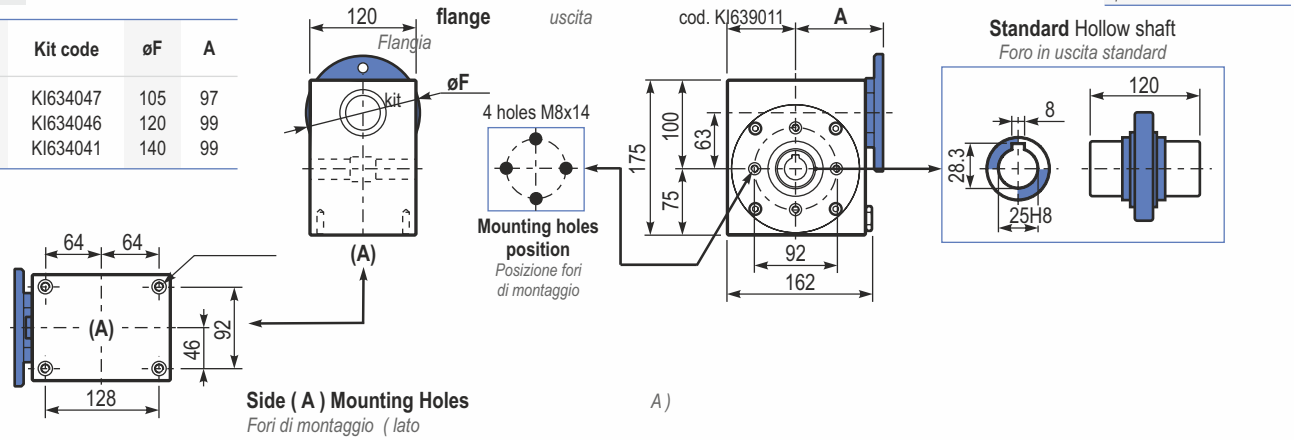
Tab. 2

UN... Basic gearbox
Riduttore

base PI

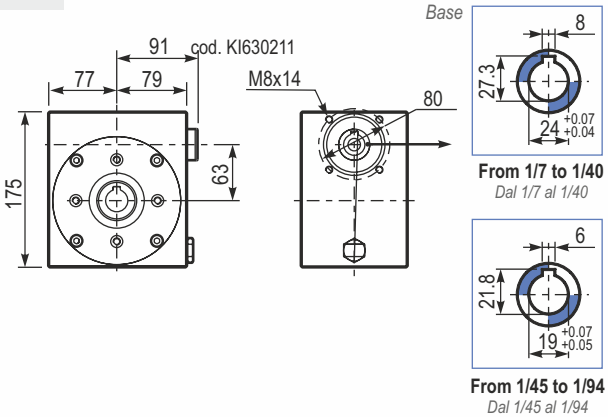
M. flanges	Kit code	øF	A
71B14	KI634047	105	97
80B14	KI634046	120	99
90B14	KI634041	140	99

Gearbox weight *peso riduttore* **14.6 kg**

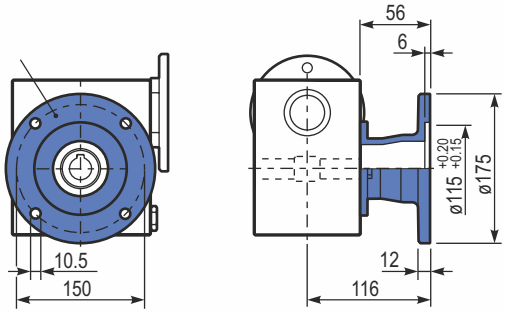


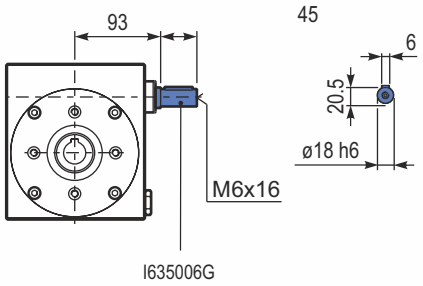
Side (A) Mounting Holes
Fori di montaggio (lato A)

BI63UN... Modular

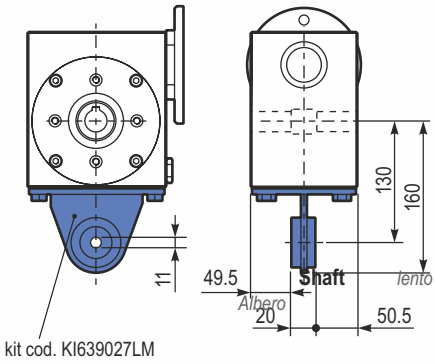


R63FL... Output



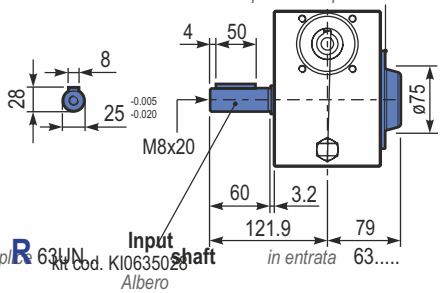


PI BR... Reaction arm
Braccio di reazione



S... Single
63

kit
Protection cap (on request)
A richiesta coperchio di protezione



R 63UN...
lento semplice

Edelstahl

I85

347 Nm

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges			B14 motor flanges		Dynamic efficiency	Tooth module	Ratios code
							- -	- -	--U - 190-112-	-R 80	-T 90			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]						RD	[mm]	
200	**7**	4.0	168	1.5	6.1	257				B	B	88	4.23	01
140	**10**	4.0	218	1.3	5.2	284				B	B	80	4.2	02
100	**14**	3.0	223	1.4	4.1	305				B	B	78	4.5	03
70	**20**	2.2	237	1.2	2.7	294				B	B	79	3.4	04
64	**22**	2.2	258	1.1	2.5	294				B	B	78	3.1	05
50	**28**	2.2	315	1.1	2.4	347				B	B	75	4.7	06
37	**38**	1.5	276	1.2	1.8	336				B		71	3,5	07
30	**46**	1.5	320	1.0	1.5	326				B		68	3.1	08
27	**52**	1.1	258	1.1	1.2	289				B		66	2.7	09
21	**67**	1.1	327	0.9	0.97	289				B		65	2.1	10
18.9	**74**	0.75	220	1.2	0.91	268				B		58	1.9	11
14.6	**96**	0.55	191	1.3	0.70	242				B		53	1.5	12

