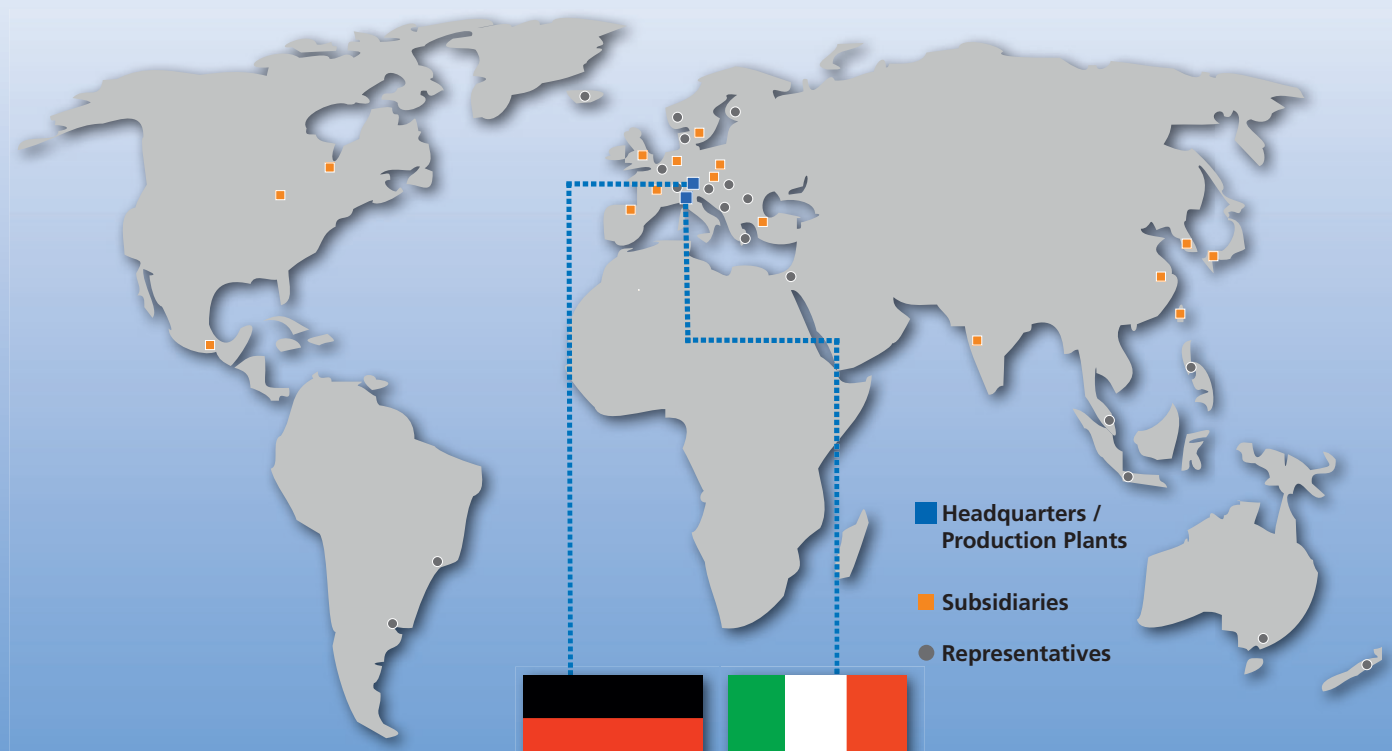




SMW-AUTOBLOK worldwide



SMW-AUTOBLOK manufacturing plant Meckenbeuren
Development | Manufacturing | Sales | Service | Support



AUTOBLOK manufacturing plant Caprie-Torino



SMW-electronics manufacturing plant Meckenbeuren
Development | Manufacturing | Sales | Service | Support



SMW Factory Airport Meckenbeuren
Production | Automation | Electronics | Clamping systems

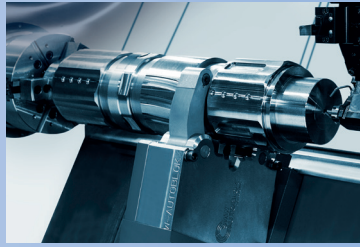
Visit our website: www.smw-autoblok.com

www.smw-electronics.com

Market segments



Automotive



Industrial Equipment



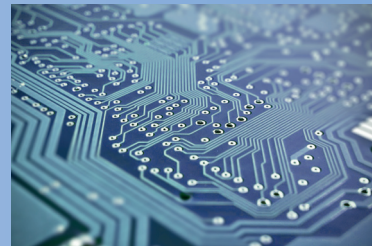
OCTG



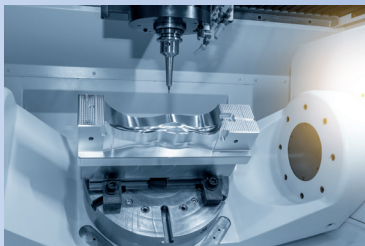
Aerospace



Off Highway



Electronics



Mold Industry



Plastics



**Automation
and Handling**



**Mining Industry
Cranes**



Robots / Cobots



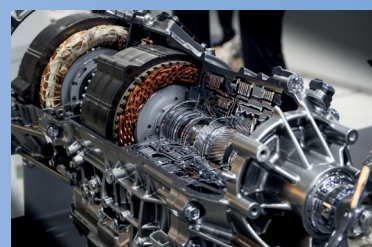
Medical Technology



Intralogistics



Packaging Industry



Powertrain

Product range

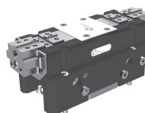


Page 8

MX-S

Mechatronic small parts gripper

- 2 fingers parallel
- ID and OD clamping
- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Position sensing and monitoring of the gripping force
- Protection class: IP40



Page 72

PP

Pneumatic / hydraulic universal gripper

- 2 fingers parallel
- ID and OD clamping
- Air sensing
- Rigid steel housing
- Sealed / Protection class: IP64



Page 18

MX-M

Mechatronic universal gripper

- 2 fingers parallel
- ID and OD clamping
- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Position sensing and monitoring of the gripping force
- Sealed / Protection class: IP64



Page 73

PL-N/L RR 320/380

Pneumatic universal gripper

- 2 fingers parallel
- ID and OD clamping
- Gripper with automatic gripper finger change
- Air sensing
- Aluminum housing
- Sealed / Protection class: IP64



Page 24

MX-U

Mechatronic universal long stroke gripper

- 2 fingers parallel, extra long stroke
- ID and OD clamping
- Compact design, low height
- Mechatronic drive with gripping force retention
- Position sensing and monitoring of the gripping force
- Sealed / Protection class: IP54 (electronics IP67)



Page 74

AcuGrip-TC

Grippers tool changer system

- Maximum productivity by automated quick tool change
- Modular system for flexible interface connection (pneumatics, electrics, sensors)
- Safety lock (spring)
- Pneumatic drive



Page 28

MX-L

Mechatronic long stroke gripper

- 2 fingers parallel
- OD clamping
- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Position sensing and monitoring of the gripping force
- Sealed / Protection class: IP67



Page 76

Inductive Coupling System

Contact free transmission of energy and signals

- Operation and control of MX grippers
- F100-2IOL compatible with MX-S/ MX-M grippers
- F180-ETH compatible with MX-L grippers
- C40 for tool changers (also retrofit solution)
- Wear free ■ Protection class: IP67



Page 38

2PXS/2PXM/2PXL

Pneumatic universal gripper

- 2 fingers parallel
- ID and OD clamping
- Aluminum housing
- Protection class: IP64 (2PXS: IP40)
- Optional: Sensor package for gripping position/ end position monitoring



Page 92

IPS 4.0

Inductive proximity sensor

- IPS 4.0 M08-PNP
- IPS 4.0 M08-0-10V e-sensing
- IPS 4.0 8.8x24.6-0-10V e-sensing
- Suitable for pneumatic grippers for end position sensing or gripper position sensing
- Protection class: IP67



Page 54

3PXS/3PXM/3PXL

Pneumatic centric gripper

- 3 fingers centric
- ID and OD clamping
- Aluminum housing
- Protection class: IP64 (3PXS: IP40)
- Optional: Sensor package for gripping position/ end position monitoring



Page 96

Digitized Workholding

For automation application

- Long-stroke vise
- Zero point clamping system for quick change system



Page 70

Gripper finger blanks

Accessories

- Standard blanks for pneumatic grippers
- Made from Aluminum
- Customized gripper fingers



Page 98

Application examples

Robot application

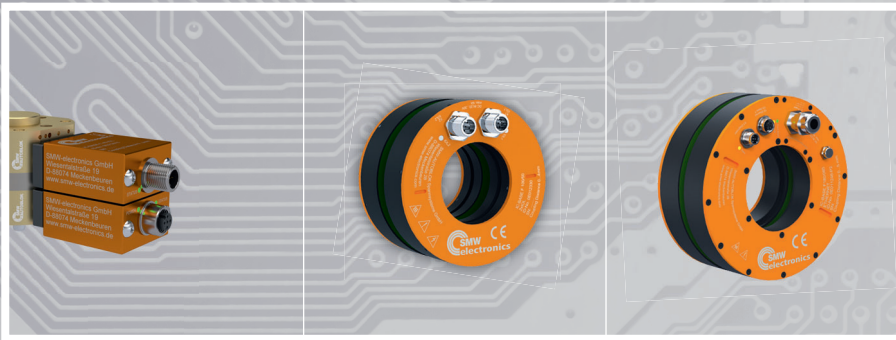
- Mechatronic grippers:
 - Inductive coupling system with hollow shaft allows for non-contact energy and signal transmission and endless 360° rotation on both sides for the MX-L 520 long-stroke gripper
 - Automated quick jaw change

GRIPPING TECHNOLOGY from SMW-electronics

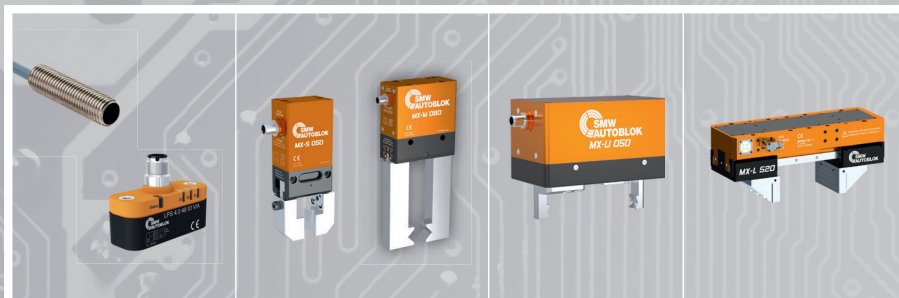
- Innovative
- Reliable
- Flexible
- Intelligent

Network

Integration



Interface/Connectivity



Everything from
a single source.

Actuator

Our specialists work in a completely customer-oriented manner to develop tailor-made solutions for actuators and interfaces. Our customized solutions can be seamlessly integrated into all processes and applications. **Everything from a single source.**

Mechatronic Grippers

Product line MOTIACT



- Gripping force independent of gripping speed and stroke
- Gripping force retention in case of power failure
- Measuring system (absolute sensor) to monitor the gripping position
- Safety features (self-locking; MX-L: additional features)
- Optional use of inductive coupling systems for 360° rotation.
Contactless wear-free transmission of energy and signals
- Pre-positioning and sensitive gripping force adjustment
- Interfaces with intelligent motion profiles
- Protection class: Protected to IP standard
- AI ready: prepared for AI use

	MX-S SMALL PARTS GRIPPER			MX-M UNIVERSAL GRIPPER		MX-U UNIVERSAL LONG STROKE GRIPPER	MX-L LONG STROKE GRIPPER	
								
Type	MX-S 025	MX-S 040	MX-S 050	MX-M 080	MX-M 125	MX-U 050	MX-L 335 compact	MX-L 520
2 finger parallel	+	+	+	+	+	+	+	+
Stroke per jaw	3 mm	6 mm	8 mm	8 mm	13 mm	52 mm	55 mm	99 mm
Gripping force close/open	40 N	150 N	200 N	1.200 N	1.800 N	300 N	2.500 - 27.000 N	10.000 - 40.000 N close
ID clamping	+	+	+	+	+	+	-	-
OD clamping	+	+	+	+	+	+	+	+
Protection class	IP40			IP64		IP54 + (elektronik) IP67	IP67	IP67
Interface	Digital-IO	IO-Link		or Digital-IO		IO-Link or RS 485	Profinet	Profinet or Ethernet/IP
Gripping force retention	+	+	+	+	+	+	+	+
URCap	optional	optional	+	optional	optional	optional	-	-



Use of AI products

Benefits: ■ Predictive maintenance ■ Control and optimization of production processes
 ■ Increasing quality ■ Reduction of downtimes ■ Optimization of process parameters

GENERAL NOTES FOR ALL MECHATRONIC GRIPPERS!

Gripping force is the arithmetic sum of the individual force applied to each jaw at distance on the drawing.

Repeat accuracy is defined as a distribution of the end Position for 100 consecutive strokes.

Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0,1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times are movement times of the base jaws only, without application-specific gripper fingers. PLC reaction times are not included, and are to be considered when cycle times are calculated.



Application/customer benefits

- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Position measuring system absolute (from MX-S 040)
- Pre-positioning and gripping force adjustment
- ID and OD clamping
- Suitable for use as small parts gripper due to lightweight and compact design
- Also suitable for cobot applications and pick & place tasks

Technical features

- Aluminum housing
- Protection class: IP40
- Adjustable gripping position and force
- Repeatability 0,02 mm
- Power supply 19.2 ... 30 V / up to 2 A
- Communication interface IO-Link or Digital-IO
- URCap optionally available

Standard equipment

Gripper with centering sleeves (without gripper fingers and mounting bolts)

MX-S

M8 / M12 Connector

Power and Communication Interface (IO-Link / Digital-IO)

LED Status indication

Integrated

Position measuring system absolute (from MX-S 040)

Common interface

Robot connection



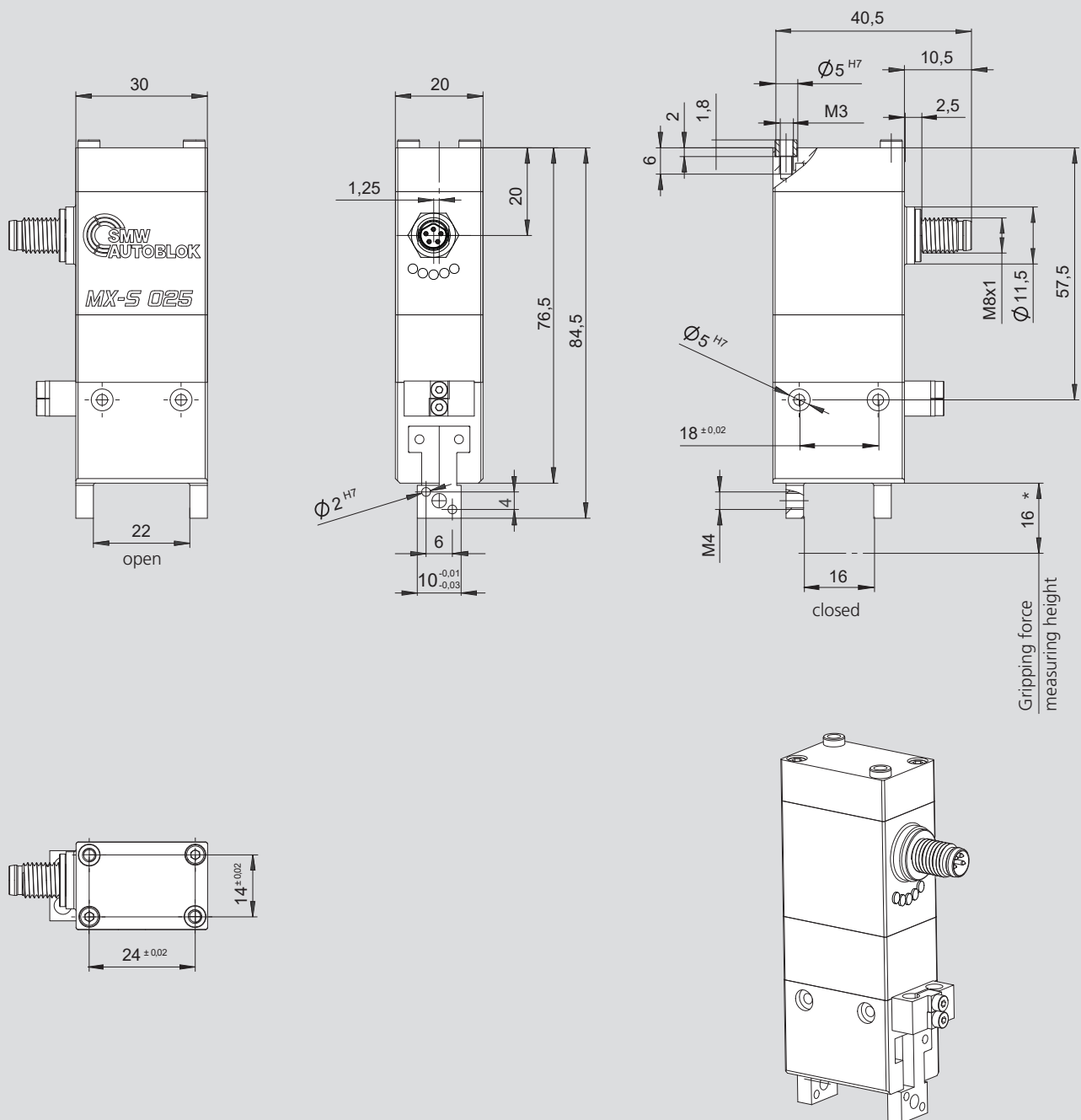
Mechatronic drive with gripping force retention

Common interface gripper fingers

* The illustration shows an example with the MX-S 050 gripper.