Motor flanges available *Flange motore disponibili*

B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*

B) Available on request without reduction bushing *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

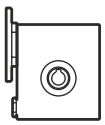
Lubrication

Lubrificazione

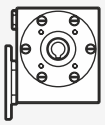
Unit I85 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo I85 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip	**Shell**
Telium VSF 320	*Omala S4 WE 320*

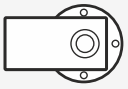
B3 *Standard* 1.40 LT



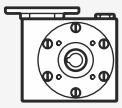
B8 *On request* 1.40 LT



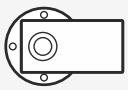
B6 *On request* 1.40 LT



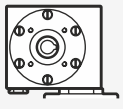
V5 *On request* 1.40 LT



B7 *On request* 1.70 LT



V6 *On request* 1.40 LT



For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

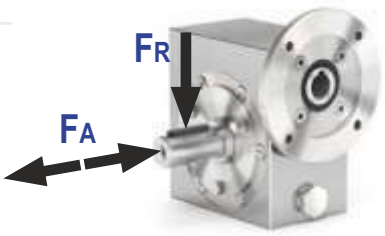
Radial and axial loads

Carichi radiali e assiali

Output shaft

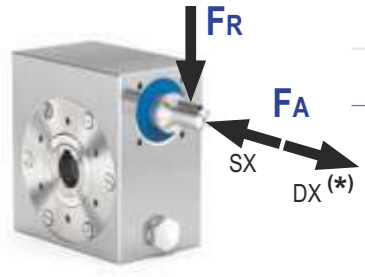
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
200	500	2500
150	580	2900
100	600	3000
75	700	3500
50	800	4000
25	1000	5000
15	1160	5800



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	130	650

*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

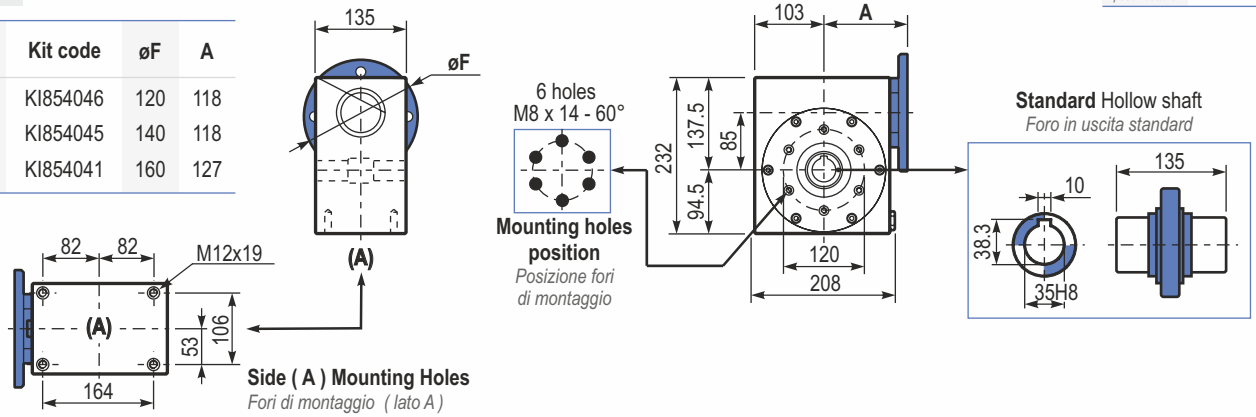
Tab. 2

Edelstahl

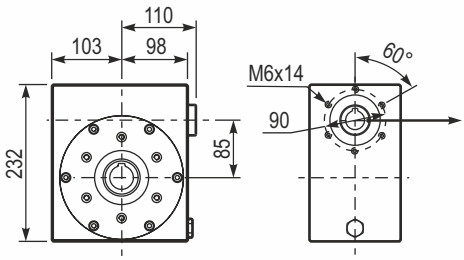
PI85UN... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	118
90B14	KI854045	140	118
100-112B14	KI854041	160	127

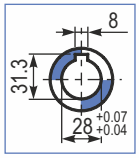
Gearbox weight *peso riduttore* 23.3 kg



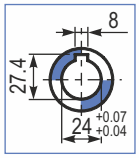
BI85UN... Modular base
Base modulare



Input bore
Foro entrata

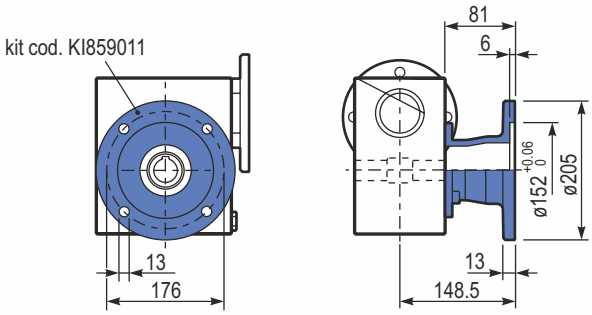


From 1/7 to 1/28
Dal 1/7 al 1/28

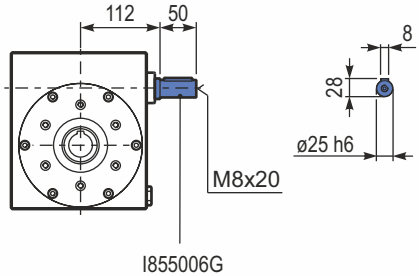


From 1/38 to 1/96
Dal 1/38 al 1/96

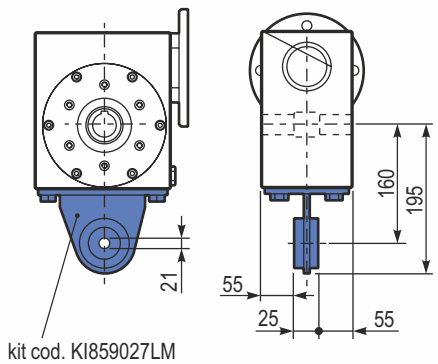
PI85FL... Output flange
Flangia uscita



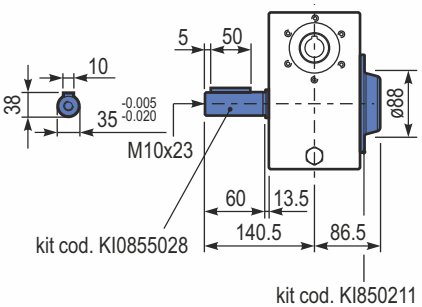
RI85UN... Input shaft
Albero in entrata



PI85BR... Reaction arm
Braccio di reazione



PI85.....S... Single Shaft
Albero lento semplice



kit cod. KI850211
Protection cap (on request)
A richiesta coperchio di protezione