Type	Communication Interface	Mechatronic drive	Gripping force retention	Position measuring system	Pre-positioning	Gripping force adjustment	URCap (optional)
MX-S 025	Digital-IO	●	●	● ¹	-	-	●
MX-S 040	IO-Link	●	●	●	●	●	-
	Digital-IO	●	●	●	●	●	●
MX-S 050	IO-Link	●	●	●	●	●	-
	Digital-IO	●	●	●	●	●	●

¹ End position monitoring/gripper feedback

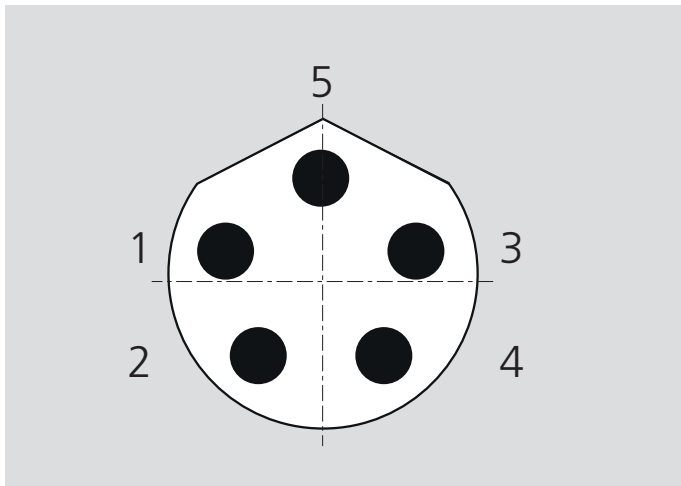


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

Type		MX-S 025 DIO	
Id. No.		480150	
Gripping force	N	40	
Stroke per jaw	mm	3	
Repeatability	mm	0,02	
Weight	kg	0,14	
Recommended workpiece weight	kg	0,2	
Closing time	s	0,07	
Opening time	s	0,07	
Voltage	V	19.2 ... 30 V	
Max. Power consumption	A	1 A	
Idle current (in non-moving state)	A	I < 100 mA	
Protection class		IP40	
Interface		Digital-IO	

Pin assignment M8 x 1 - 5 Pin B-coded Male



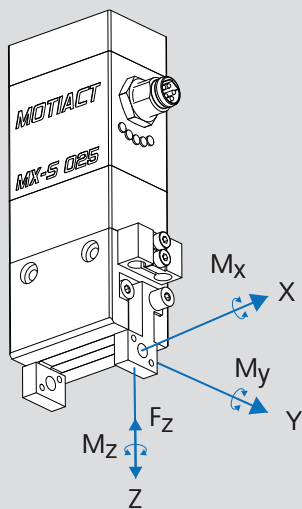
Digital IO Interface M8-5B

Pin	Function	Description
1	+24V	Positive supply voltage
2	Opened	Digital output open feedback
3	GND	Ground
4	Ctrl	Digital input signal
5	Closed	Digital output closed Feedback

Force and moment loading

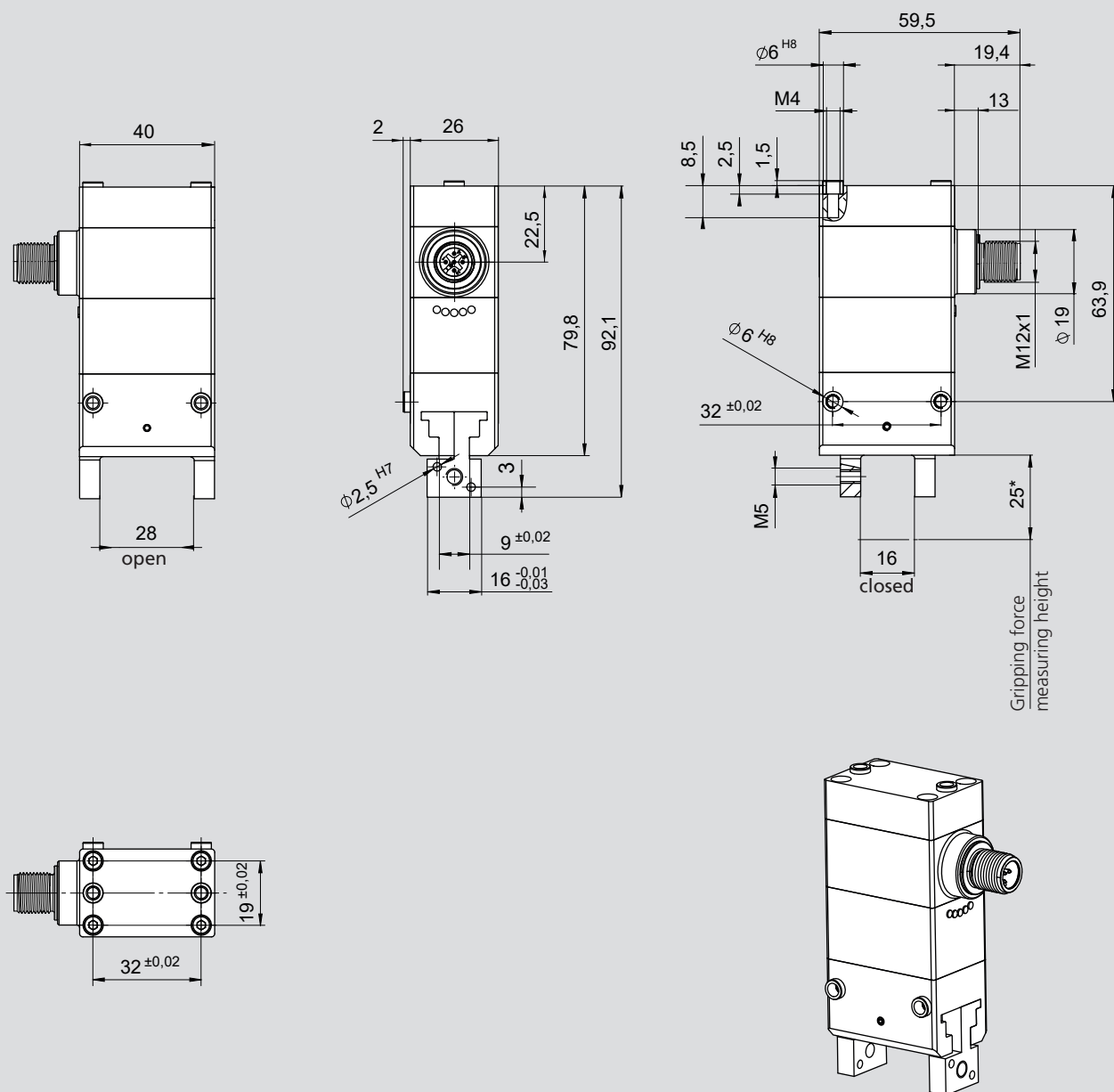
Forces and moments

Shows static forces and moments that can act in addition to the gripping force.



Mx	max. moment in X-axis	Nm	0,80
My	max. moment in Y-axis	Nm	0,60
Mz	max. moment in Z-axis	Nm	1,50
Fz	max. weight force in Z-axis	N	100

Notes

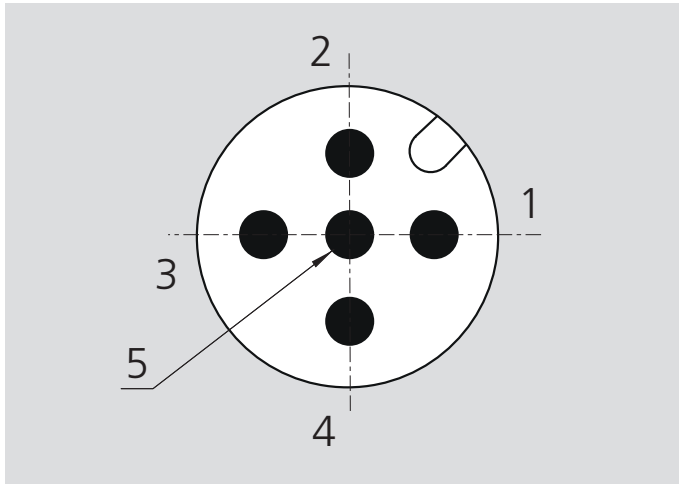


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

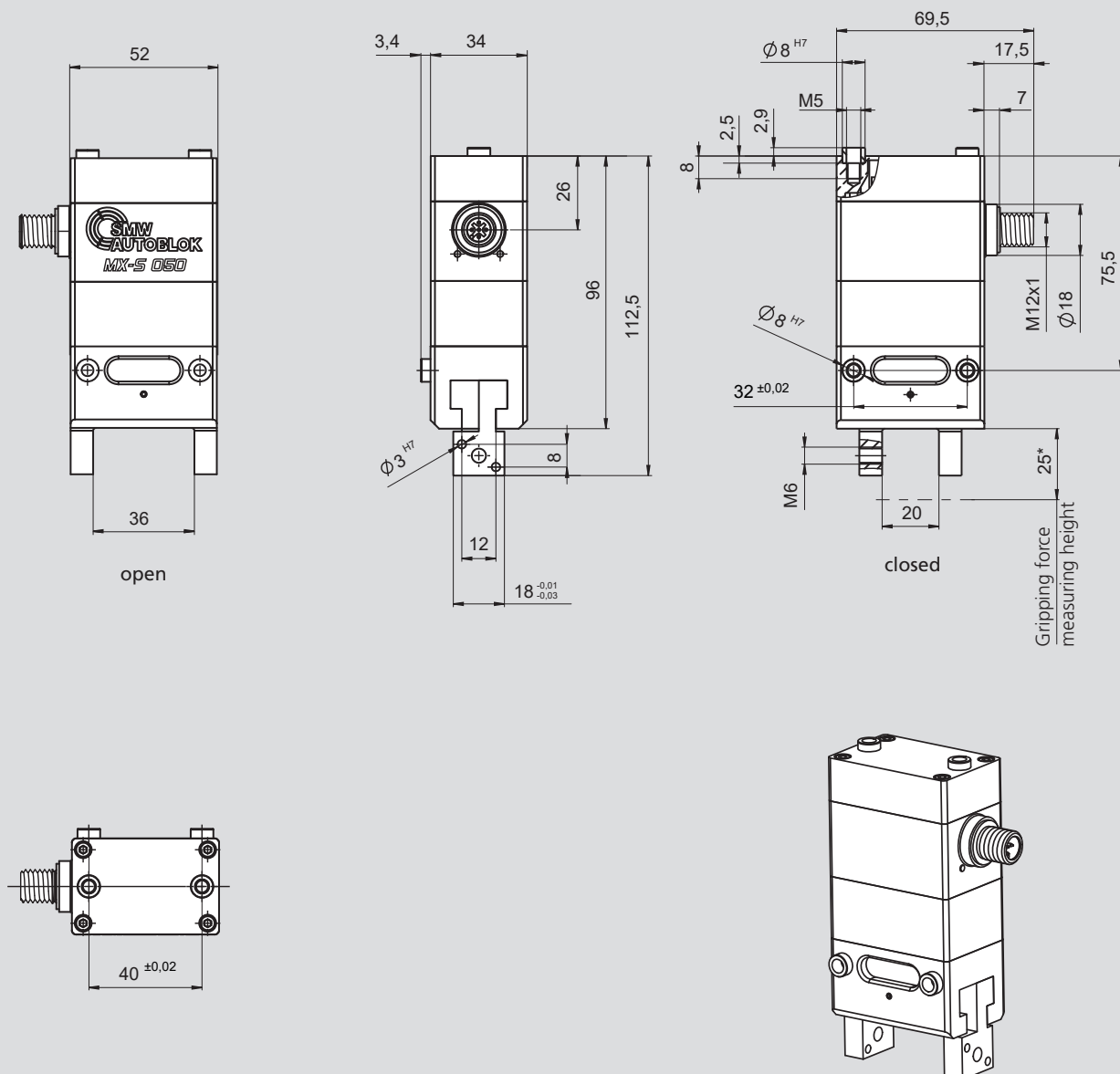
Type		MX-S 040 IOL	MX-S 040 DIO
Id. No.		480240	480340
Gripping force	N	150	
Stepless gripping force adjustment		✓	
Stroke per jaw	mm	6,0	
Repeatability	mm	0,02	
Weight	kg	0,31	
Recommended workpiece weight	kg	0,75	
Closing time	s	k. A	
Opening time	s	k. A	
Voltage	V	U_a 19.2 ... 30 V, U_s 18 ... 30 V	
Max. Power consumption	A	$I_s \leq 100$ mA, $I_A \leq 2$ A	
Idle current (in non-moving state)	A	k. A	
Protection class		IP 40	
Interface		IO-LINK	Digital-IO

Pin assignment M12 x 1 - 5 Pin A-coded Male



IO-Link Port B		
Pin	Function	Description
1	US+	Power supply IO-Link logic 24V DC
2	UA+	Power supply actuator 24V DC
3	US-	Ground IO-Link logic
4	C/Q	IO-Link signal
5	UA-	Ground Actuator

Digital IO Interface M12 - 5A		
Pin	Function	Description
1	+24V	Positive supply voltage
2	+ 24 V	Digital output opened feedback
3	GND	Ground
4	C/Q	Digital input control signal
5	GND	Digital output closed feedback

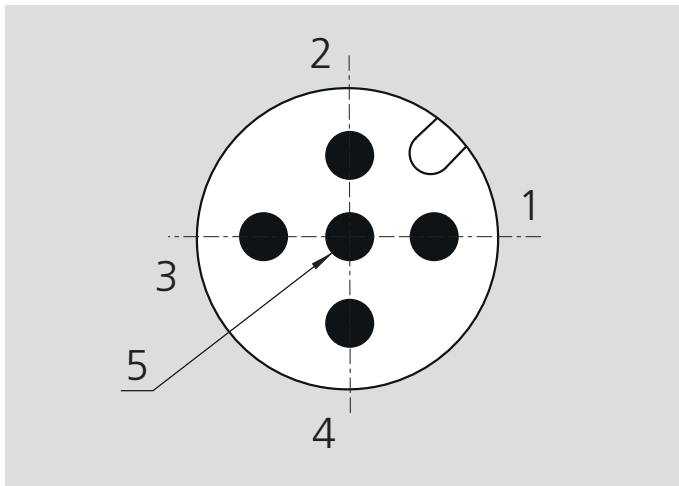


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

Type		MX-S 050 IOL	MX-S 050 DIO
Id. No.		480020	480120
Gripping force	N	200	
Stepless gripping force adjustment	N	60 - 200	
Stroke per jaw	mm	8	
Repeatability	mm	0,02	
Weight	kg	0,58	
Recommended workpiece weight	kg	1	
Closing time	s	0,35	
Opening time	s	0,35	
Voltage	V	U _a 19.2 ... 30 V, U _s 18 ... 30 V	
Max. Power consumption	A	I _S ≤ 100 mA, I _A ≤ 2 A	
Idle current (in non-moving state)	A	I _S = I _A < 100 mA	
Protection class		IP40	
Interface		IO-LINK	
		Digital-IO	

Pin assignment M12 x 1 - 5 Pin A-coded Male



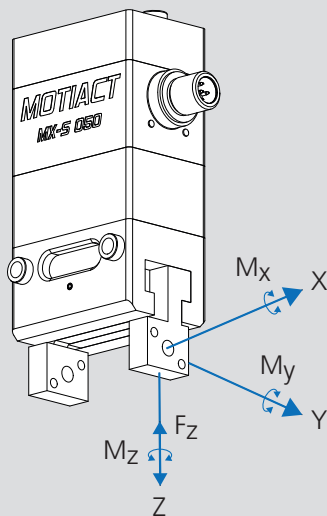
IO-Link Port B		
Pin	Function	Description
1	US+	Power supply IO-Link logic 24V DC
2	UA+	Power supply actuator 24V DC
3	US-	Ground IO-Link logic
4	C/Q	IO-Link signal
5	UA-	Ground Actuator

Digital IO Interface M12 - 5A		
Pin	Function	Description
1	+24V	Positive supply voltage
2	Opened	Digital output opened feedback
3	GND	Ground
4	Ctrl	Digital input control signal
5	Closed	Digital output closed feedback

Force and moment loading

Forces and moments

Shows static forces and moments that can act in addition to the gripping force.



Mx	max. moment in X-axis	Nm	5
My	max. moment in Y-axis	Nm	5
Mz	max. moment in Z-axis	Nm	5
Fz	max. weight force in Z-axis	N	200

GRIPPER-KIT MX-S 050 UR

Mechatronic small parts gripper kit UR

■ 2 finger parallel



Application/customer benefits

- Ready for immediate use: Complete gripper unit incl. mechatronic gripper, gripper fingers, fastening accessories, connection cable and URCap
- Mechatronic drive with gripping force retention
- Position measuring system (end position sensing/gripper jaw)
- Kompatibel zu UR3e, UR5e, UR10e, UR16e
- ID and OD clamping
- Suitable for use as small parts gripper due to lightweight and compact design
- Also suitable for customized cobot applications and pick & place tasks

Technical features

- Aluminum housing
- Protection class: IP40
- Repeatability 0,02 mm
- URCap

Standard equipment

Gripper kit, adaptation flange, gripper finger, fastening screws, connecting cable and URCap

GRIPPER KIT MX-S 050 UR

M12 Connector

Power and Communication
for connection with UR Cobot

LED Status indication

Adaption flange

Suitable for UR3e, UR5e,
UR10e, UR16e

Mechatronic drive

with gripping force retention

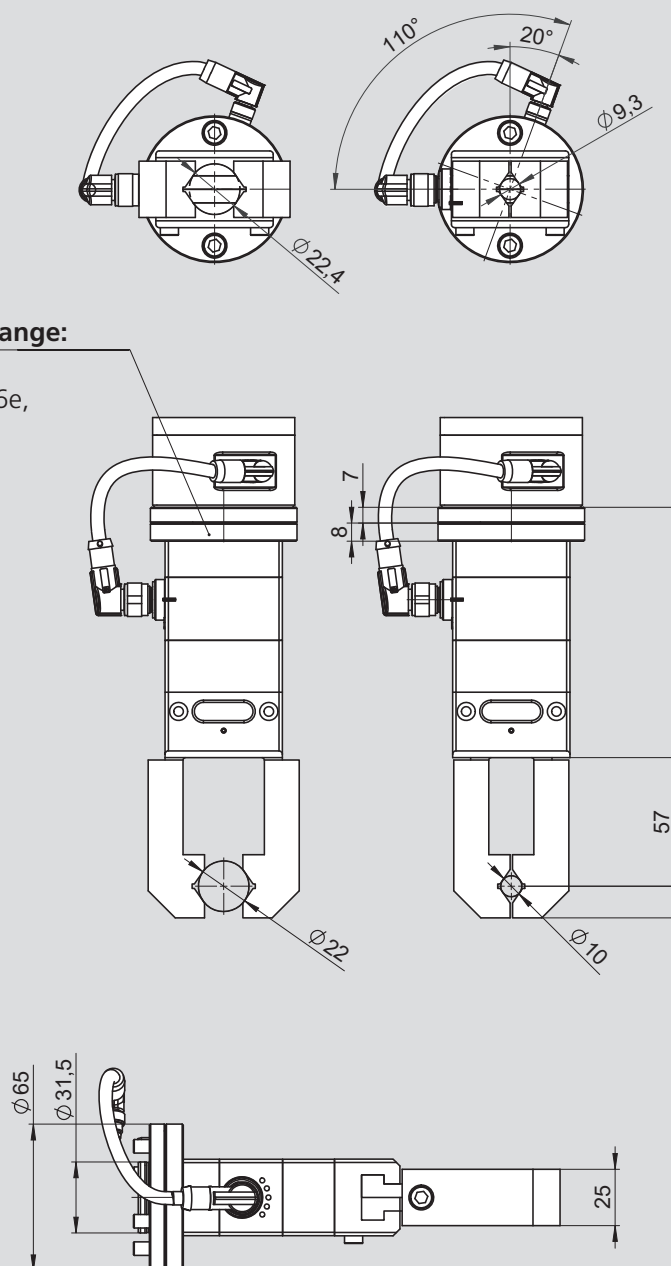
Common interface

gripper fingers

Universal gripper fingers

included in standard equipment

Adaption flange:

UR3e, UR5e,
UR10e, UR16e,


Subject to technical changes.
For more detailed information please ask our customer service.