Edelstahl

I11 — 651 Nm

EDELSTAHL - Schneckengetriebe

Full stainless steel worm gearboxes

Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges	B14 motor flanges			Dynamic efficiency	Tooth module	Ratios code
							- - - - - - - -	-R	-T	-U			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]		80	90	100-112	RD	[mm]	
200	**7**	4.0	168	2.9	11.5	483		B	B		88	5.5	01
140	**10**	4.0	235	2.2	9.0	525		B	B		86	5.4	02
88	**16**	4.0	358	1.5	6.0	536		B	B		82	5.3	03
70	**20**	4.0	447	1.2	4.9	546		B	B		82	4.5	04
61	**23**	3.0	377	1.4	4.1	515		B	B		80	3.9	05
47	**30**	3.0	467	1.4	4.2	651		B	B		76	5.6	06
37	**38**	3.0	583	1.1	3.3	641		B	B		75	4.7	07
31	**45**	2.2	493	1.2	2.7	599		B	B		73	4.0	08
26	**53**	2.2	557	1.1	2.5	620		B	B		70	3.5	09
22	**64**	1.5	452	1.2	1.8	536		B			69	2.9	10
16.7	**84**	1.1	410	1.2	1.3	494		B			65	2.2	11
14.1	**99**	1.1	446	1.1	1.2	483		B			60	1.9	12

Motor flanges available *Flange motore disponibili*

B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*

B) Available on request without reduction bushing *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

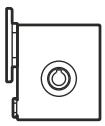
Lubrication

Lubrificazione

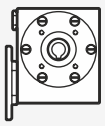
Unit I11 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo I11 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip	**Shell**
Telium VSF 320	*Omala S4 WE 320*

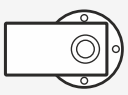
B3 *Standard* 3.50 LT



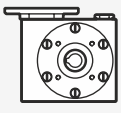
B8 *On request* 2.10 LT



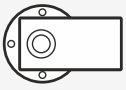
B6 *On request* 2.50 LT



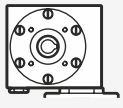
V5 *On request* 1.60 LT



B7 *On request* 2.50 LT



V6 *On request* 1.60 LT



For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

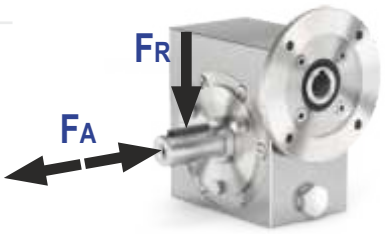
Radial and axial loads

Carichi radiali e assiali

Output shaft

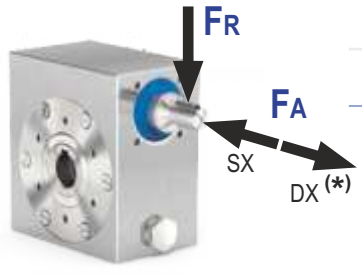
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
200	600	2900
150	700	3300
100	750	3600
75	800	4000
50	920	4600
25	1200	6000
15	1400	7000



Input shaft

Albero in entrata



n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	228	1140

*** Strong axial loads in the DX direction are not allowed.**
** Non sono consentiti forti carichi assiali con direzione DX*

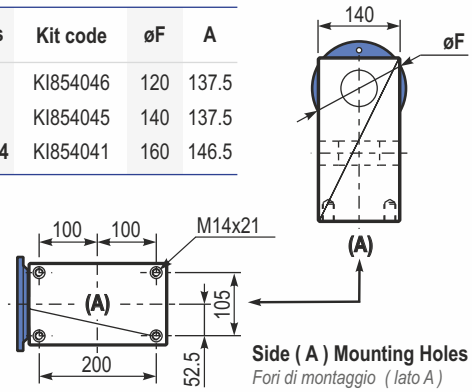
Tab. 2

Edelstahl

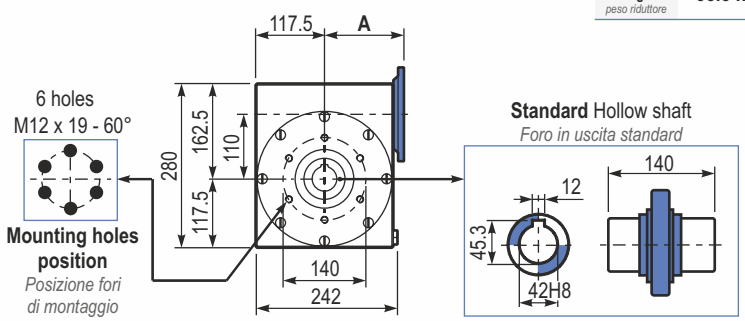
PI11UN... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	137.5
90B14	KI854045	140	137.5
100-112B14	KI854041	160	146.5

Gearbox weight *peso riduttore* 38.5 kg

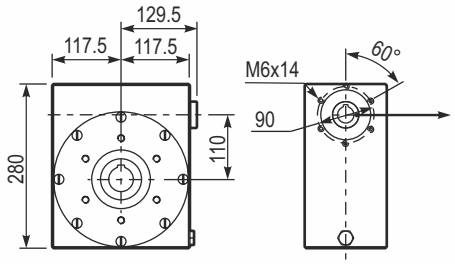


Side (A) Mounting Holes
Fori di montaggio (lato A)