Type		GRIPPER KIT MX-S 050 UR	
Id. No.		480220	
Gripping force	N	100	
Stroke per jaw	mm	8	
Repeatability	mm	0,02	
Weight	kg	0,9	
Recommended workpiece weight	kg	0,5	
Closing time	s	0,4	
Opening time	s	0,4	
Voltage	V	19.2 ... 30 V	
Max. Power consumption	A	0,6 A	
Idle current (in non-moving state)	A	I < 100 mA	
Protection class		IP40	
Interface		Digital-IO	



Application/customer benefits

- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Position measuring system (absolute)
- Pre-positioning and gripping force adjustment
- ID and OD clamping clamping
- Use as universal gripper

Technical features

- Aluminium housing
- Sealed / Protection class: IP64
- Adjustable gripping position and force
- Repeatability 0,02 mm
- Power supply 19.2 ... 30 V / 5 A
- Communication interface IO-Link or Digital-IO
- URCap optionally available

Standard equipment

Gripper with centering sleeves (without gripper fingers and mounting bolts)

MX-M

Common interface

Robot connection

LED Status indication

M12 Connector

Power and
Communication
Interface
(IO-Link / Digital-IO)

Integrated

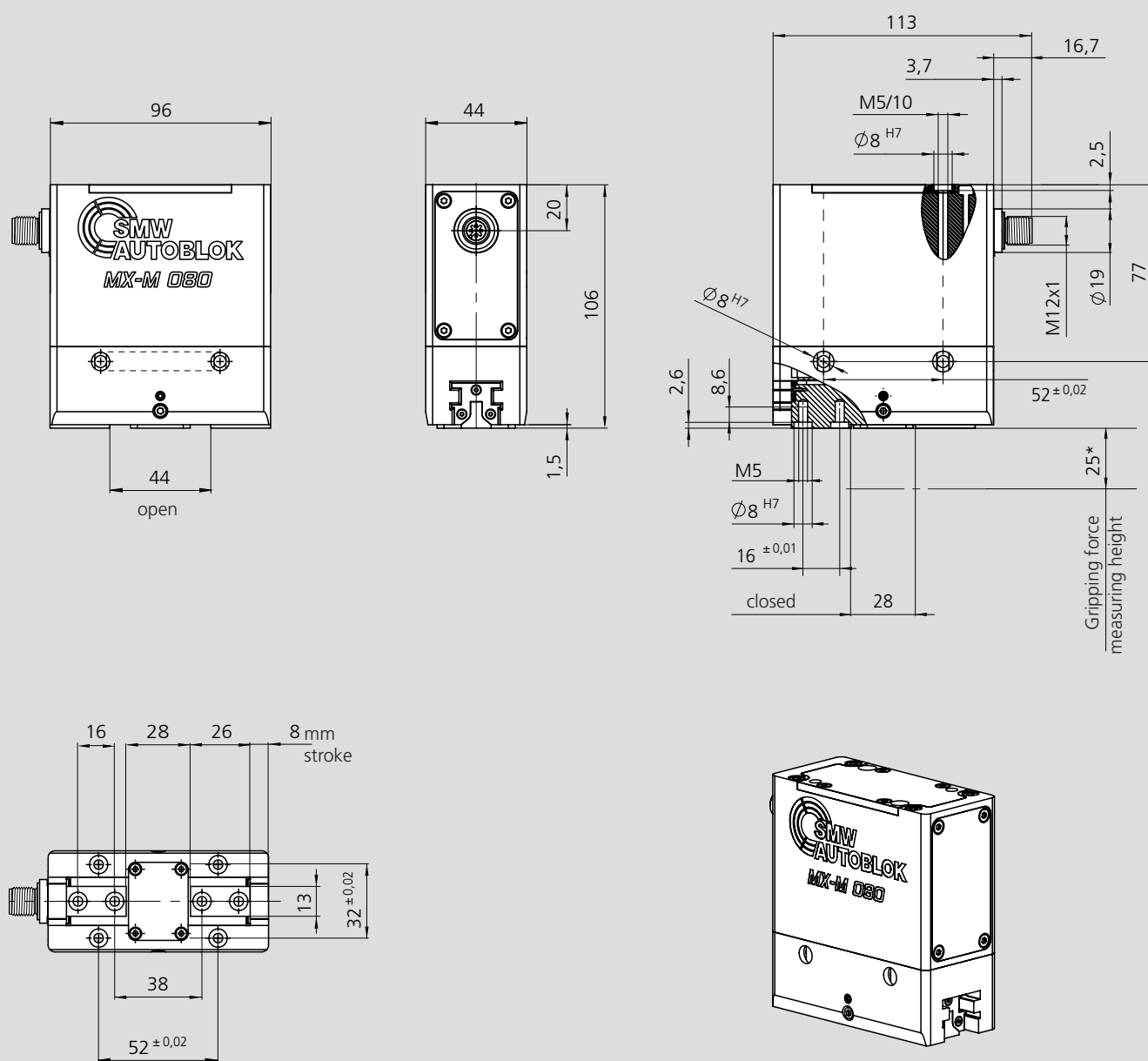
position measuring system
(absolute)

Sealed

Common interface
gripper fingers



Mechatronic drive
with gripping force retention

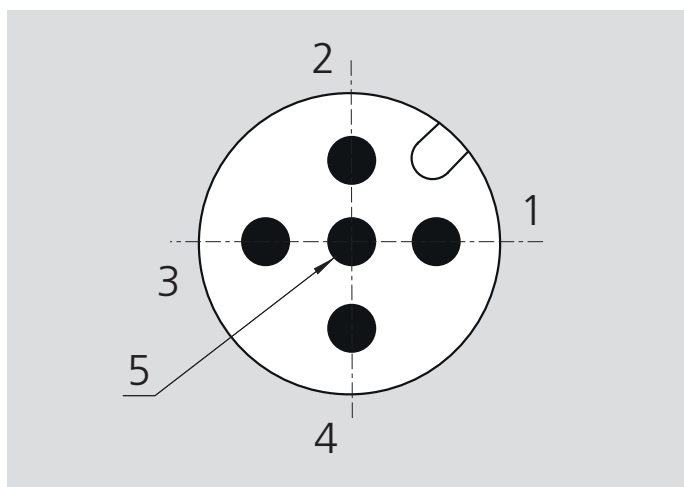


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

Type		MX-M 080 IOL	MX-M 080 DIO
Id. No.		480040	480140
Gripping force	N	1.200	
Stepless gripping force adjustment	N	360 - 1.200	
Stroke per jaw	mm	8	
Repeatability	mm	0,02	
Weight	kg	1,35	
Recommended workpiece weight	kg	6	
Closing time	s	0,36	
Opening time	s	0,36	
Voltage	V	19.2 ... 30 V	
Max. power consumption	A	5 A	
Protection class		IP64	
Signal interface		IO-Link	Digital-IO

Pin assignment M12 x 1 - 5 Pin A-coded Male



IO-Link Port B

Pin	Function	Description
1	US+	Power supply IO-Link logic 24V DC
2	UA+	Power supply actuator 24V DC
3	US-	Ground IO-Link logic
4	C/Q	IO-Link signal
5	UA-	Ground Actuator

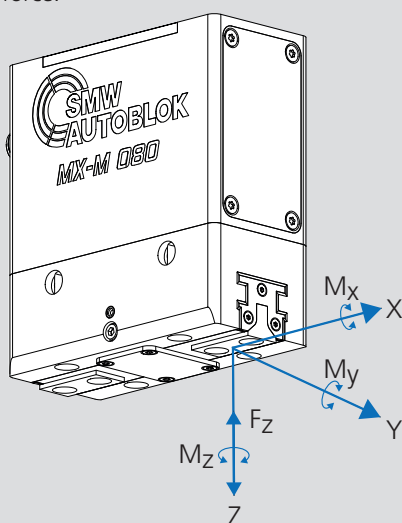
Digital IO Interface M12 - 5A

Pin	Function	Description
1	+24V	Positive supply voltage
2	Opened	Digital output opened feedback
3	GND	Ground
4	Ctrl	Digital input control signal
5	Closed	Digital output closed feedback

Force and moment loading

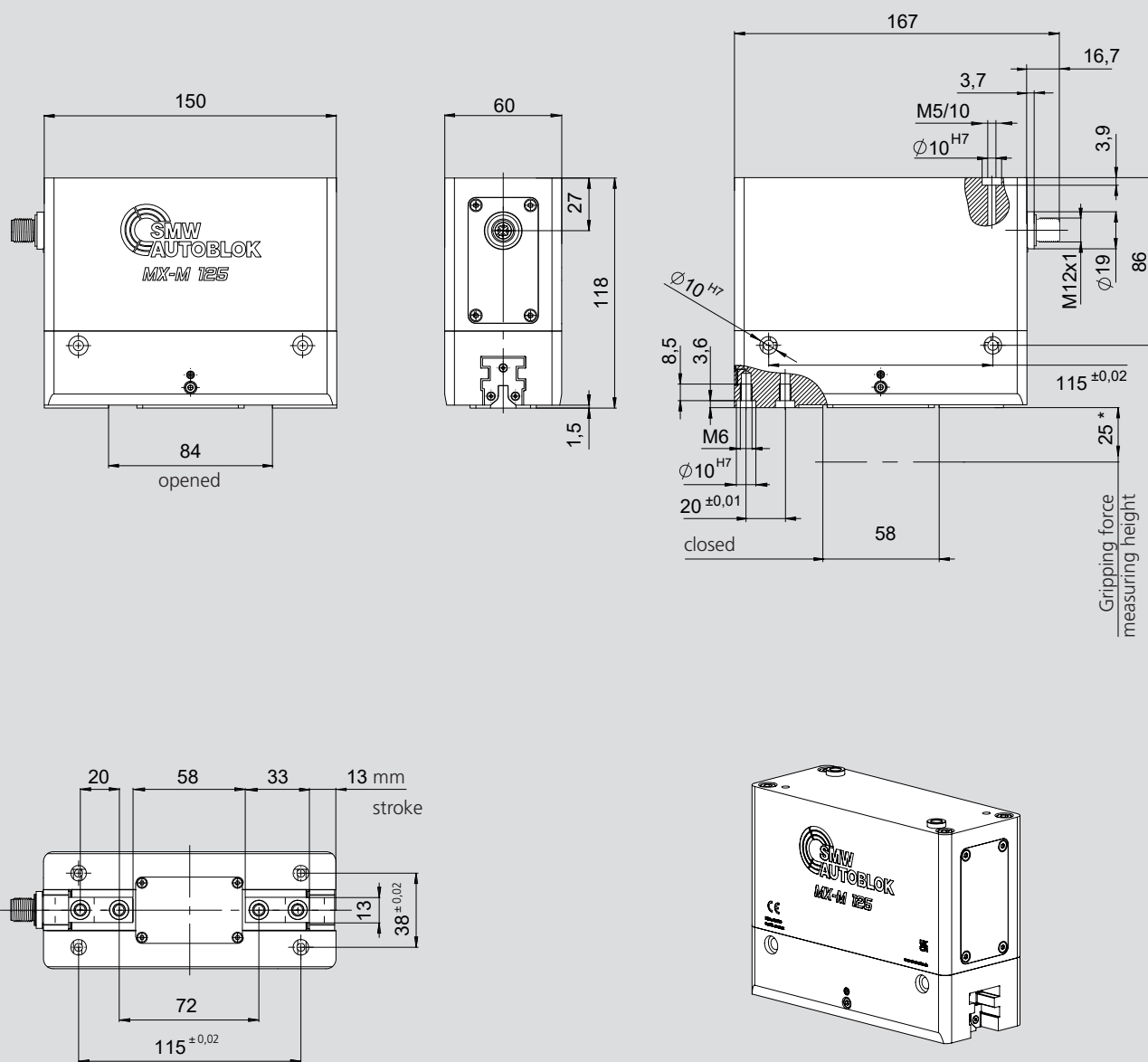
Forces and moments

Shows static forces and moments that can act in addition to the gripping force.



Mx	max. moment in X-axis	Nm	50
My	max. moment in Y-axis	Nm	100
Mz	max. moment in Z-axis	Nm	50
Fz	max. weight force in Z-axis	N	1.200

Notes

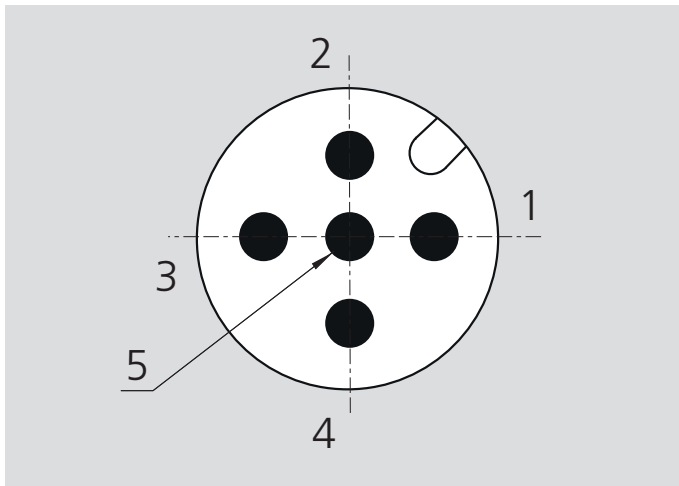


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied each jaw at the specified distance.

Type		MX-M 125 IOL	MX-M 125 DIO
Id. No.		480110	480210
Gripping force	N	1.800	
Stepless gripping force adjustment	N	540-1.800	-
Stroke per jaw	mm	13	
Repeatability	mm	0,02	
Weight	kg	2,7	
Recommended workpiece weight	kg	9	
Closing time	s	0,4	
Opening time	s	0,4	
Voltage	V	19.2 ... 30 V	
Max. power consumption	A	5 A	
Protection class		IP64	
Signal interface		IO-Link	Digital-IO

Pin assignment M12 x 1 - 5 Pin A-coded Male



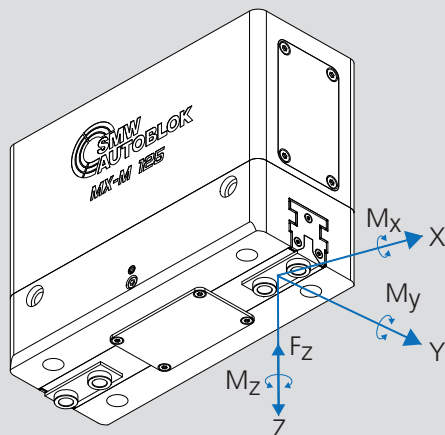
IO-Link Port B		
Pin	Function	Description
1	US+	Power supply IO-Link logic 24V DC
2	UA+	Power supply actuator 24V DC
3	US-	Ground IO-Link logic
4	C/Q	IO-Link signal
5	UA-	Ground Actuator

Digital IO Interface M12 - 5A		
Pin	Function	Description
1	+24V	Positive supply voltage
2	Opened	Digital output opened feedback
3	GND	Ground
4	Ctrl	Digital input control signal
5	Closed	Digital output closed feedback

Force and moment loading

Forces and moments

Shows static forces and moments that can act in addition to the gripping force.



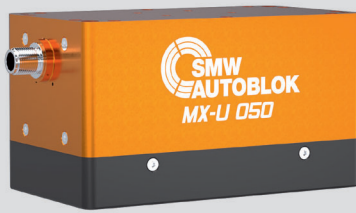
Mx	max. moment in X-axis	Nm	125 Nm
My	max. moment in Y-axis	Nm	140 Nm
Mz	max. moment in Z-axis	Nm	110 Nm
Fz	max. weight force in Z-axis	N	3.000 N

MX-U 050

Mechatronic universal long stroke gripper

Mechatronic gripper

■ 2 finger parallel



Application/customer benefits

- Universal, flexible use due to extra long stroke
- Stepless gripping force and gripping position adjustment
- Fine-sensitive gripping
- Robust, compact design with an precise mechatronic drive
- Integrated, absolute position measuring system
- ID and OD clamping
- Suitable for cobot applications and pick & place tasks

Technical features

- Aluminum housing
- Protection class: IP54 (Electronic IP67)
- Adjustable gripping position and force
- Repeatability 0,02 mm
- Power supply 19.2 ... 30 V / 1 A
- Communication interface IO-Link or RS 485
- URCap optionally available

Standard equipment

Gripper with centering sleeves (without gripper fingers and mounting bolts)

MX-U

Universal interface
to Robot

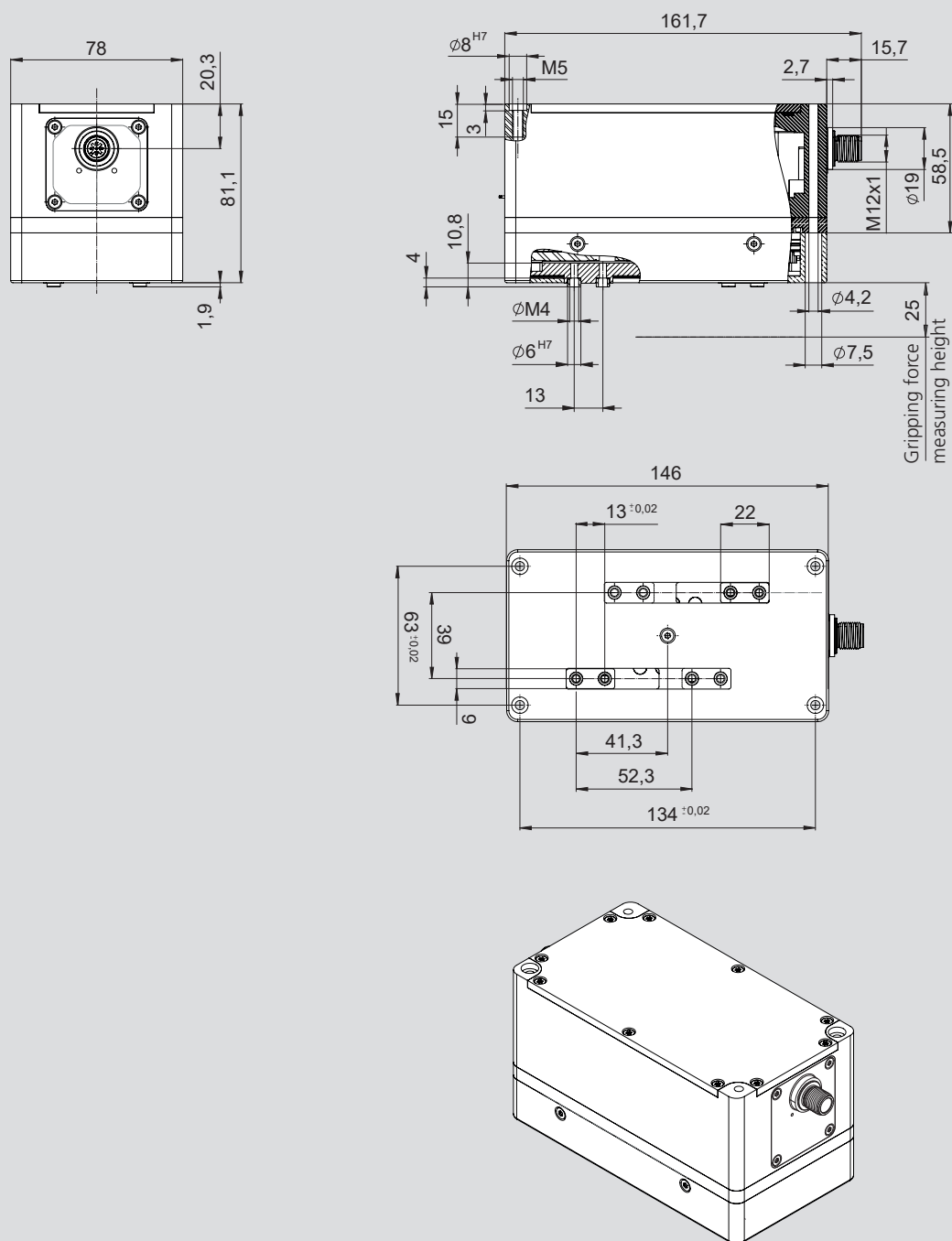
M12 Connector
Power and Communication
Interface
(IO-Link / RS 485)

LED Status
indication

Mechatronic
drive

Integrated Position
measuring system
(absolute)

Interface
gripper fingers

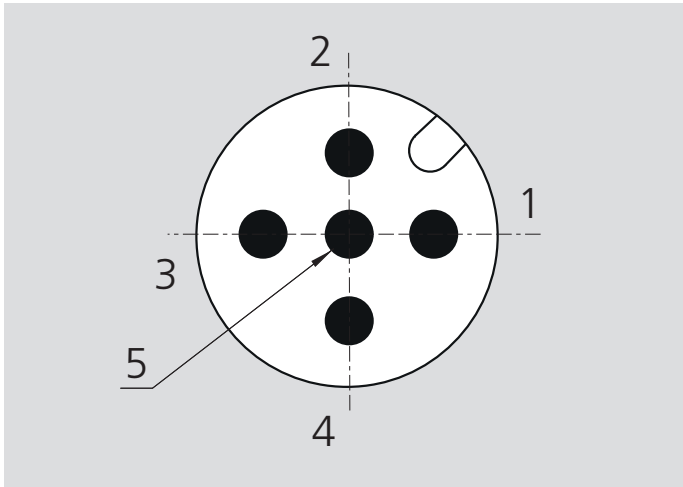


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

Type		MX-U 050 IO-LINK
Id.-No.		480270
Gripping force	N	300
Stroke per jaw	mm	52
Repeatability	mm	0.02
Weight	kg	1.7
Max. workpiece weight	kg	1.5
Voltage	V	19.2 ... 30 V
Power consumption	A	1
Protection class mechanical		IP54
Protection class electrical		IP67

Pin assignment M12x1 - 5 Pin A-coded Male



IO-Link Port B		
Pin	Function	Description
1	US+	Power supply IO-Link logic 24V DC
2	UA+	Power supply actuator 24V DC
3	GND US-	Ground IO-Link logic
4	C/Q	IO-Link signal
5	GND UA-	Ground actuator

Notes

MX-L 335 compact

Mechatronic gripper

Mechatronic long stroke gripper

■ 2 finger parallel



Application/customer benefits

- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Gripping force 2.500 N - 27.000 N
- Position sensing and monitoring of the gripping force
- OD clamping
- Pre-positioning and sensitive gripping force adjustment

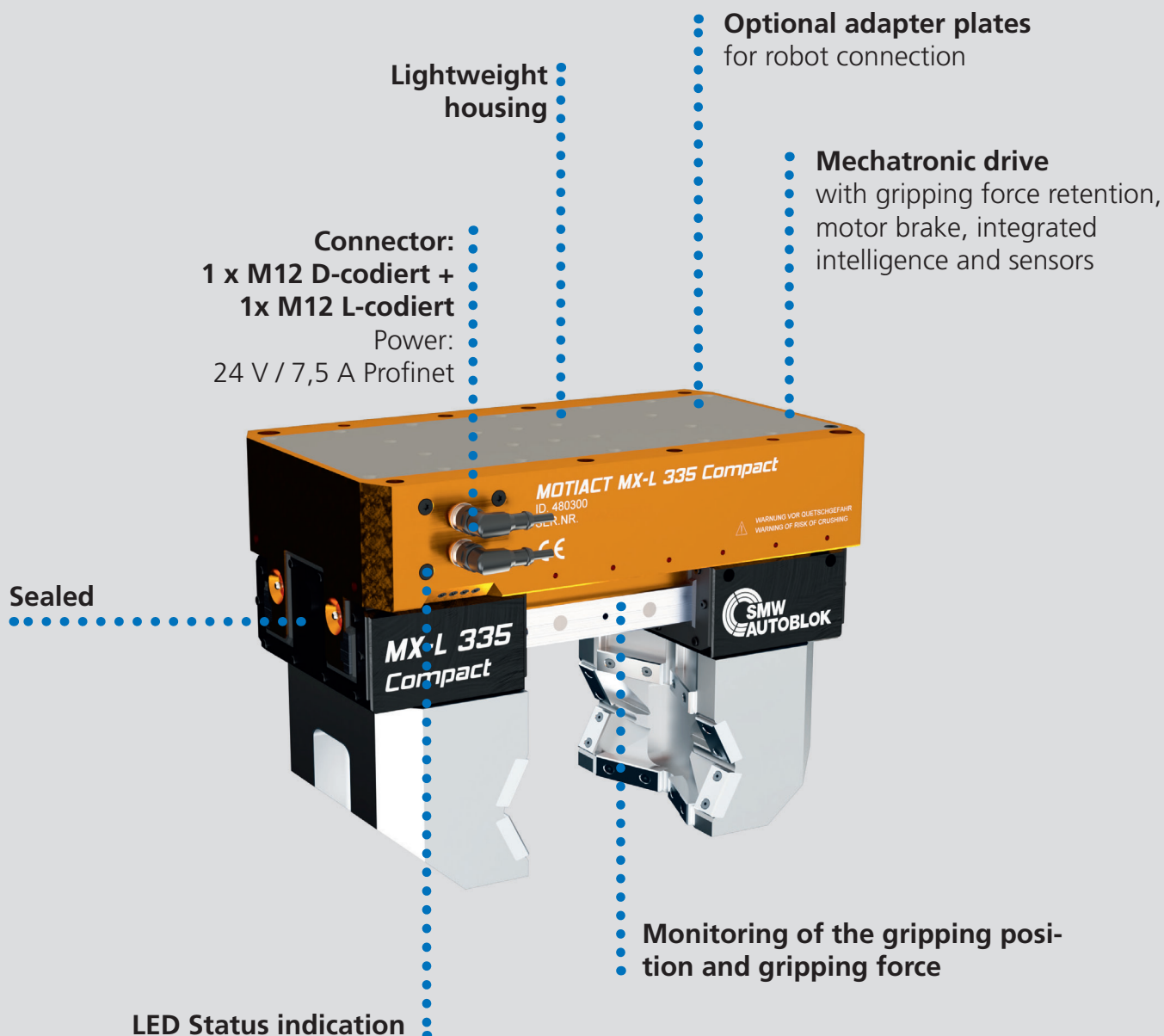
Technical features

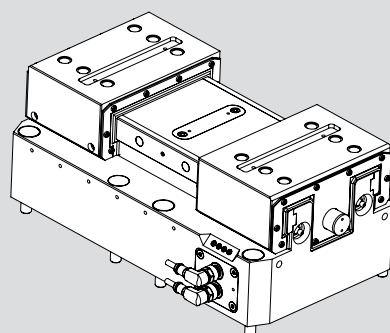
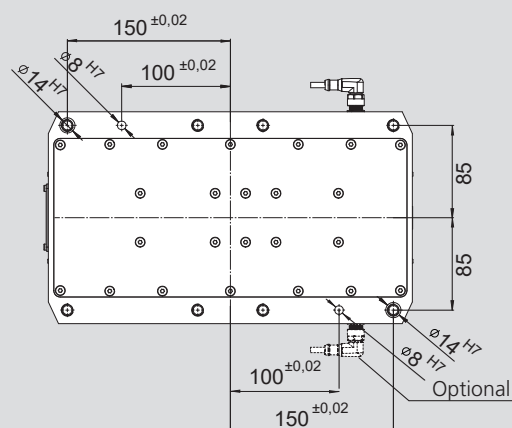
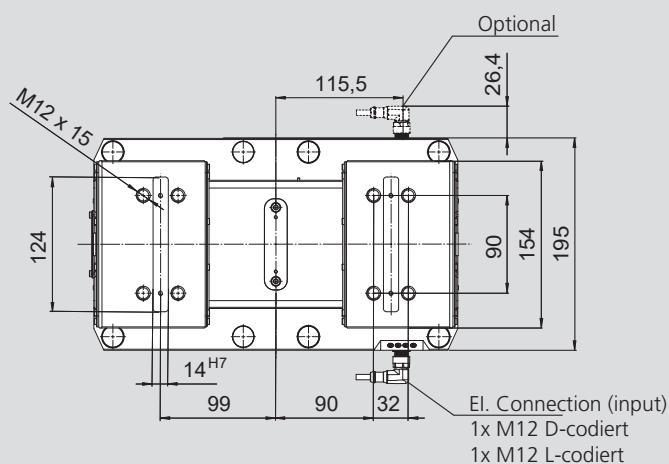
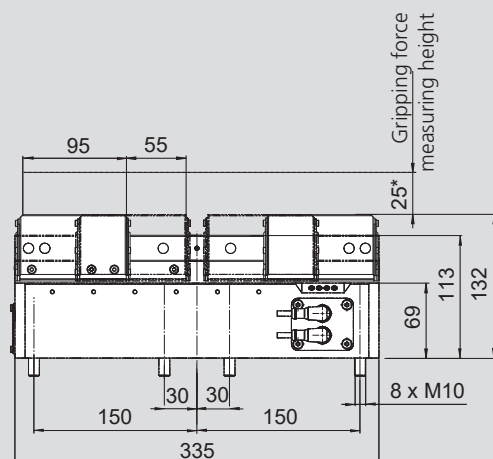
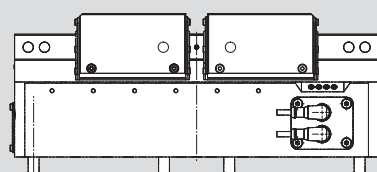
- Aluminum housing
- Sealed/Protection class: IP67
- Repeatability: 0,02 mm
- Recommended workpiece weight up to 135 kg
- Power supply: 24 V / 7,5 A
- Communication interface: Profinet
- Possibility of safe motion shutdown by means of STO Signals (optional)

Standard equipment

Gripper (without gripper fingers, centering sleeves and mounting bolts)

MX-L 335 compact



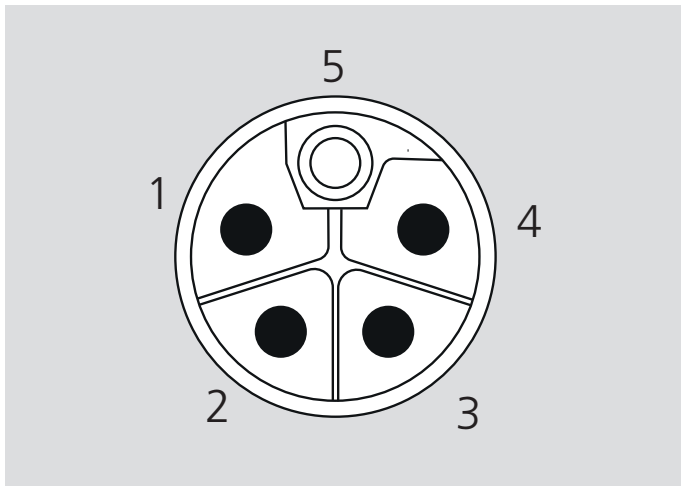


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

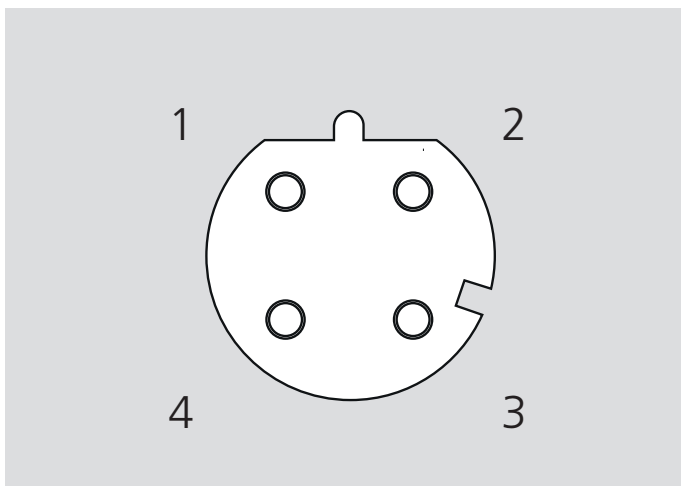
Type		MX-L 335 compact	
Id. No.		PROFINET	
Id. No.		480300	
Gripping force (steplessly adjustable)	N	2.500 - 27.000	
Stroke per jaw	mm	55	
Repeatability	mm	0,02	
Weight	kg	32	
Recommended workpiece weight	kg	135	
Travel speed per jaw	mm/s	5	
Voltage (actuators)	V	24/48	
Max. power consumption (actuators)	A	7,5	
Voltage (sensors)	V	24 V ± 10%	
Max. power consumption (sensors)	A	0.5 A	
Communication interface		Profinet	
STO signals (option)		2	

Pin assignment M12 x 1 - 5 Pin L-coded Male



Power Interface		
Pin	Function	Description
1	US+	24V Power supply logic
2	UA+	24V/ 48V Power supply actuator
3	GND US-	Ground power supply logic
4	GND UA-	Ground power supply actuator
5	nc	-

Pin assignment M12 x 1 - 4 Pin D-coded Female



Ethernet/Profinet Interface		
Pin	Function	Description
1	Tx+	Ethernet/Profinet Tx+
2	Rx+	Ethernet/Profinet Rx+
3	Tx-	Ethernet/Profinet Tx-
4	Rx-	Ethernet/Profinet Rx-

Notes

MX-L 520

Mechatronic long stroke gripper

Mechatronic gripper

■ 2 finger parallel

Application/customer benefits

- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Gripping force up to 40.000 N
- Position sensing and monitoring of the gripping force
- OD clamping
- Pre-positioning and gripping force adjustment

Technical features

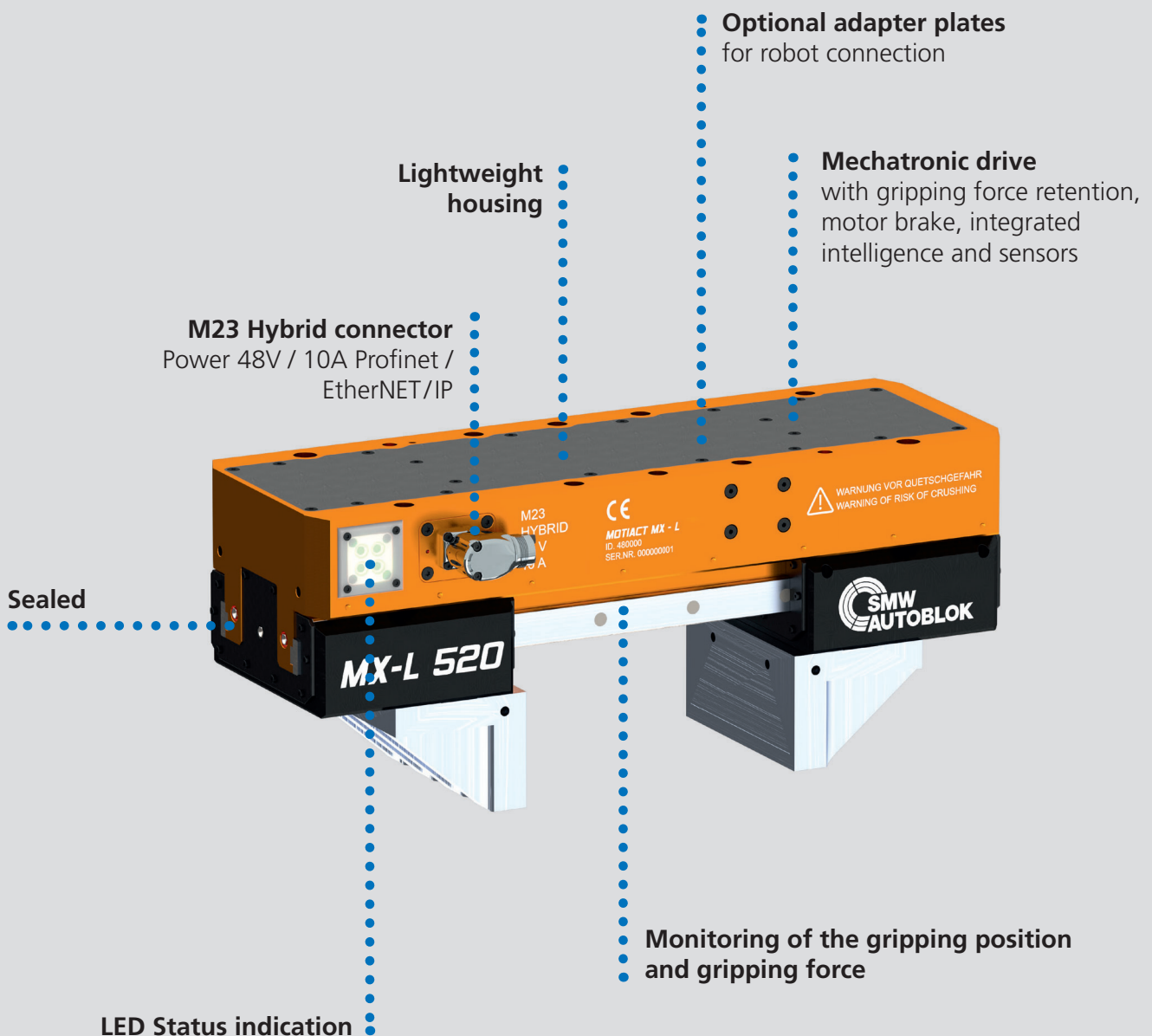
- Aluminum housing
- Sealed/Protection class: IP67
- Repeatability 0,02 mm
- Recommended workpiece weight up to 200 kg
- Power supply 48V / 10A
- Communication interface Profinet / EtherNet/IP
- Possibility of safe motion shutdown by means of STO Signals (optional)

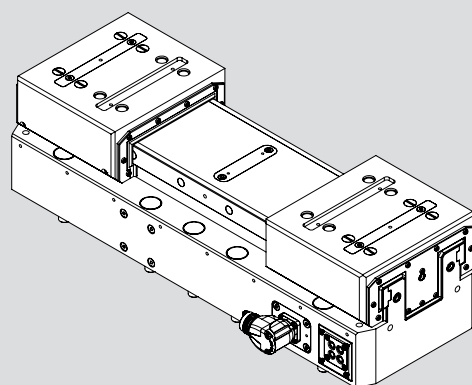
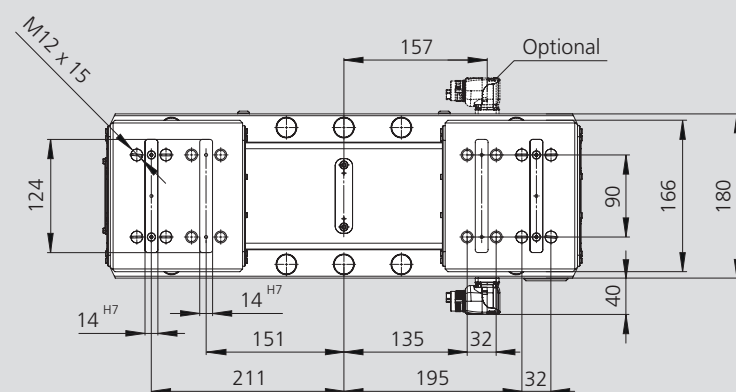
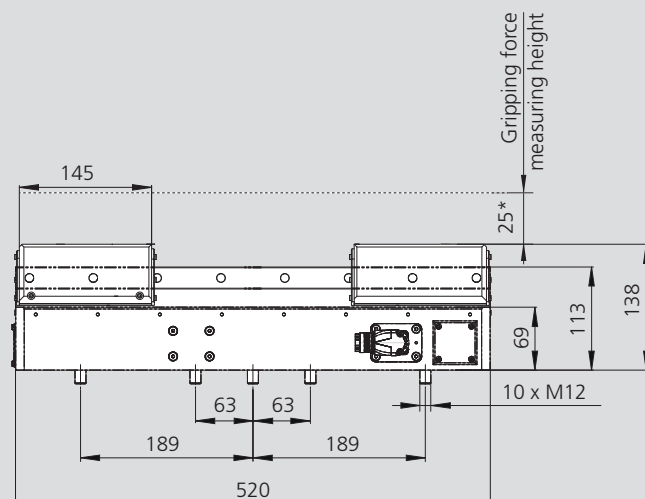
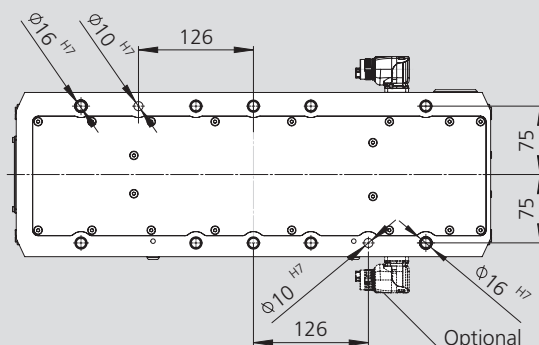
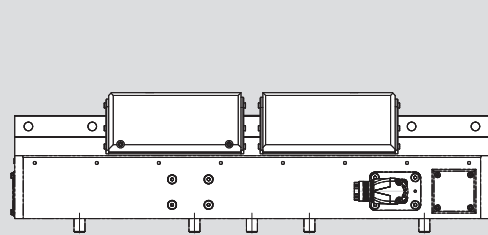
Standard equipment

Gripper (without gripper fingers, centering sleeves and mounting bolts)



MX-L



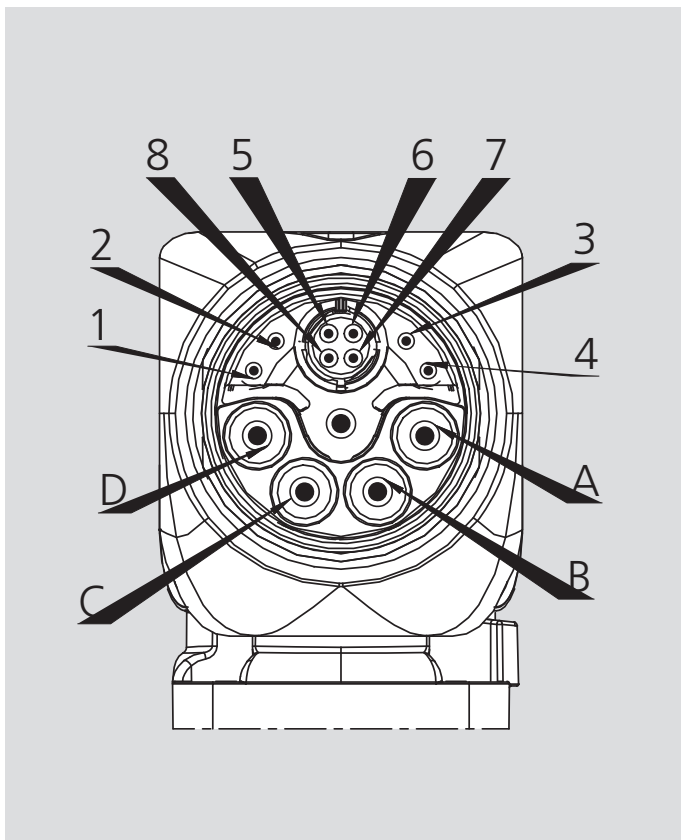


Subject to technical changes.
For more detailed information please ask our customer service.