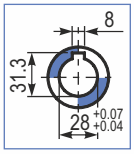


Mounting holes position
Posizione fori di montaggio

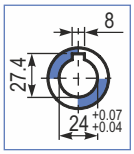
BI11UN... Modular base
Base modulare



Input bore
Foro entrata

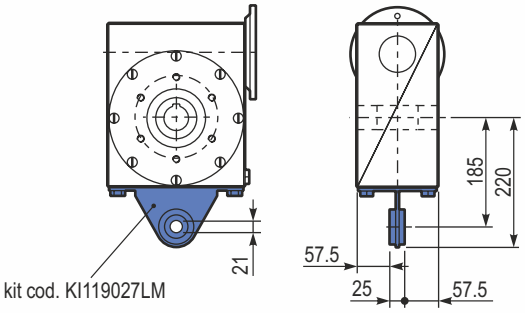


From 1/7 to 1/53
Dal 1/7 al 1/53

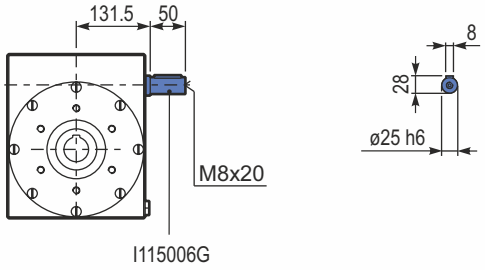


From 1/64 to 1/99
Dal 1/64 al 1/99

PI11BR... Reaction arm
Braccio di reazione



RI11UN... Input shaft
Albero in entrata



Edelstahl

EDELSTAHL - Stirnradstufe

Stainless steel shielded ratio multipliers

This range is CE nsF component certified

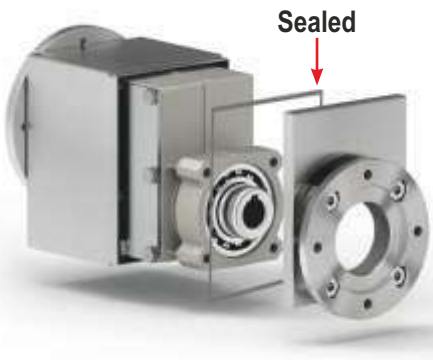
EDELSTAHL - Stirnradstufe

Stainless steel shielded ratio multipliers

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*
411L	38 Nm	38 mm	0.37 ÷ 1.5 kW	ø19 mm
511L	110 Nm	50 mm	1.1 ÷ 4.0 kW	ø28 mm

This product is:

CE nsF component

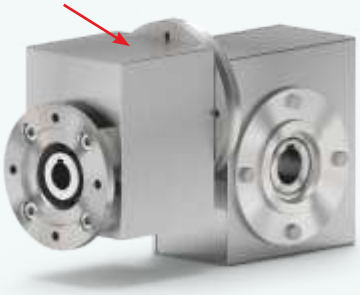


The “L” series is an already totally enclosed aluminum gearboxes, that is shielded and sealed by stainless steel 316L case.

Output shaft is produced in AISI 316L.

Fully modular IEC flanges and compact NEMA C motor flanges.

Standard FPM (fkm) seals are used, since seals will be in a closed area.



Hardened and ground gears.

411L

38 Nm

EDELSTAHL - Stirnradstufe

Stainless steel shielded ratio multipliers

The dynamic efficienty is **0.98** for all ratios

Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges				Output shaft	Ratios code
							-	-	-Q	-R	-T			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	71	80	90			
891	**1.57**	1.5	16	1.3	1.9	20			C	C		2844		01
493	**2.84**	1.5	28	1.2	1.8	35			C	C		1954		02
425	**3.29**	1.5	33	1.2	1.7	38			C	C		1756		03
362	**3.87**	1.5	39	1.0	1.5	40			C	C		1558	standard	04
303	**4.62**	1.5	46	1.0	1.5	47			C	C		1360	ø19	05
222	**6.30**	1.1	46	1.0	1.1	46			C	C		1063		06
170	**8.22**	0.55	30	1.3	0.69	38			C	C		974		07
129	**10.86**	0.37	27	1.0	0.39	28			C	C		776		08

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) Motor flange holes position
Posizione fori flangia motore

Lubrication

Lubrificazione

Unit 411L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 411L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.10Lt. *Quantità olio per tutte le posizioni: 0.10Lt*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

Radial and axial loads

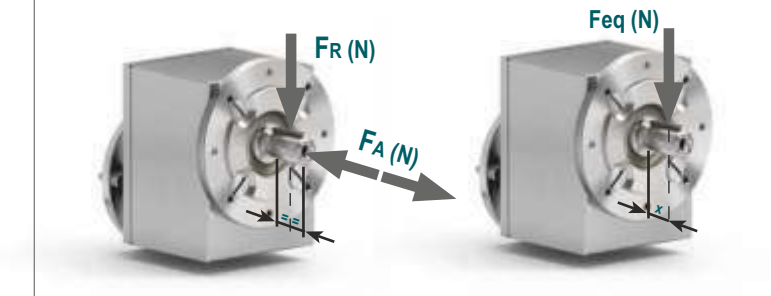
Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
700	182	910
600	200	1000
400	230	1150
300	250	1250
200	290	1450
140	320	1600

$$Feq = F_R \cdot \frac{41}{X + 21}$$



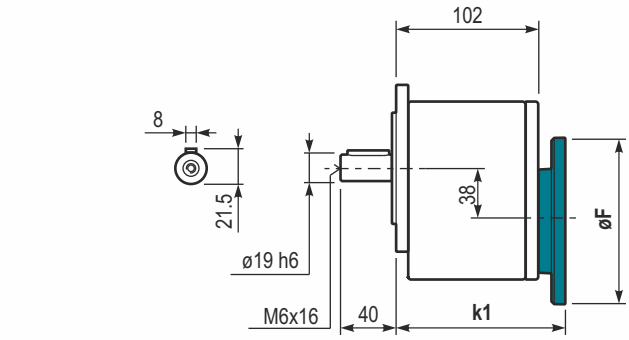
Tab. 2

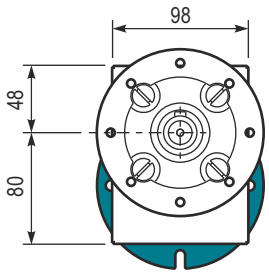
P411L-F...

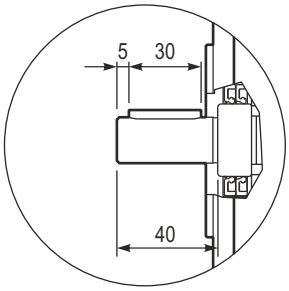
Basic gearbox
Riduttore base

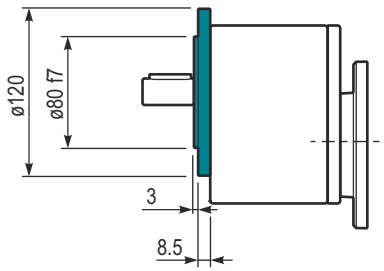
Gearbox weight *Peso riduttore*	5.0 kg

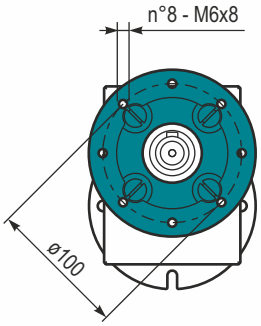
M. flanges	Kit code	øF	k1
71 B14	KI634047	105	120
80 B14	KI634046	120	122
90 B14	KI634041	140	122