*Gripping force is the arithmetic sum of the individual forces applied on each jaw at the specified distance.

Type		MX-L 520 PROFINET	MX-L 520 ETHERNET / IP
Id. No.		480000	480200
Gripping force (steplessly adjustable)	N	10.000 - 40.000	
Stroke per jaw	mm	99	
Repeatability	mm	0,02	
Weight	kg	42,2	
Recommended workpiece weight	kg	200	
Travel speed per jaw	mm/s	1,2	
Voltage (actuators)	V	48	
Max. power consumption (actuators)	A	10	
Voltage (sensors)	V	24 V ± 10%	
Max. power consumption (sensors)	A	0.5 A	
Communication interface		Profinet	EtherNET/IP
STO signals (option)		2	

PIN assignment M23 hybrid plug



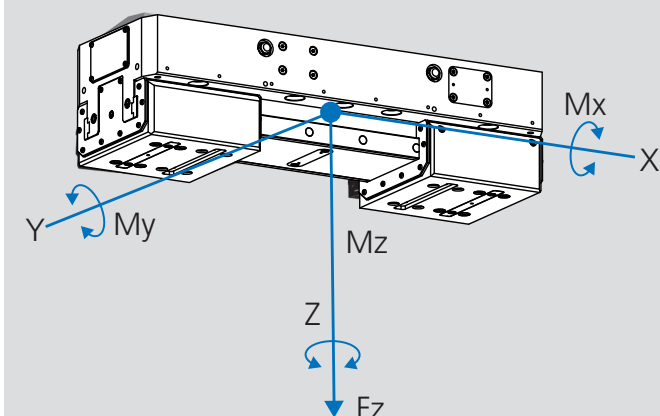
Device plug connector

Pin	Core color	Function	Description
A	black 1	24 V	Logic Power
B	black 2	GND	Logic GND
C	black 3	48 V	Last Power
D	black 4	GND	Last GND
PE	green / yellow	Ground	Ground wire
1	violett	STO A	Safe hold A
2	brown	STO B	Safe hold B
3	green	STO GND	Safe hold GND
4	black 5	Nc	-
5	blue	Data RX-	ProfiNet
6	yellow	Data TX+	ProfiNet
7	white	Data RX+	ProfiNet
8	orange	Data TX-	ProfiNet

Force and moment loading

Forces and moments

Shows static forces and moments that can act in addition to the gripping force.



Mx	max. torque in X axis	Nm	1.200
My	max. torque in Y axis	Nm	2.900
Mz	max. torque in Z axis	Nm	1.200
Fz	max. effective weight in Z-axis	daN	400

Notes

Pneumatic Grippers

Overview



Sensor package
(optional)

ADVANTAGES

- Protection class: IP64 (IP40=2PXS, 3PXS)
- 2PXS/2PXM/2PXL: Highly efficient power density thanks to optimum oval piston geometry:
 - High gripping force
 - Compact design
 - Light weight (Aluminum housing)
- Gripping force maintained via spring assembly or pressure retention (optional)
- Extended sensor package:
 - C-slot magnetic sensors for piston position monitoring
 - Inductive proximity switches for end position monitoring
 - Gripping position monitoring
- Interchangeable with most existing universal grippers
- Universal grippers PP pneumatic or hydraulic actuated
- Gripper fingers screw-on pattern, optionally via centering sleeves or groove
- Sizes PL-L 320 and 380 with gripper finger quick-change system RR

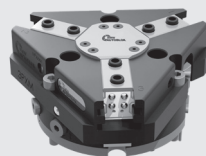
2PXS/ 2PXM/ 2PXL



UNIVERSAL GRIPPERS

- 2 finger parallel
- Pneumatic actuated
- Aluminum housing
- Maximum power density
- Sealed
- Extensive sensor accessories package

3PXS/ 3PXM/ 3PXL

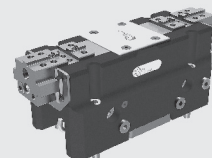


CENTRIC GRIPPERS

- 3 finger centric
- Pneumatic actuated
- Aluminum housing
- Sealed
- Extensive sensor accessories package



PP



UNIVERSAL GRIPPERS

- 2 finger parallel
- Pneumatic/hydraulic actuated
- Rigid steel housing
- Sealed

PL-N/L RR 320/380

UNIVERSAL GRIPPERS

- Automated gripper finger change
- Aluminum housing

GENERAL NOTES FOR ALL PNEUMATIC GRIPPERS!

Gripping force is the arithmetic sum of the individual force applied to each jaw at distance on the drawing.

Repeat accuracy is defined as a distribution of the end Position for 100 consecutive strokes.

Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0,1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times are movement times of the base jaws only, without application-specific gripper fingers.

Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

2PXM 125 in Robot application

**Highly efficient
power density**

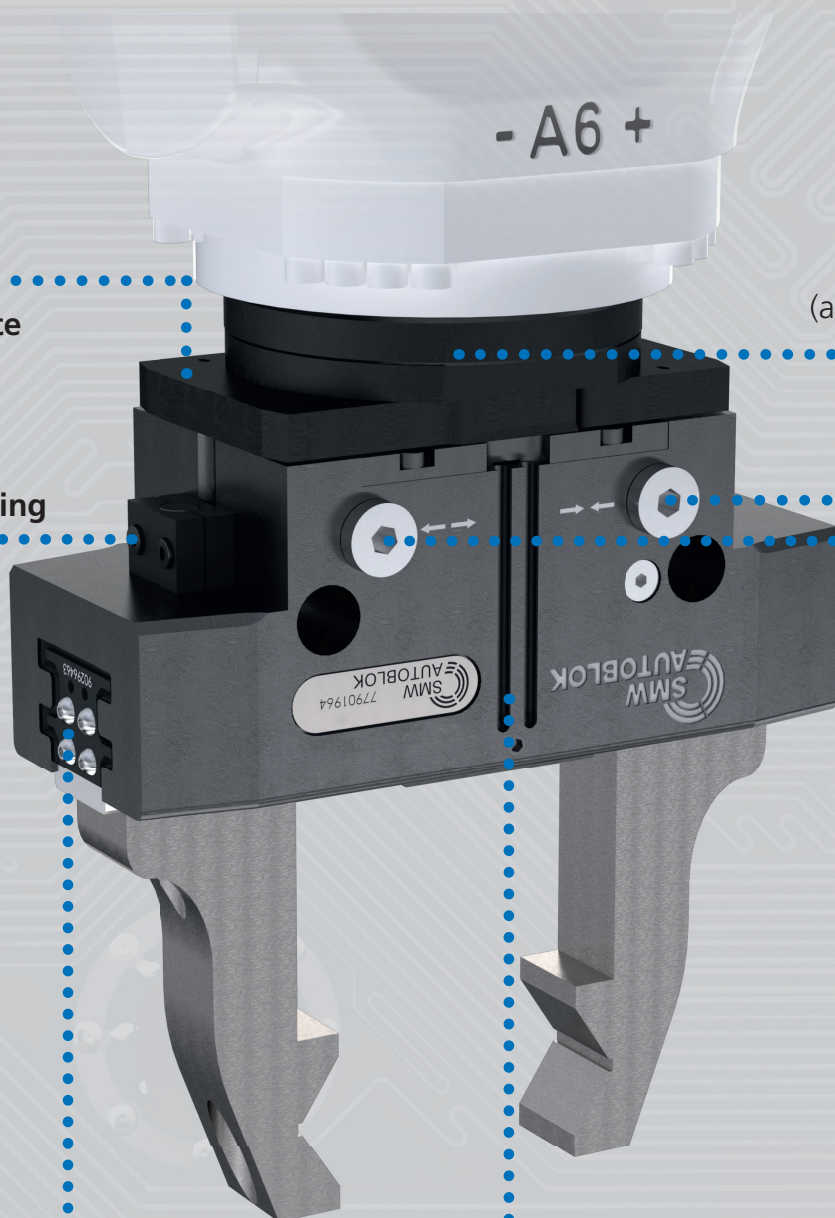
- High gripping force
- Compact design
- Low weight

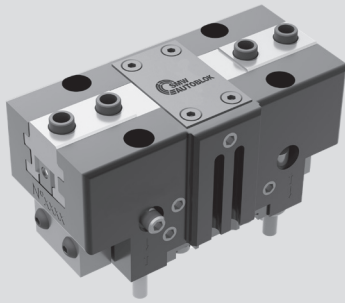
**Preparation
end position monitoring
or
position monitoring
by means of
inductive sensors
IPS 4.0**

**Stable guide
and sealed**

**Connections
open/close
(also at the bottom)**

**Mounting
for C-slot sensors**





Application/customer benefits

- Compact, lightweight design and high gripping force thanks to optimized oval piston geometry
- Gripping force retention (LSI/LSE, NSE/NSI)
- ID and OD clamping
- Side or rear feeding
- Compatible with commercially available grippers

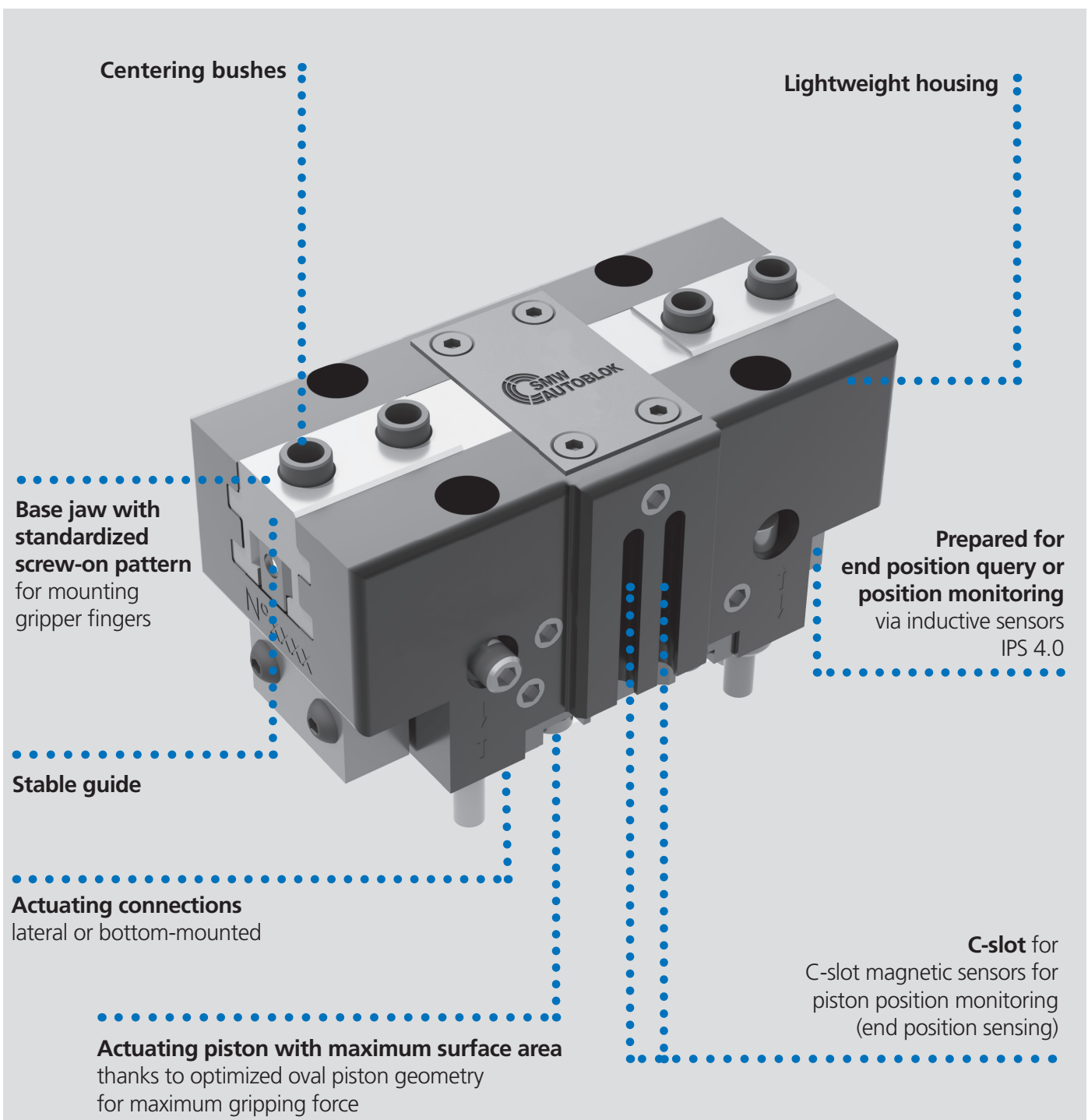
Technical features

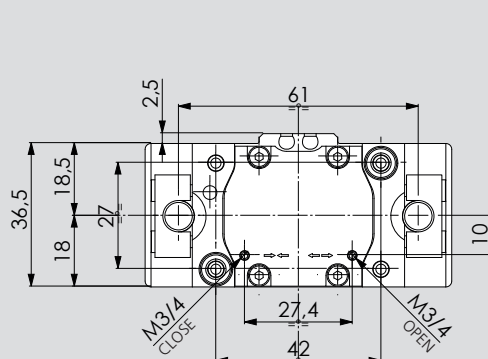
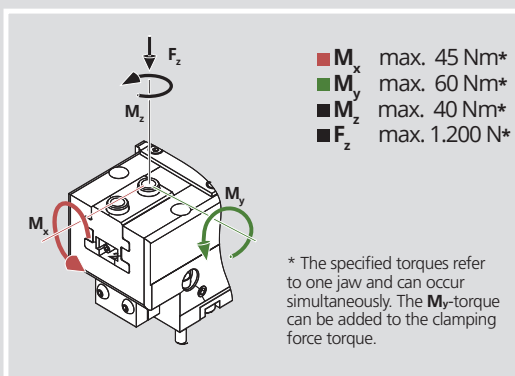
- Aluminum housing
- Protection class: IP40
- Functional parts heat-treated for high precision and long life
- Highest rigidity and Repeatability: 0,01 mm
- Prepared for air purge
- Optional: Sensor package for gripping position / end position monitoring (IPS 4.0)

Standard equipment

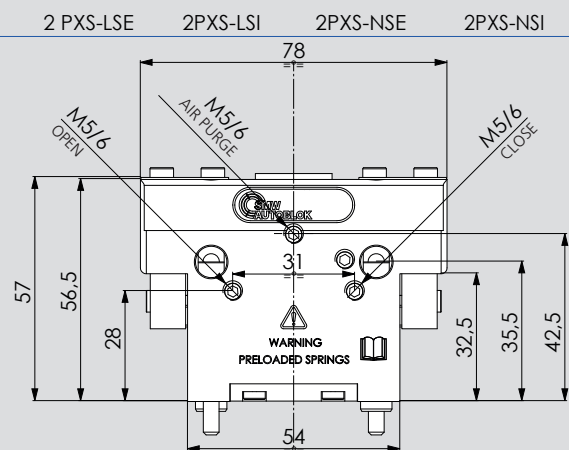
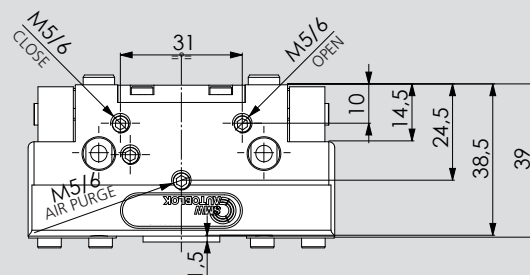
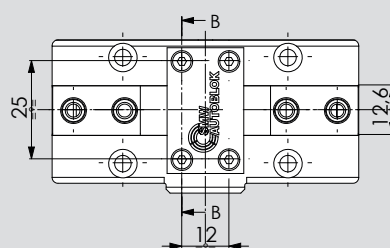
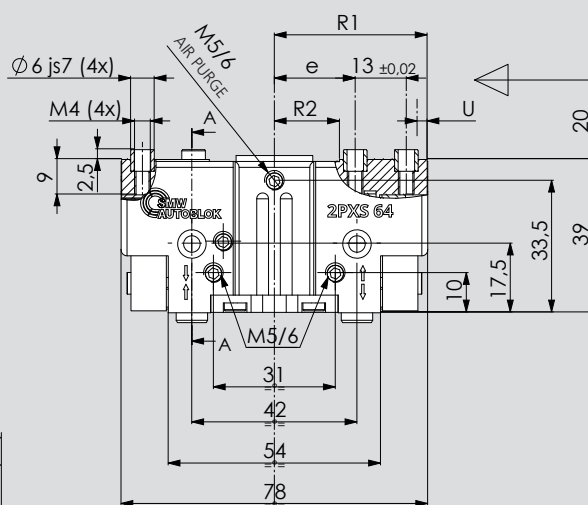
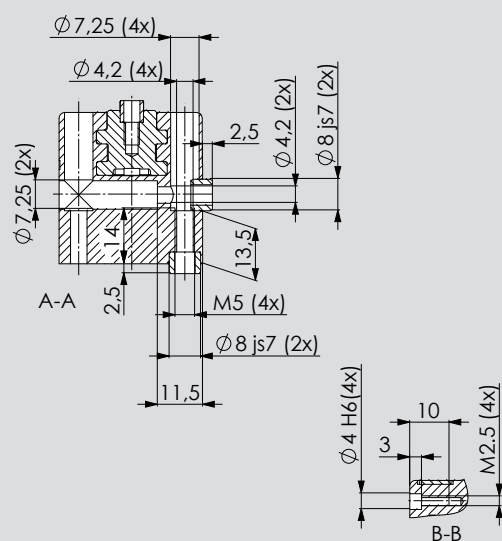
Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

2PXS





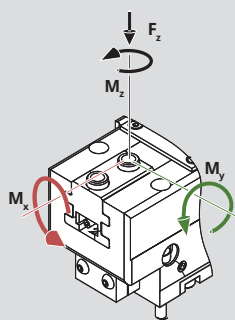
max allowed
temperature
using proximities
is 60°C



Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
2PXS-N 64	77901856	630	-----	3	8	2/8	0,03/0,03	0,3	3,0	14,25/17,25	36/39	10/13
2PXS-NSE 64	77902056	930	300	3	17	4/6,5	0,04/0,02	0,38	3,0	14,25/17,25	36/39	10/13
2PXS-NSI 64	77901156	1.010	300	3	18,5	4/6,5	0,02/0,04	0,38	3,0	14,25/17,25	36/39	10/13
2PXS-L 64	77901956	300	-----	6	8	2/8	0,03/0,03	0,3	1,5	14,25/20,25	36/39	10/16
2PXS-LSE 64	77902156	440	140	6	17	4/6,5	0,04/0,02	0,38	1,5	14,25/20,25	36/39	10/16
2PXS-LSI 64	77901256	480	140	6	18,5	4/6,5	0,02/0,04	0,38	1,5	14,25/20,25	36/39	10/16

LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

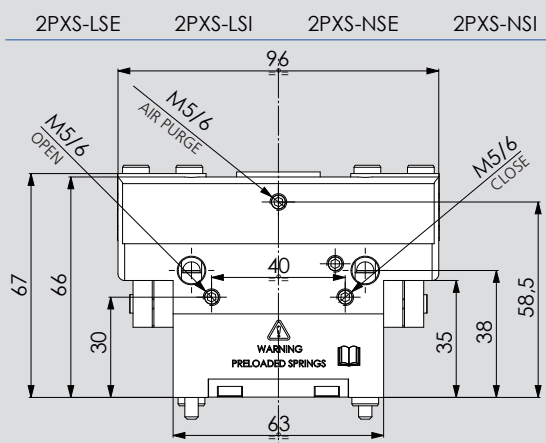
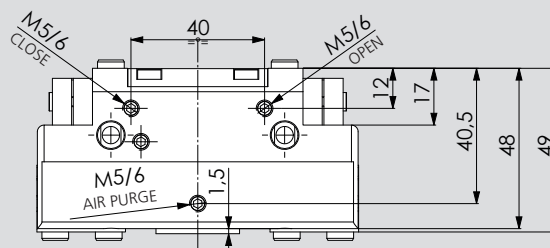
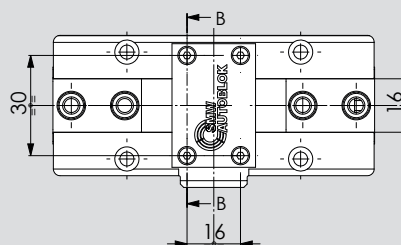
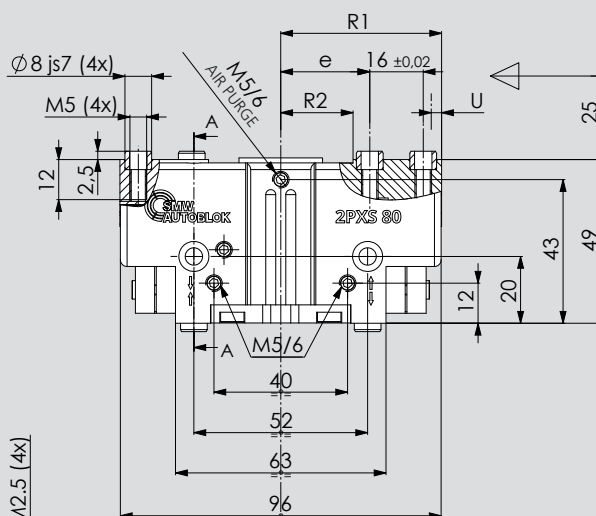
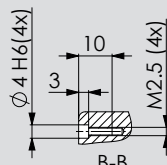
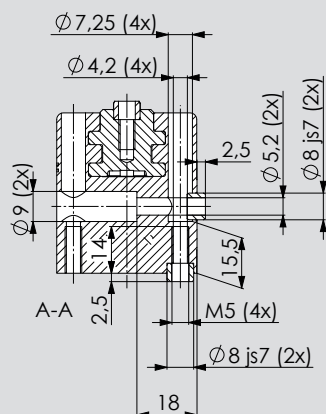
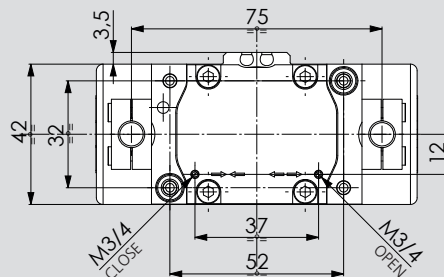


- M_x max. 60 Nm*
- M_y max. 95 Nm*
- M_z max. 55 Nm*
- F_z max. 1.800 N*

* The specified torques refer to one jaw and can occur simultaneously. The **M_y**-torque can be added to the clamping force torque.



max allowed
temperature
using proximities
is 60°C



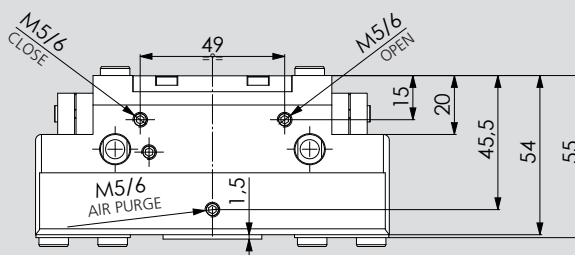
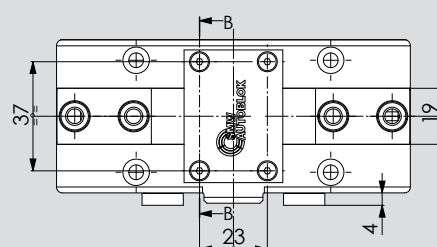
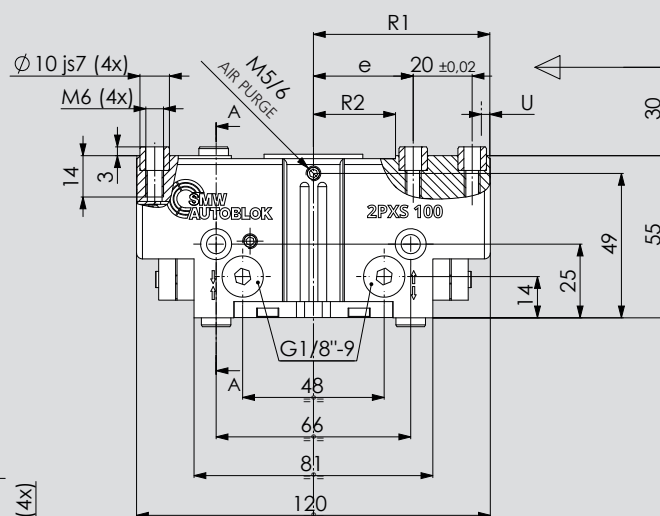
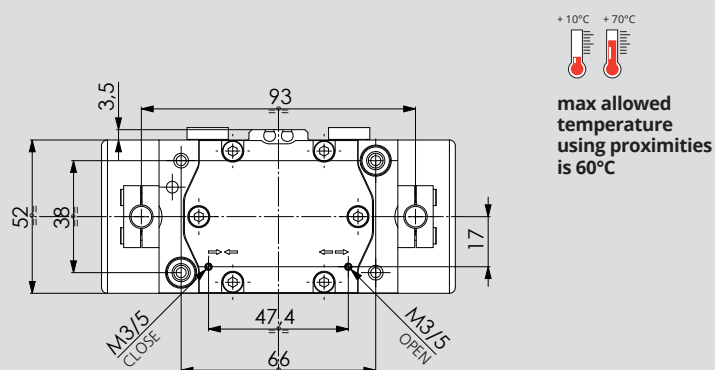
Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
2PXS-N 80	77901858	970	-----	4	17	2/8	0,04/0,04	0,55	5,0	18,75/22,5	44/48	13,5/17,5
2PXS-NSE 80	77902058	1.290	320	4	31	4/6,5	0,05/0,03	0,65	5,0	18,75/22,5	44/48	13,5/17,5
2PXS-NSI 80	77901158	1.410	320	4	33	4/6,5	0,03/0,05	0,65	5,0	18,75/22,5	44/48	13,5/17,5
2PXS-L 80	77901958	460	-----	8	17	2/8	0,04/0,04	0,55	2,5	18,75/26,5	40/48	13,5/21,5
2PXS-LSE 80	77902158	610	150	8	31	4/6,5	0,05/0,03	0,65	2,5	18,75/26,5	40/48	13,5/21,5
2PXS-LSI 80	77901258	670	150	8	33	4/6,5	0,03/0,05	0,65	2,5	18,75/26,5	40/48	13,5/21,5

LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

2PXS 100

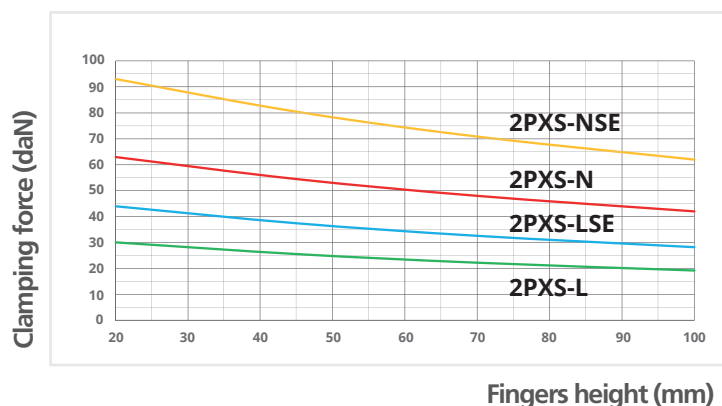
Pneumatic gripper



Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
2PXS-N 100	77901860	1.550	-----	5	33,5	2/8	0,07/0,07	0,93	8,0	23,5/28,5	55/60	17,5/22,5
2PXS-NSE 100	77902060	2.290	740	5	67	4/6,5	0,1/0,05	1,2	8,0	23,5/28,5	55/60	17,5/22,5
2PXS-NSI 100	77901160	2.450	740	5	71	4/6,5	0,05/0,1	1,2	8,0	23,5/28,5	55/60	17,5/22,5
2PXS-L 100	77901960	730	-----	10	33,5	2/8	0,07/0,07	0,93	4,0	23,5/33,5	50/60	17,5/27,5
2PXS-LSE 100	77902160	1.080	350	10	67	4/6,5	0,1/0,05	1,2	4,0	23,5/33,5	50/60	17,5/27,5
2PXS-LSI 100	77901260	1.160	350	10	71	4/6,5	0,05/0,1	1,2	4,0	23,5/33,5	50/60	17,5/27,5

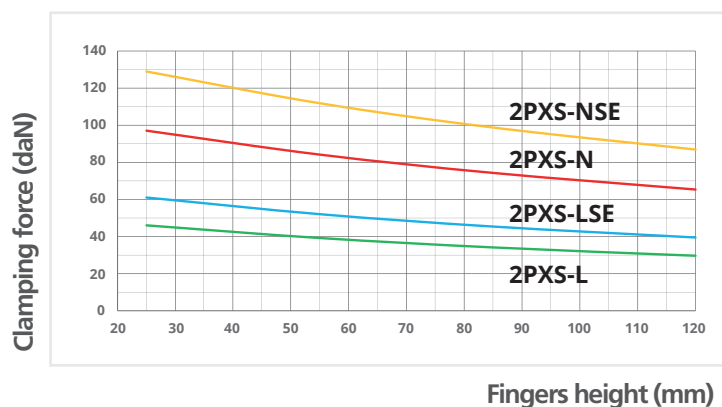
41

CLAMPING FORCE DIAGRAM 2PXS 64



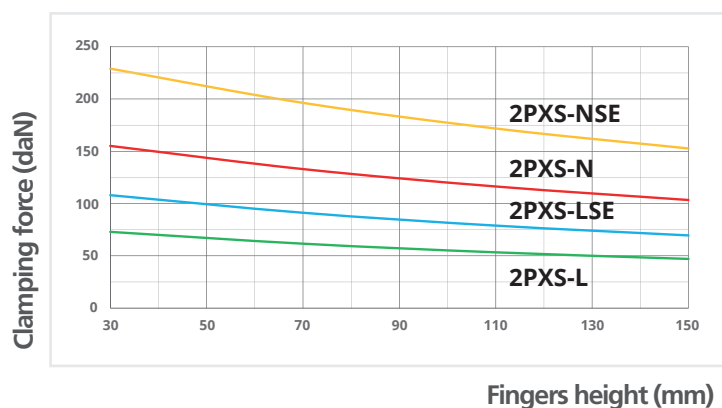
- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **100 mm**
- Max. fingers weight: **0,4 Kg**
- For I.D. clamping consider **+10%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 2PXS 80



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **120 mm**
- Max. fingers weight: **0,7 Kg**
- For I.D. clamping consider **+10%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 2PXS 100



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **150 mm**
- Max. fingers weight: **1,2 Kg**
- For I.D. clamping consider **+7%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

Notes



Application/customer benefits

- Compact, lightweight design and high gripping force thanks to optimized oval piston geometry
- Gripping force retention (LSI/LSE, NSE/NSI)
- ID and OD clamping
- Side or rear feeding
- Compatible with commercially available grippers

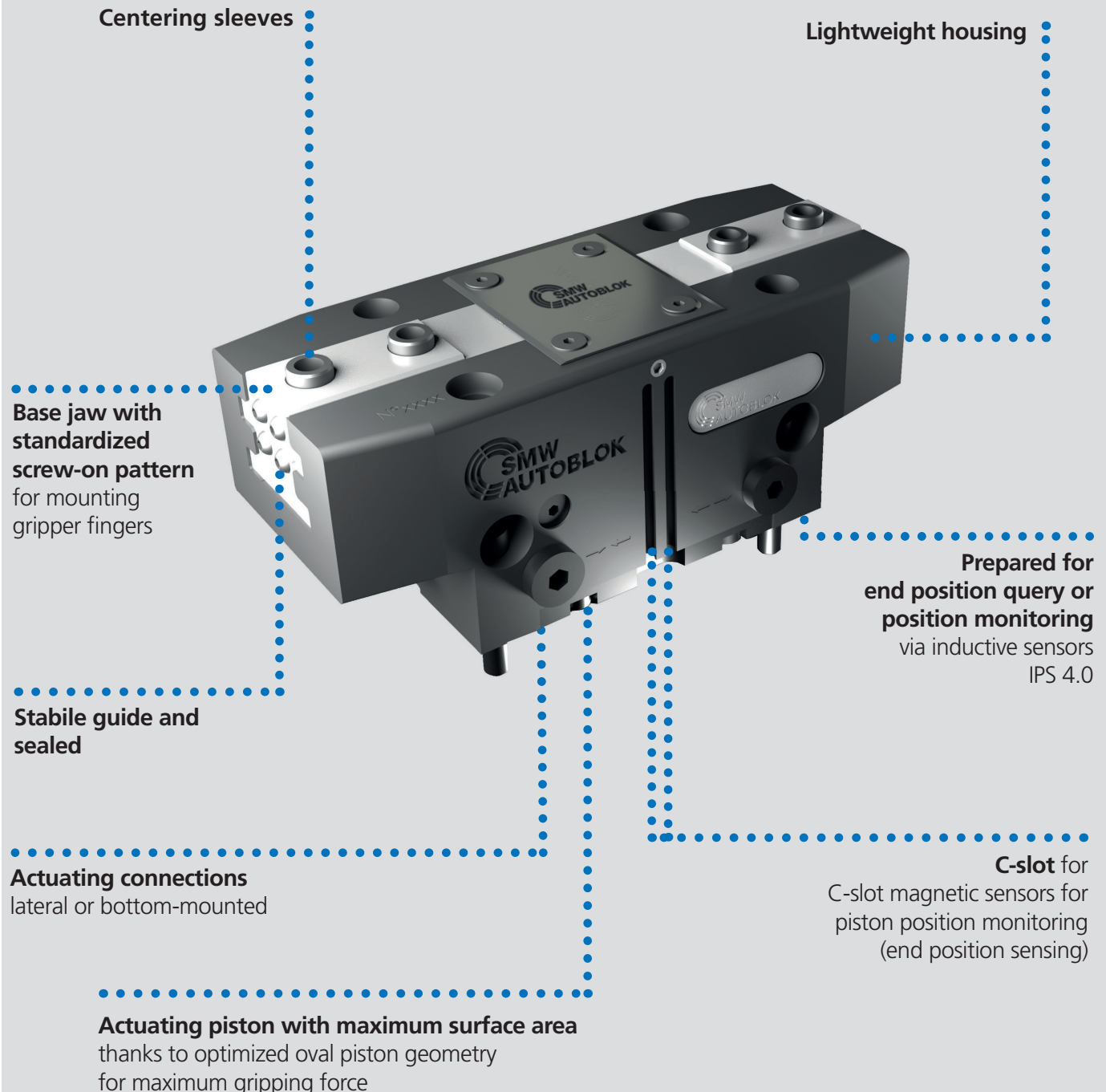
Technical features

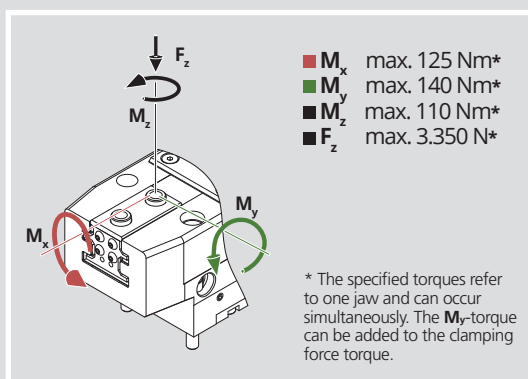
- Aluminum housing
- Protection class: IP64
- Functional parts heat-treated for high precision and long life
- Highest rigidity and repeatability: 0,02 mm
- Prepared for Air purge
- Optional: Sensor package for gripping position / end position monitoring (IPS 4.0)

Standard equipment

Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

2PXM

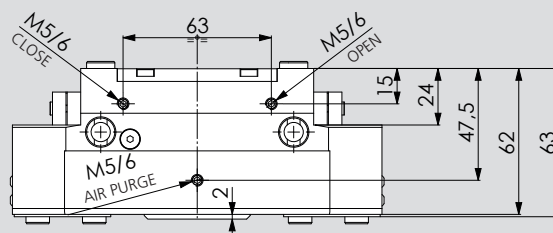
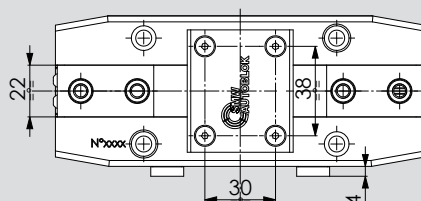
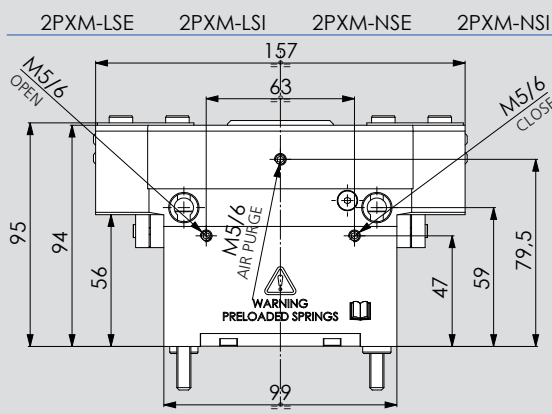
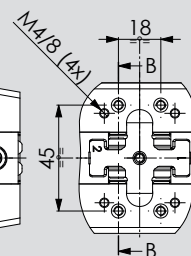
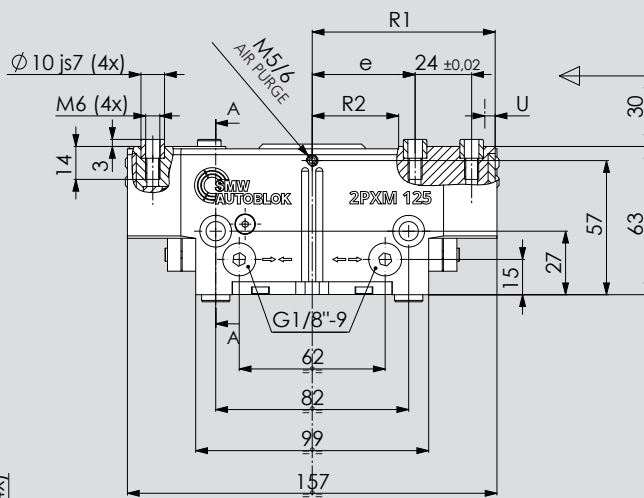
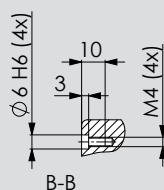
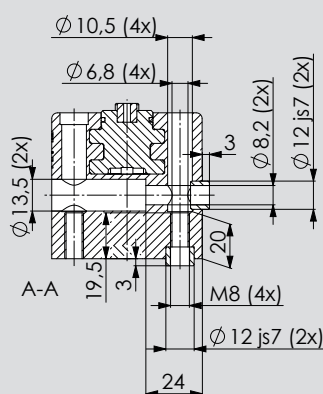