Edelstahl

511L

110 Nm

EDELSTAHL - Stirnradstufe

Stainless steel shielded ratio multipliers

The dynamic efficienty is **0.98** for all ratios — **Input speed (n_1) = 1400 min^{-1}**

Output speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges - - - - - - - -	B14 motor flanges -R 80	-T 90	-U 100-112		Output shaft	Ratios code
1077	**1.30**	4	34	1.2	4.6	40					3039	standard ø28	01
571	**2.45**	4	64	1.1	4.3	70					2049		02
423	**3.31**	4	87	1.0	4.1	90					1653		03
325	**4.31**	4	113	1.0	3.8	110					1356		04
266	**5.27**	3	104	1.1	3.1	110					1158		05
184	**7.63**	2.2	111	1.0	2.2	110					861		06
133	**10.50**	1.1	77	1.0	1.1	80					663		07

Motor flanges available *Flange motore disponibili*

B) **Supplied with reduction bushing** *Fornito con bussola di riduzione*

B) **Available on request without reduction bushing** *Disponibile a richiesta senza bussola di riduzione*

C) **Motor flange holes position** *Posizione fori flangia motore*

Lubrication

Lubrificazione

Unit 511L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 511L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.29Lt. *Quantità olio per tutte le posizioni: 0.29Lt*	**Agip** *Telium VSF 320*	**Shell** *Omala S4 WE 320*

Tab. 1

Radial and axial loads

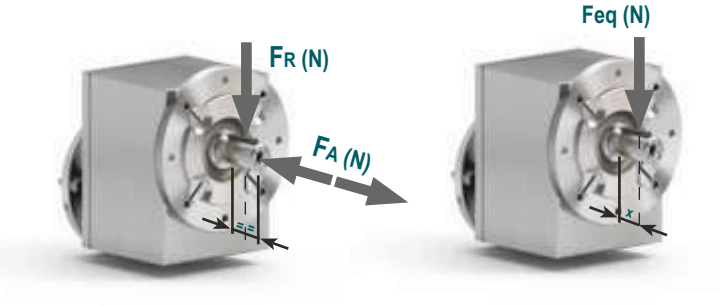
Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
700	294	1470
600	320	1600
400	370	1850
300	400	2000
200	460	2300
140	510	2550

$$Feq = F_R \cdot \frac{47.5}{X + 22.5}$$

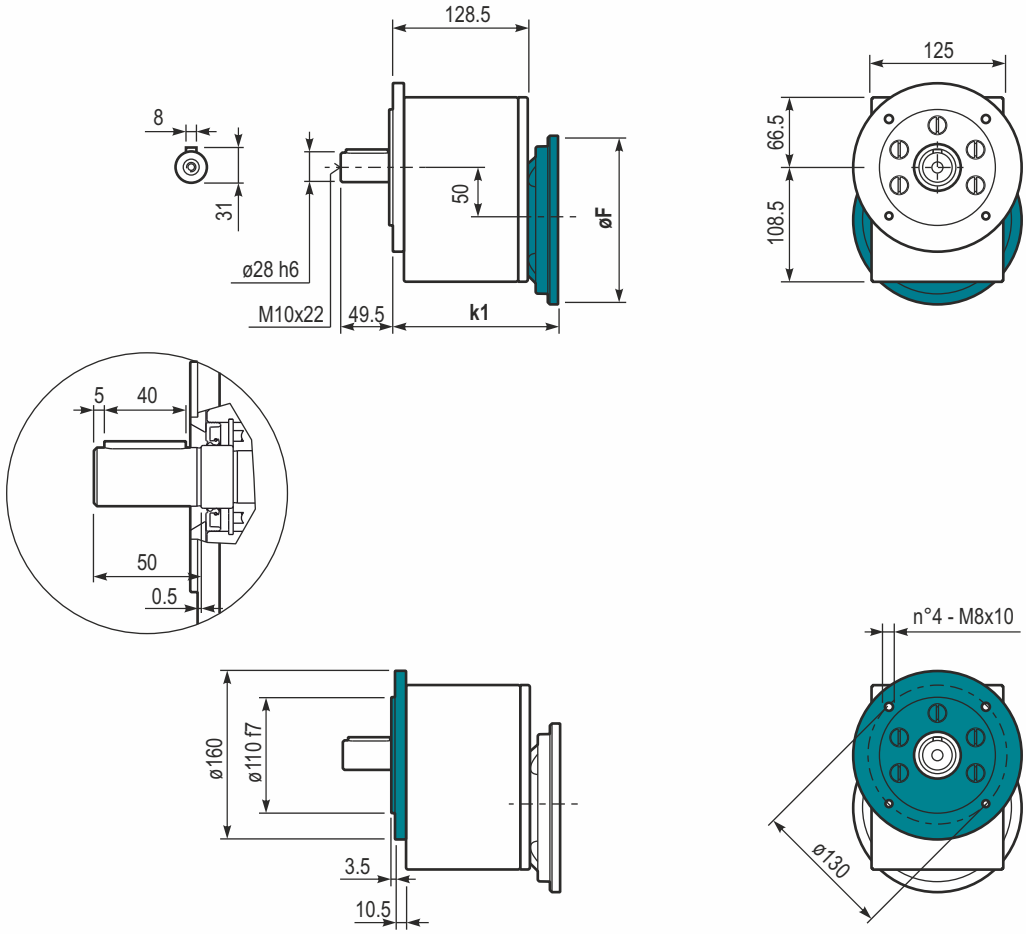


Tab. 2

P511L-**F**... **Basic gearbox**
Riduttore base

Gearbox weight *Peso riduttore*	9.0 kg

M. flanges	Kit code	øF	k1
80 B14	KI854046	120	148.5
90 B14	KI854045	140	148.5
100-112 B14	KI854041	160	157.5



EDELSTAHL - Koaxialgetriebe

stainless steel shielded coaxial gearboxes

This range is CE nsF component certified

EDELSTAHL - Koaxialgetriebe

Stainless steel shielded coaxial gearboxes

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*
402L	160 Nm	-	0.37 ÷ 1.5 kW	ø25 mm
602L	520 Nm	-	1.1 ÷ 4.0 kW	ø35 mm

This product is:

CE NSF COMPONENT

The “L” series is an already totally enclosed aluminum gearboxes, that is shielded and sealed by stainless steel 316L case.

Output shaft is produced in alsl 316L.

Fully modular IEC flanges and compact NEMA C motor flanges.

Standard FPM (fkm) seals.

Hardened and ground gears.

Edelstahl

402L — 160 Nm

EDELSTAHL - Koaxialgetriebe

Stainless steel shielded coaxial gearboxes

The dynamic efficienty is **0.96** for all ratios

Input speed (n_1) = 1400 min^{-1}

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges				Output shaft	Ratio code
							-	-	-Q	-R	-T			
							-	-	71	80	90			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]								
398	**3.52**	1.5	34	2.3	3.5	80			C	C		2821		01
321	**4.37**	1.5	43	2.1	3.1	90			C	C		2818		02
252	**5.56**	1.5	54	1.8	2.7	100			C	C		2813		03
220	**6.36**	1.5	62	1.5	2.3	95			C	C		1921		04
191	**7.33**	1.5	72	1.7	2.5	120			C	C		2812		05
177	**7.89**	1.5	77	1.6	2.3	120			C	C		1918		06
139	**10.06**	1.5	99	1.5	2.3	150			C	C		1913		08
120	**11.66**	1.5	114	1.5	2.3	174			C	C		1713		09
106	**13.26**	1.5	130	1.2	1.8	160			C	C		1912		10
102	**13.68**	1.5	134	1.1	1.6	144			C	C		1513		25
91	**15.37**	1.5	151	1.1	1.6	160			C	C		1712		11
86	**16.20**	1.5	159	0.9	1.3	138			C	C		1910	**Standard ø25**	12
78	**18.04**	1.5	177	0.9	1.4	160			C	C		1512		23
75	**18.78**	1.1	134	1.0	1.1	138			C	C		1710		24
65	**21.54**	1.1	154	1.0	1.1	160			C	C		1312		14
63	**22.29**	1.1	160	1.0	1.1	167			C	C		1013		15
53	**26.31**	0.75	129	1.1	0.80	138			C	C		1310		16
47.6	**29.40**	0.75	144	1.1	0.83	160			C	C		1012		17
39	**35.91**	0.55	130	1.1	0.59	138			C	C		1010		18
36.5	**38.37**	0.55	139	1.2	0.64	160			C	C		912		19
29.9	**46.87**	0.55	170	0.8	0.45	138			C	C		910		20
27.6	**50.67**	0.37	123	1.1	0.40	132			C	C		712		21
22.6	**61.89**	0.37	150	0.9	0.34	138			C	C		710		22

Motor flanges available
Flange motore disponibili

B) *Fornito con bussola di riduzione*

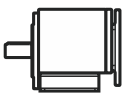
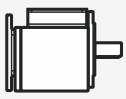
B) **Available on request without reduction bushing**
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Always specify the mounting position
Specificare sempre la posizione di montaggio

Unit 402L is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.
Il riduttore tipo 402L viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip *Telium VSF 320*	**Shell** *Omala S4 WE 320*		
B3 *Standard* 0.25 LT		**B8** *On request* 0.40 LT	
B6 *On request* 0.30 LT		**V5** *On request* 0.40 LT	
B7 *On request* 0.40 LT		**V6** *On request* 0.50 LT	
		V8 *On request* ASK	

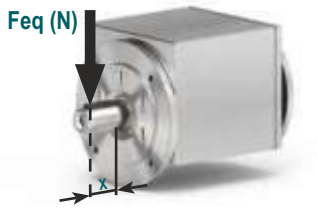
Tab. 1

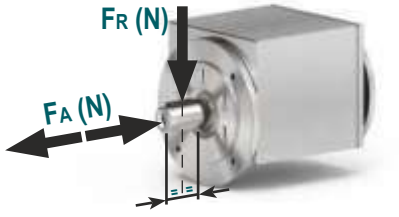
Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N] X = 21
300	310	1550
250	330	1650
200	360	1800
140	406	2030
120	448	2240
85	480	2400
70	540	2700
40	600	3000
15	600	3000

$$Feq = F_R \cdot \frac{51}{X + 21}$$





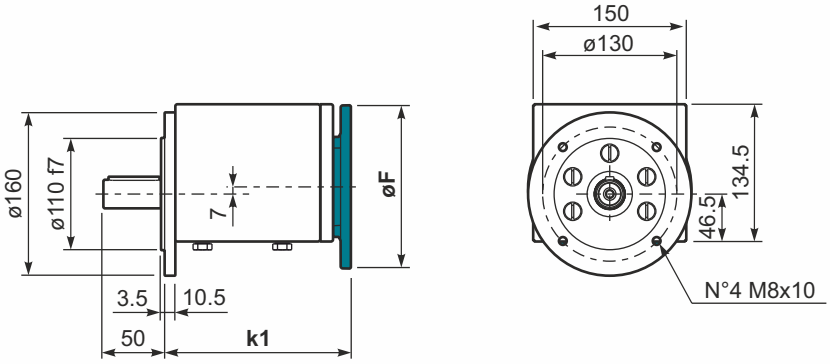
Tab. 2

P402L-**F**..

Basic gearbox
Riduttore base

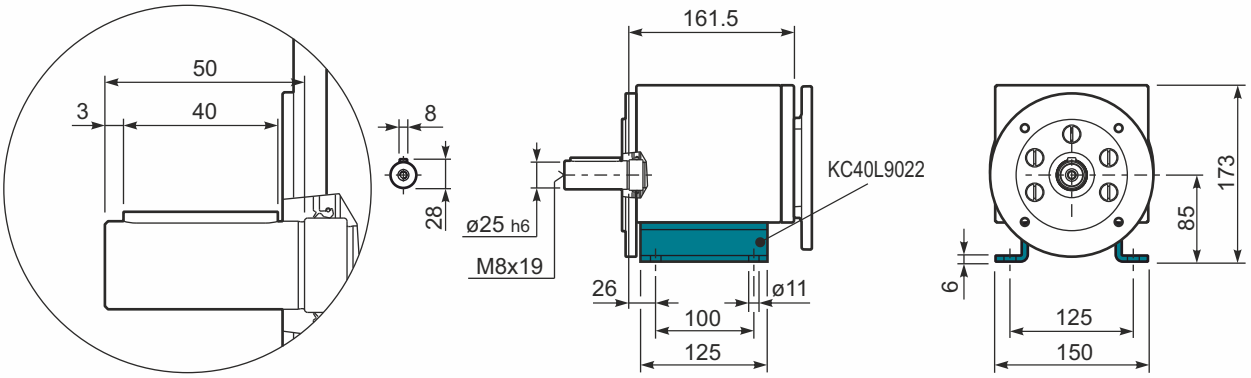
M. flanges	Kit code	øF	k1
71B14	KI634047	105	179.5
80B14	KI634046	120	180.5
90B14	KI634041	140	181.5