Maximal zulässige Temperatur bei Verwendung von Nennlastschalter mit Proximity-Schalter ist 60°C

max. allowed temperature using proximities is 60°C

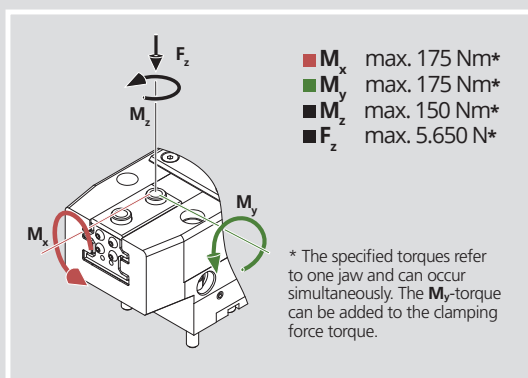
+10°C +70°C



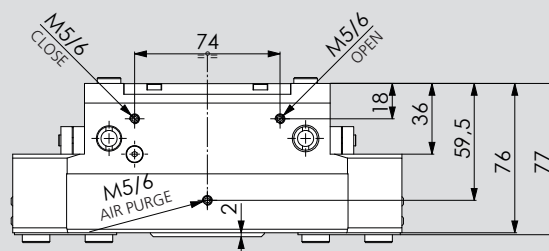
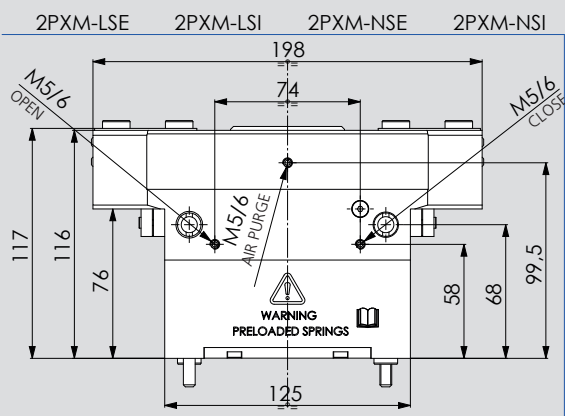
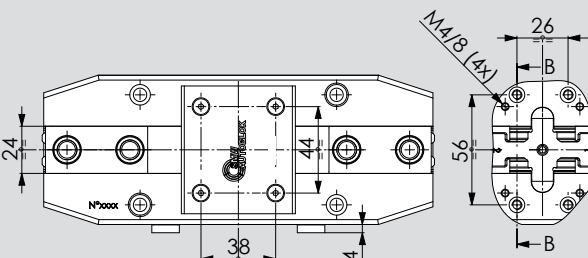
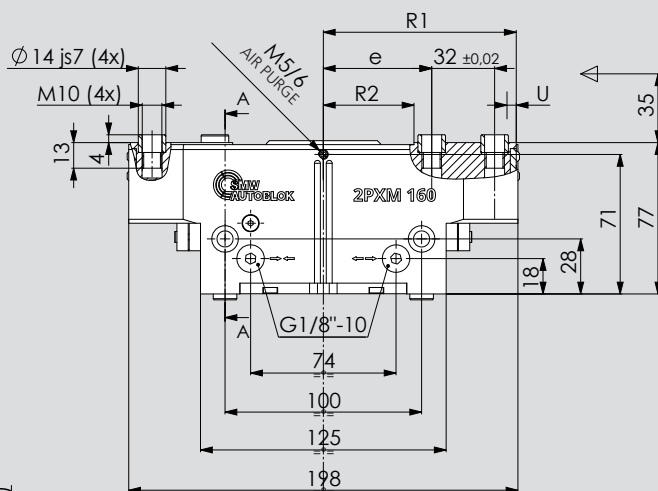
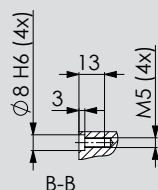
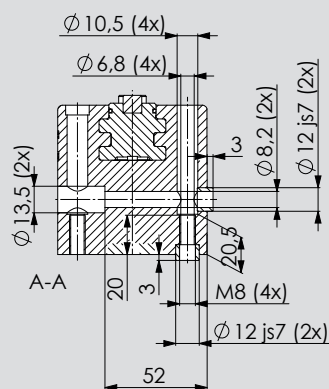
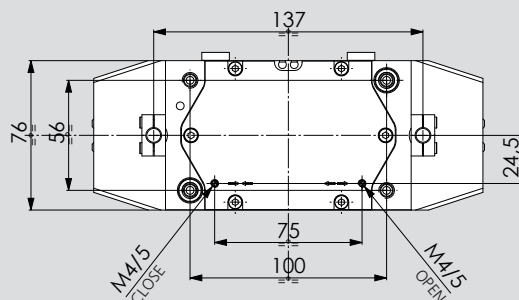
Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
2PXM-N 125	77901864	2.800	-----	6	79	2/8	0,1/0,1	1,6	14,0	30,5/36,5	71,5/77,5	23,5/29,5
2PXM-NSE 125	77902064	3.900	1.100	6	151	4/6,5	0,12/0,08	2	14,0	30,5/36,5	71,5/77,5	23,5/29,5
2PXM-NSI 125	77901164	4.070	1.100	6	157	4/6,5	0,08/0,12	2	14,0	30,5/36,5	71,5/77,5	23,5/29,5
2PXM-L 125	77901964	1.320	-----	13	79	2/8	0,1/0,1	1,6	7,0	30,5/43,5	64,5/77,5	23,5/36,5
2PXM-LSE 125	77902164	1.840	520	13	151	4/6,5	0,12/0,08	2	7,0	30,5/43,5	64,5/77,5	23,5/36,5
2PXM-LSI 125	77901264	1.920	520	13	157	4/6,5	0,08/0,12	2	7,0	30,5/43,5	64,5/77,5	23,5/36,5

LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke



max allowed temperature using proximities is 60°C



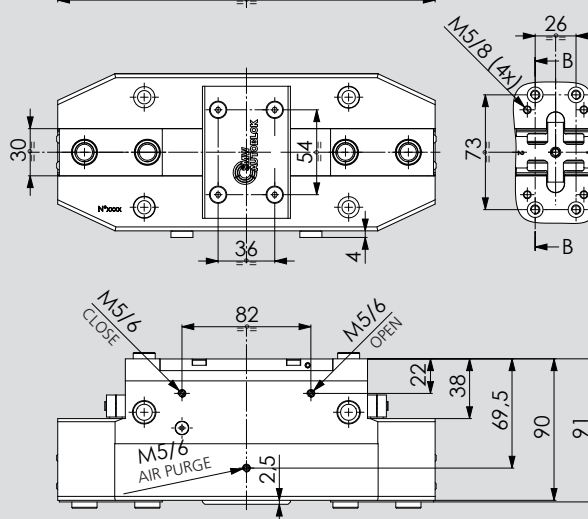
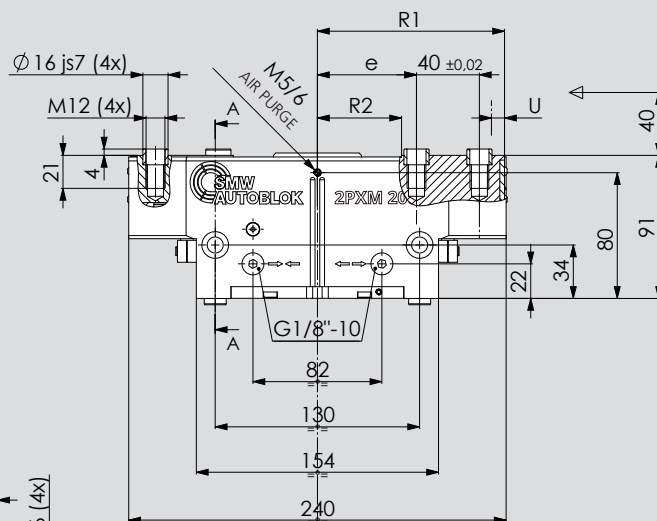
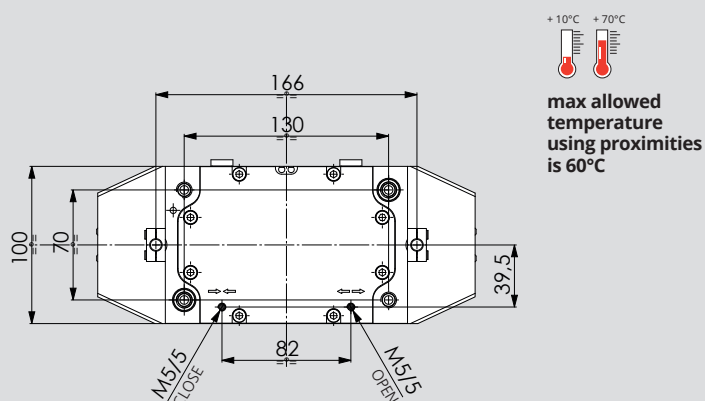
Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
2PXM-N 160	77901868	4.560	-----	8	161	2/8	0,14/0,14	2,9	23,0	38,5/46,5	90/98	29,5/37,5
2PXM-NSE 160	77902068	6.510	1.950	8	318	4/6,5	0,22/0,11	3,7	23,0	38,5/46,5	90/98	29,5/37,5
2PXM-NSI 160	77901168	6.850	1.950	8	330,5	4/6,5	0,11/0,22	3,7	23,0	38,5/46,5	90/98	29,5/37,5
2PXM-L 160	77901968	2.150	-----	16	161	2/8	0,14/0,14	2,9	11,0	38,5/54,5	82/98	29,5/45,5
2PXM-LSE 160	77902168	3.070	920	16	318	4/6,5	0,22/0,11	3,7	11,0	38,5/54,5	82/98	29,5/45,5
2PXM-LSI 160	77901268	3.240	920	16	330,5	4/6,5	0,11/0,22	3,7	11,0	38,5/54,5	82/98	29,5/45,5

LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

2PXM 200

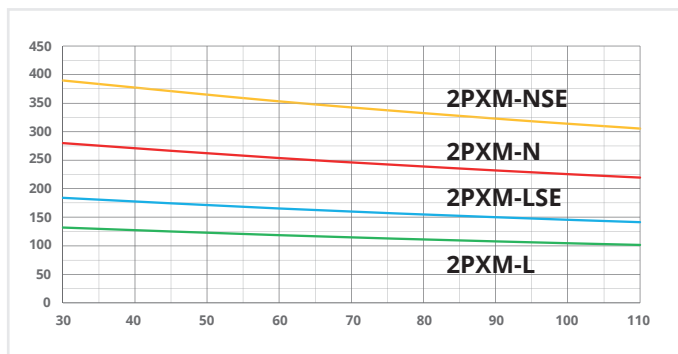
Pneumatic gripper



Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
2PXM-N 200	77901872	5.560	-----	14	373	2/8	0,3/0,3	5,8	28,0	38/52	105/119	28,5/42,5
2PXM-NSE 200	77902072	7.560	2.000	14	733	4/6,5	0,5/0,3	7,3	28,0	38/52	105/119	28,5/42,5
2PXM-NSI 200	77901172	7.900	2.000	14	758	4/6,5	0,3/0,5	7,3	28,0	38/52	105/119	28,5/42,5
2PXM-L 200	77901972	3.700	-----	25	373	2/8	0,3/0,3	5,8	18,5	38/63	94/119	28,5/53,5
2PXM-LSE 200	77902172	5.020	1.320	25	733	4/6,5	0,5/0,3	7,3	18,5	38/63	94/119	28,5/53,5
2PXM-LSI 200	77901272	5.260	1.320	25	758	4/6,5	0,3/0,5	7,3	18,5	38/63	94/119	28,5/53,5

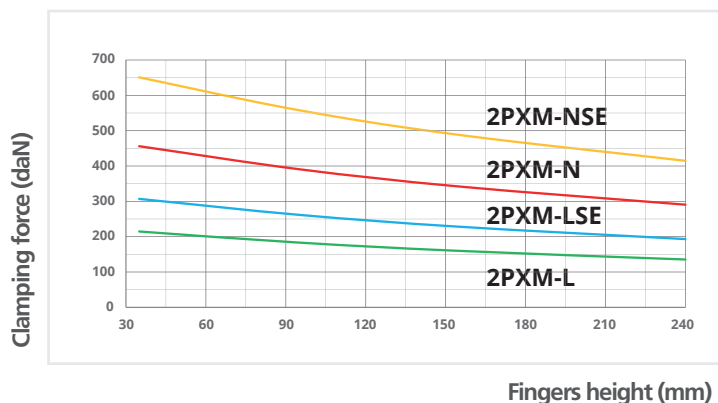
47

CLAMPING FORCE DIAGRAM 2PXM 125



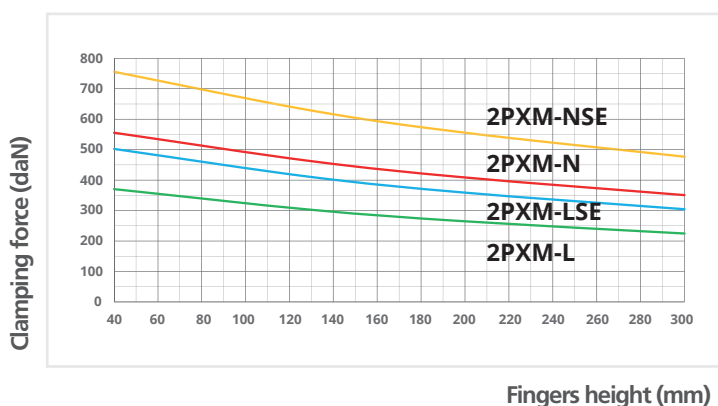
- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **200 mm**
- Max. fingers weight: **2,3 Kg**
- For I.D. clamping consider **+5%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 2PXM 160



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **240 mm**
- Max. fingers weight: **3,7 Kg**
- For I.D. clamping consider **+5%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 2PXM 200



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **300 mm**
- Max. fingers weight: **6,7 Kg**
- For I.D. clamping consider **+5%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

Notes



Application/customer benefits

- Compact, lightweight design and high gripping force thanks to optimized oval piston geometry
- Gripping force retention (LSI/LSE, NSE/NSI)
- ID and OD clamping
- Side or rear feeding
- Compatible with commercially available grippers

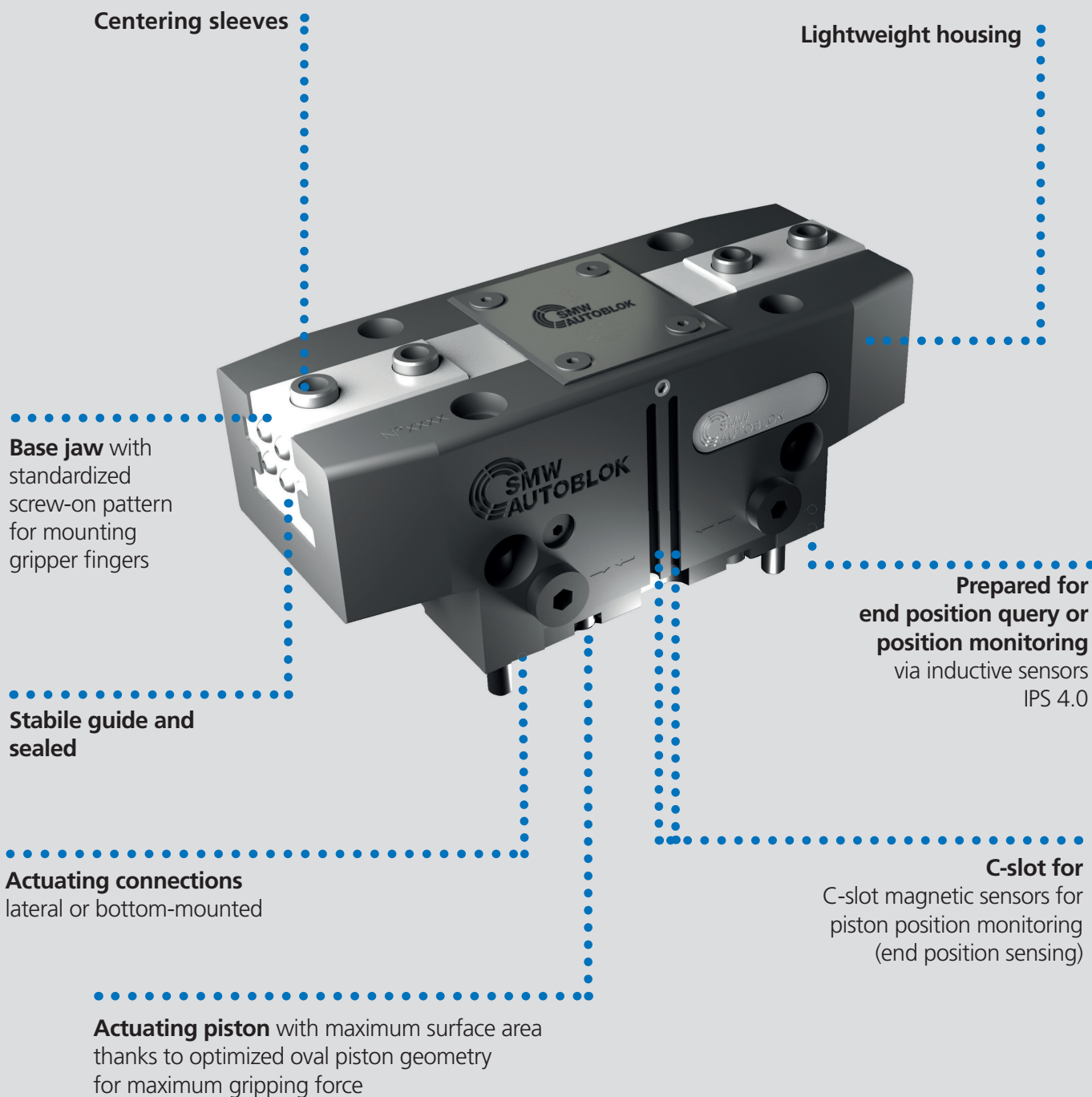
Technical features

- Aluminum housing
- Protection class: IP64
- Functional parts heat-treated for high precision and long life
- Highest rigidity and repeatability: 0,04 mm
- Prepared for Air purge
- Optional: Sensor package for gripping position / end position monitoring (IPS 4.0)