Gearbox weight *Peso riduttore* **9.2 kg**



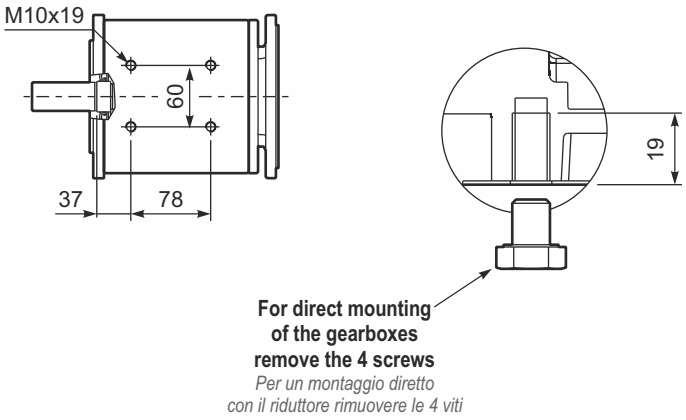
P402L**H1**..

Feet
Piedini



P402L-**F**..

Basic gearbox
Riduttore base



Geber
encoder

Geber / Encoder für Edelstahl- und Aluminiummotore

	Spezifikation
Impulse	1-1024 (6000 upm) oder 1-2048 (3000 upm)
Ausgangssignal	A, B, -A, -B
Ausgangsspannung	10-24Vdc und 5Vdc TTL
IEC Baugröße	56 bis 112
Motorbauform	IEC B14
Material	Edelstahl AISI 316L oder Aluminium
Schutzart	IP 69K
Flanschtiefe	7mm bis 15mm. Baugrößenabhängig
Kabellänge	2m abgeschirmtes Kabel. Andere Längen und Steckverbindungen sind auf Anfrage lieferbar
Anschlussspannung	5Vdc bis 24Vdc
Max. Impulsfrequenz	≤100 kHz
Ausgangssignal	Rechteckimpuls
Signal level	$U_{high} \geq U_b - 0.7V$ bei $L_{last} \leq 10$ mA $U_{low} \leq U_b - 0.7V$ bei $L_{last} \leq 10$ mA
Ausgangskapazität	≤ 30mA bei U_b = 10Vdc ≤ 20mA bei U_b = 24Vdc
Schaltungsrichtung	NPN / PNP
Umgebungstemperatur	-30°C bis 100°C
Anschlusskabel	PUR 6 x 0.14 abgeschirmt (A, B, -A, -B) Länge: 2m lichtes Maß
Platzsparende und schützende Montage zwischen Motor und Getriebe mit epoxidharzgedichteter Encoder-Elektronik	

Sonderlösungen I Motore I Frequenzumrichter I Gehäuse

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SONDERLÖSUNGEN Edelstahl - Nicht standartisiertes Design und Zubehör

SPECIAL SOLUTIONS stainless steel - Non standard designs and accessories

Beispielhafte Modelländerungen/-erweiterungen

- Spannung und Frequenz / Non standard voltage and frequency
- Montageanordnung / Mounting arrangement B35, B34
- Montageanordnung mit seitlichem Anschlusskasten / B3 mounting arrangement with lateral terminal box
- Zweite Endwelle / Second end shaft
- Erhöhte Isolationsschutzklasse (ISO) / Aincreased insulation protection class
- PT100-Sonden, Antikondensationsheizung / PT100 probes, anticondensation heaters
- Verlängerte Antriebswelle / extended drive shaft
- Sonderwellenmaße / Special shaft dimensions
- Sonderlackierung / Special painting
- Sonderflansch / special flange

- weitere Sonderlösungen jederzeit auf Anfrage

Keine passende Standardlösung gefunden? Für uns gar kein Problem!
Bei uns erhalten Sie Ihre individuelle, maßgeschneiderte Edelstahllösung
für Ihre speziellen Anforderungen.

- Ihre Sonderlösung ist unser Standard -

No suitable standard solution found? No problem for us!
With us you get your individual, customized stanless steel solution
for your special requirements.

- Your special solution is our standard -

Frequenzumrichter zum Einbau in Edelstahlgehäuse

Frequency inverter for installation in stainless steel housing

Im Folgenden finden Sie einen Ausschnitt unserer Frequenzumrichter samt technischer Daten, die nach Ihren individuellen Wünschen und Bedürfnissen sowie Gegebenheiten Ihrer Anlage in Edelstahlgehäuse eingebaut werden können.

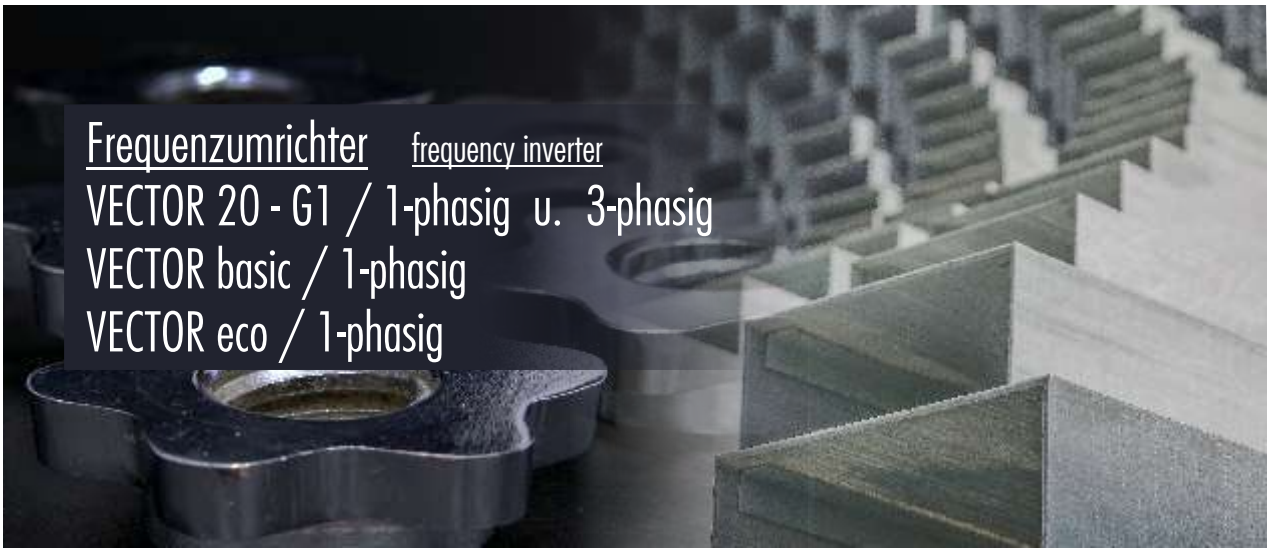
Die fotografischen Abbildungen sind nur beispielhafte Darstellungen von technischen Umsetzungen der verschiedenen Modelle. Weitere Bauarten der Frequenzumrichter zum Einbau in Edelstahlgehäuse, lassen sich individuell auf Ihre Bedürfnisse und Anfrage umsetzen.

Below you will find a selection of our frequency inverters, including technical data, which islisted below. Your individual wishes and needs as well as the conditions of your system in stainless steel housing can be installed.

The photographic illustrations are only examples of technical implementations of the different models. Other types of frequency inverters for installation in stainless steel housings, can be installed individually to your needs.

Beispielhafte Abbildung eines kundenspezifischen Edelstahlgehäuses für einen Frequenzumrichter.

Exemplary illustration of a custom stainless steel housing for a frequency inverter.



Frequenzumrichter VECTOR 20 - G1

Frequenzumrichter VECTOR 20

Bei dem VECTOR *20 - G1* handelt es sich um einen Frequenzumrichter mit integrierter Vectorregelung. Durch seinen modularen Aufbau sorgt er für ein optimales Preis- Leistungsverhältnis. Durch die Verwendung von Zusatzmodulen erlangt der VECTOR 20 - G1 Eigenschaften, die einen geregelten Antrieb mit dynamischen AC-Servomotoren oder Positionierungsaufgaben erlauben.

Der Frequenzumrichter VECTOR 20 - G1 ist in folgenden Varianten erhältlich
- 0,09 KW bis 2,2 KW 1-phasig (230 V)
- 0,75 KW bis 3 KW 3-phasig (400 V)

Folgende aufsteckbaren Zusatzmodule sind erhältlich:

Aufsteckbares mehrsprachiges Klartext - Bedieninterface

WICHTIG:

Die Abmessungen des Edelstahlgehäuses variieren je nach individuell erstelltem Gehäuse und Maß.

IMPORTANT:

The dimensions of the stainless steel housing vary depending on the individually created housing and dimension.

Frequenzumrichter VECTOR 20 - G1

Typ	Vector 90	Vector 120	Vector 180	Vector 250	Vector 370
Ausgangleistung	0,2 kVA	0,25 kVA	0,35 kVA	0,45 kVA	0,85 kVA
Motorleistung	0,09 kW	0,12 kW	0,18 kW	0,25 kW	0,37 kW
Nennstrom	1 A	1,1 A	1,3 A	1,5 A	2,2 A
Ausgangsspannung	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Ausgangsfrequenz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz
Netz-/ Motordrossel	intern	intern	intern	intern	intern
Nennspannung	230 V	230 V	230 V	230 V	230 V
Schutzart	IP 65	IP 65	IP 65	IP 65	IP 65
Umgebungstemperatur	40 °C	40 °C	40 °C	40 °C	40 °C

Typ	Vector 550	Vector 750	Vector 1100	Vector 1500	Vector 2200
Ausgangsleistung	1,3 kVA	1,6 kVA	2,2 kVA	2,7 kVA	3,9 kVA
Motorleistung	0,55 kW	0,75 kW	1,1 kW	1,5 kW	2,2 kW
Nennstrom	3,4 A	4,0 A	5,5 A	7,0 A	10 A
Ausgangsspannung	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V	3 x 230 V
Ausgangsfrequenz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz
Netz-/ Motordrossel	intern	intern	intern	intern	intern
Nennspannung	230 V	230 V	230 V	230 V	230 V
Schutzart	IP 65	IP 65	IP 65	IP 65	IP 65
Umgebungstemperatur	40 °C	40 °C	40 °C	40 °C	40 °C

Typ	Vector 750 / 3	Vector 1100 / 3	Vector 1500 / 3	Vector 2200 / 3	Vector 3000 / 3
Ausgangsleistung	1,6 kVA	2,0 kVA	2,8 kVA	4,0 kVA	5,3 kVA
Motorleistung	0,75 kW	1,1 kW	1,5 kW	2,2 kW	3 kW
Nennstrom	2,3 A	3,5 A	4,1 A	5,8 A	7,6 A
Ausgangsspannung	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Ausgangsfrequenz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz	0 - 400 Hz
Ein-/ Ausgangsdrossel	Intern	Intern	Intern	Intern	Intern
Netzspannung	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V	3 x 400 V
Schutzart	IP 65	IP 65	IP 65	IP 65	IP 65
Umgebungstemperatur	40 °C	40 °C	40 °C	40 °C	40 °C

Technische Änderungen vorbehalten

Sonderlösungen I Motore I Frequenzumrichter I Gehäuse

special solutions I motors I frequency inverter I casings

Sie benötigen eine individuelle Sonderlösung für Ihre Anlage? Gerne stehen wir Ihnen beratend zur Seite und entwickeln nach Ihren Vorgaben und Begebenheiten eine für Sie kompakte, ideale und individualisierte Sonderlösung.

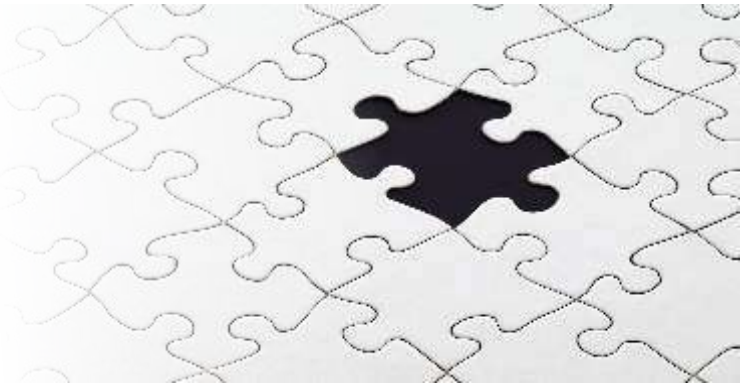
You need an individual special solution for your machine? We are glad to provide you with advice and develop according to your specifications an ideal and individualized special solution for you.

Das Team von MSF-Vathauer trägt gerne mit seinem umfassenden Angebot an Entwicklungs- und Produktions-leistungen zu Ihrem Erfolg bei.

The MSF-Vathauer team is glad to contribute with ist comprehensive range of development services and production services to your success.

Weitere Sonderlösungen auf Anfrage erhältlich.

Other special solutions available on request.



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