Standard equipment

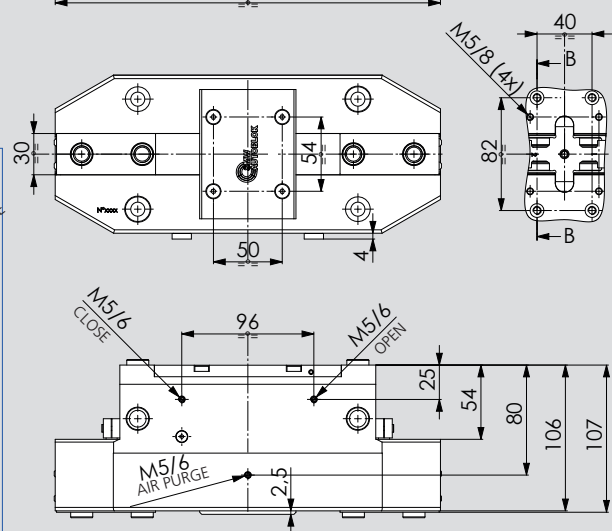
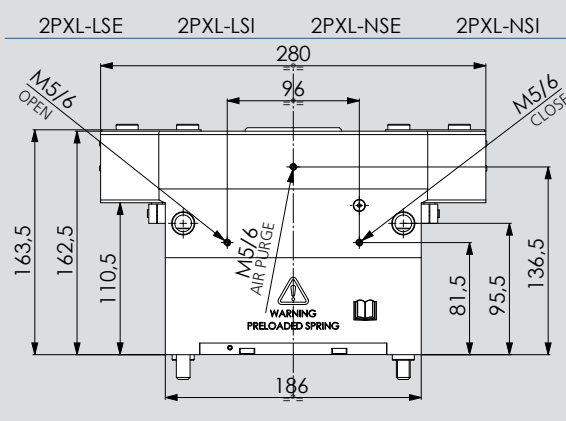
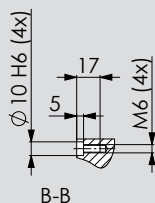
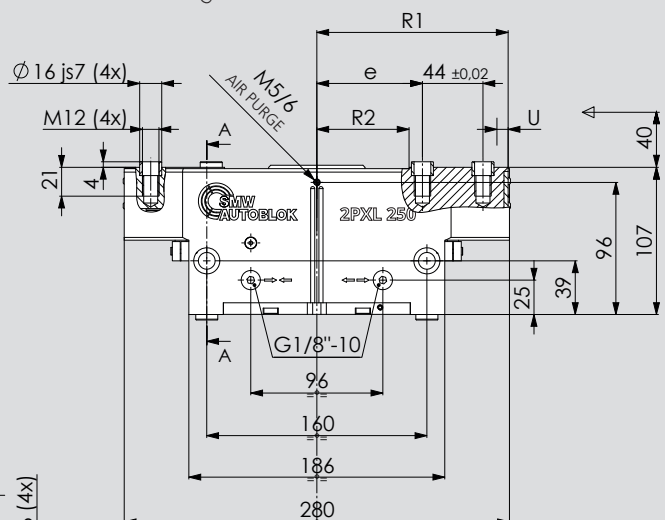
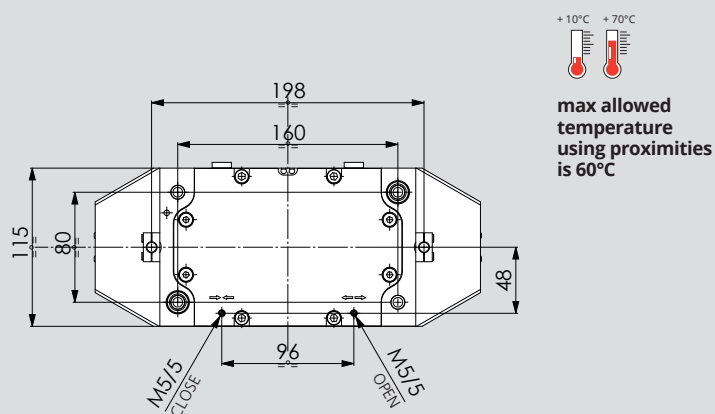
Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

2PXL



2PXL 250

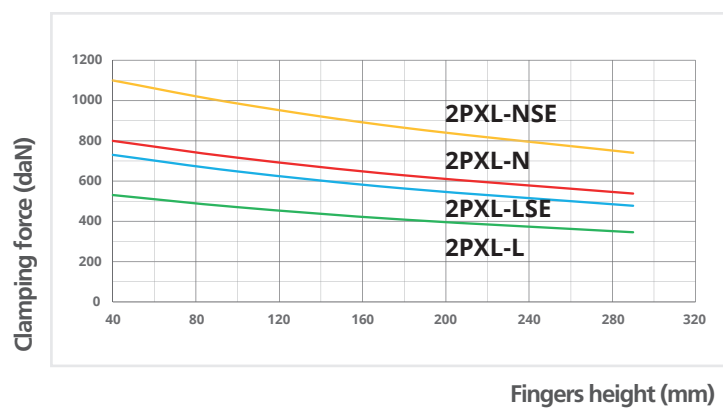
Pneumatic gripper



LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

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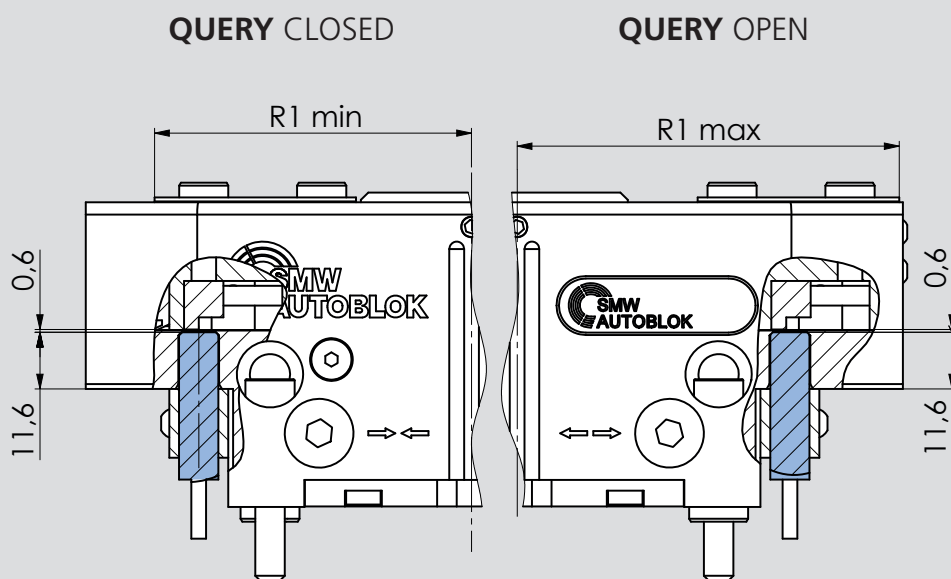
CLAMPING FORCE DIAGRAM 2PXL 250



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **350 mm**
- Max. fingers weight: **9,2 Kg**
- For I.D. clamping consider **+3%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

- Gripping position monitoring via inductive sensors
- End position monitoring via inductive sensors

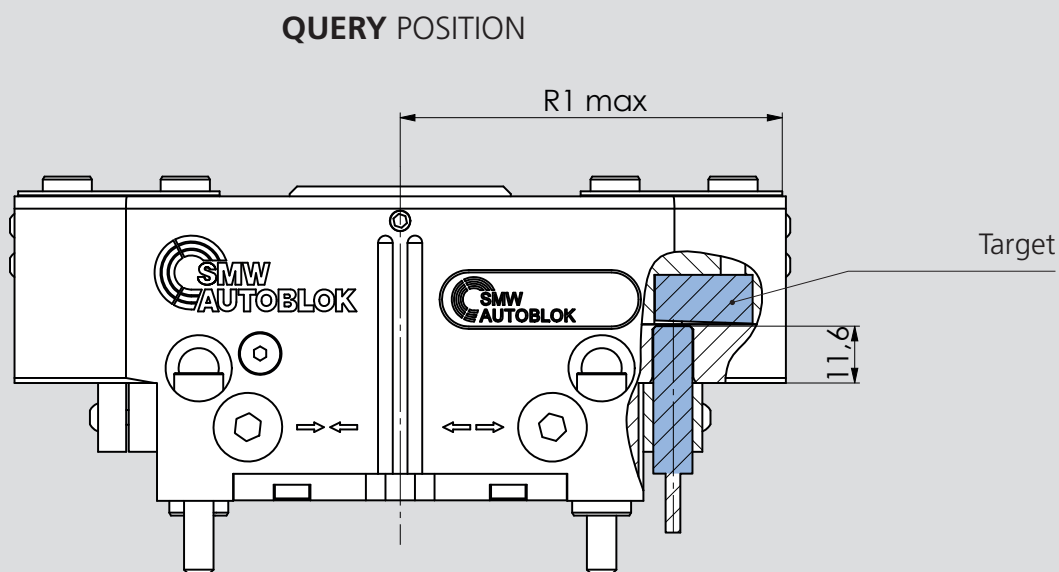
End position monitoring



Type	SENSOR Id. No.*
IPS 4.0 M08-PNP	0E012802

*You can find more information on page 92.

Gripping position monitoring



Type	SENSOR Id. No.*	TARGET Id. No.
IPS 4.0 M08x040 0-10V e-sensing	0E012810	92262163

*You can find more information on page 93.



Application/customer benefits

- Compact and light design and high gripping force
- ID and OD clamping
- Integrated greasing system on base jaw (use SMW-AUTOBLOK K67 grease)

Technical features

- Aluminum housing
- Protection class: IP40
- Functional parts heat-treated for high precision and long life
- Highest rigidity and repeatability: 0,01 mm
- Prepared for Air purge
- Optional: Spring workstop, Pneumatic stroke control valve, Sensor package

Standard equipment

Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

3PXS

Centering sleeves



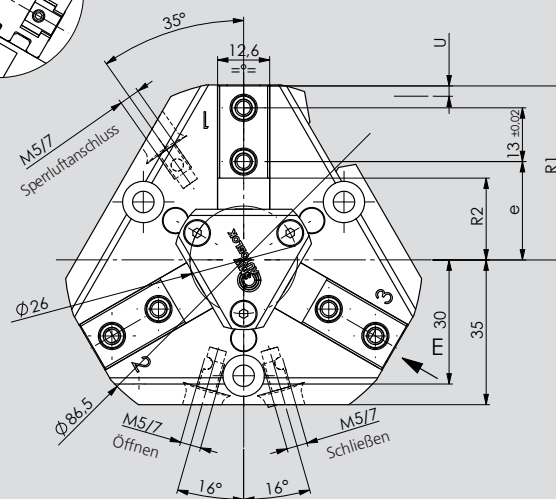
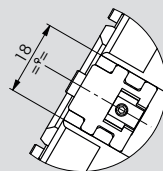
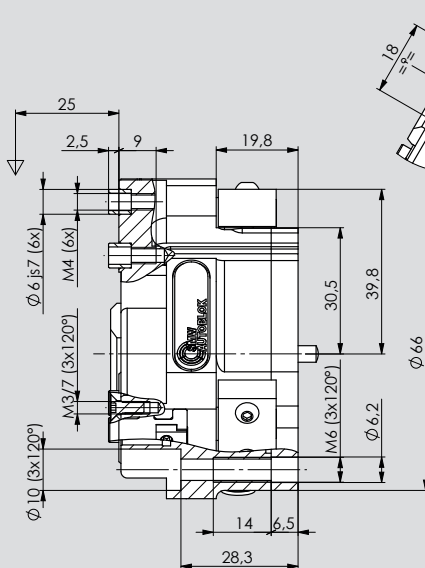
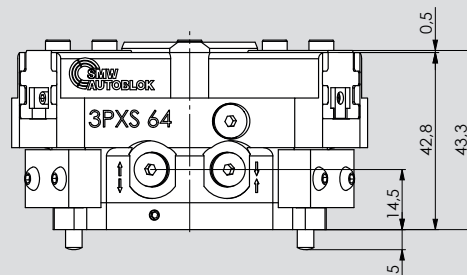
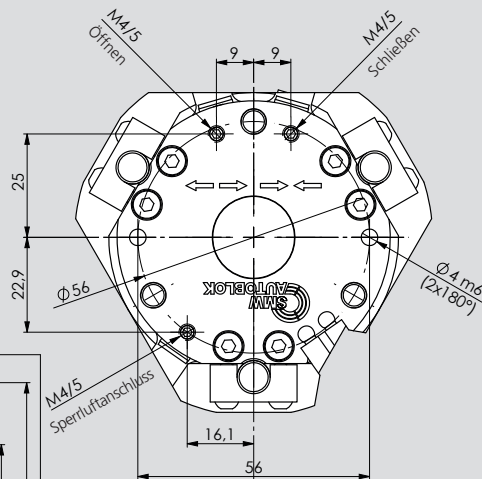
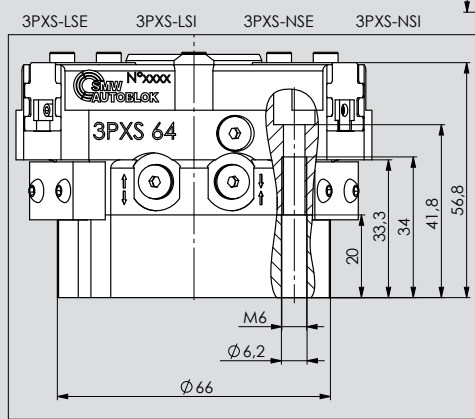
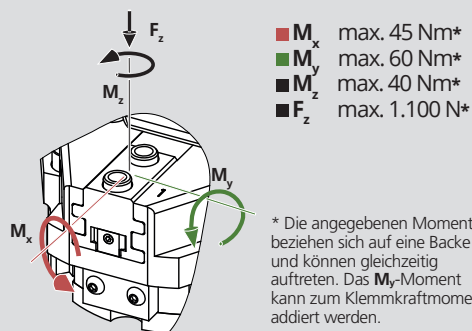
Lightweight housing

Base jaw with standardized screw-on pattern for mounting gripper fingers

Prepared for end position query or position monitoring via inductive sensors IPS 4.0

Stabile guide

Maximal zulässige Temperatur bei Verwendung von Näherungsschalter beträgt 60°C.



Technische Änderungen vorbehalten.

Für genauere Informationen steht Ihnen unser Kundenservice gerne zur Verfügung.

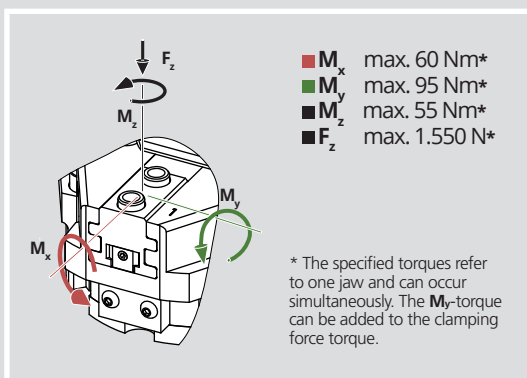
Typ	Id.-Nr.	Greifkraft (N) bei 6 bar	Federkraft min. (N)	U (mm) Backenhub	Luftmenge (cm³)	Druck (bar) min./max.	Öffnen/ Schließen Zeit (s) bei 6 bar	Gewicht (Kg)	Empfohlenes Werkstück- gewicht (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXS-N 64	77920407	1.300	-----	3	19,5	2/8	0,03/0,03	0,5	6,5	17,5/20,5	39/42	13,5/16,5
3PXS-NSE 64	77920507	1.600	300	3	36	4/6,5	0,05/0,03	0,6	6,5	17,5/20,5	39/42	13,5/16,5
3PXS-NSI 64	77920607	1.790	300	3	38,5	4/6,5	0,03/0,05	0,6	6,5	17,5/20,5	39/42	13,5/16,5
3PXS-L 64	77920107	630	-----	6	19,5	2/8	0,03/0,03	0,5	3,0	17,5/23,5	36/42	13,5/19,5
3PXS-LSE 64	77920207	780	150	6	36	4/6,5	0,05/0,03	0,6	3,0	17,5/23,5	36/42	13,5/19,5
3PXS-LSI 64	77920307	850	150	6	38,5	4/6,5	0,03/0,05	0,6	3,0	17,5/23,5	36/42	13,5/19,5

LSI/LSE, NSE/NSI = Greifkraftherhalt (E = Außenspannung, I = Innenspannung), L = Langhub, N = Normalhub

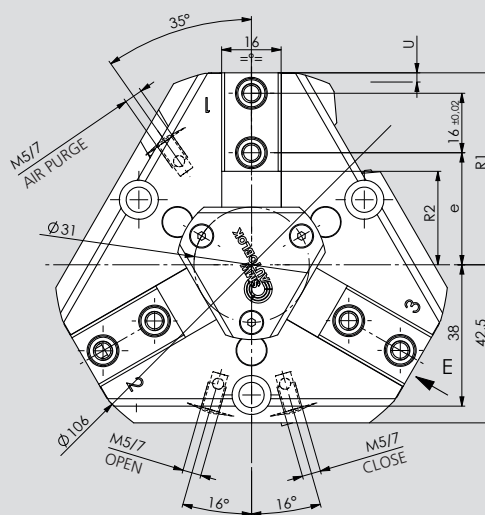
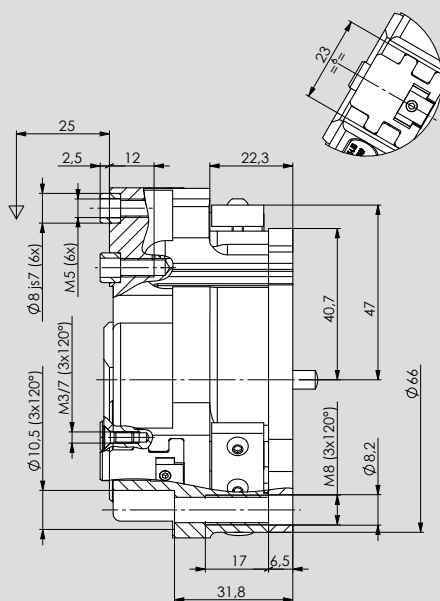
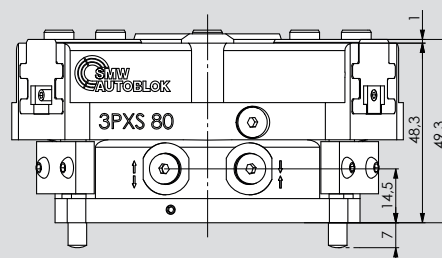
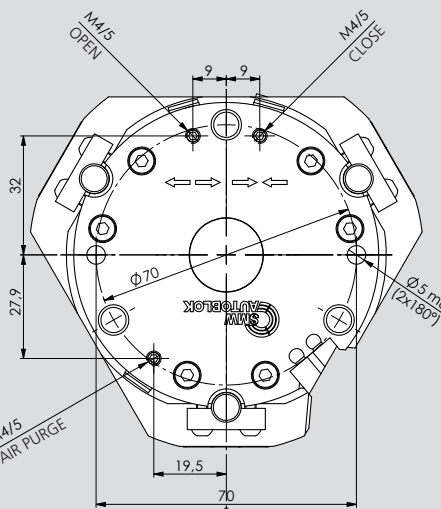
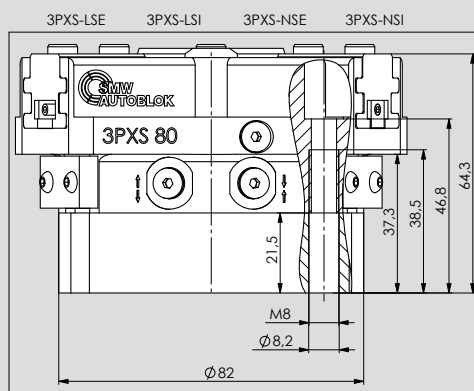
Centric gripper

Pneumatic gripper

Dimension and technical data



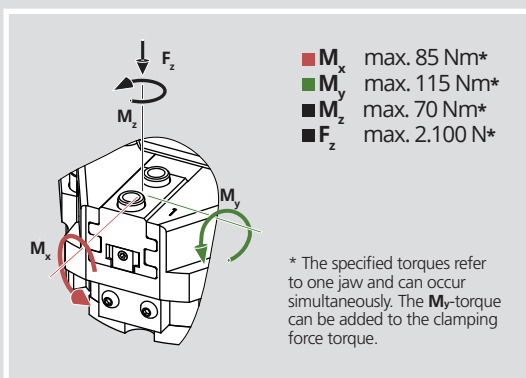
max allowed temperature using proximities is 60°C



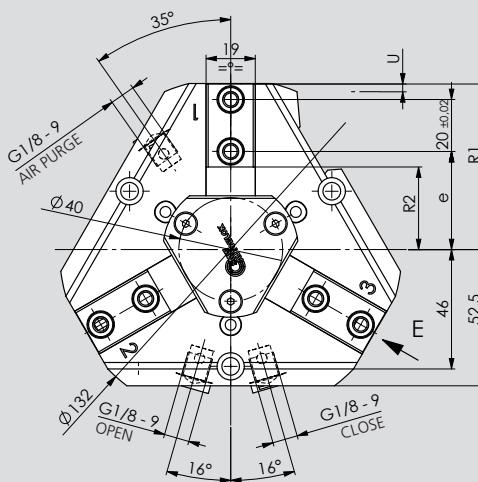
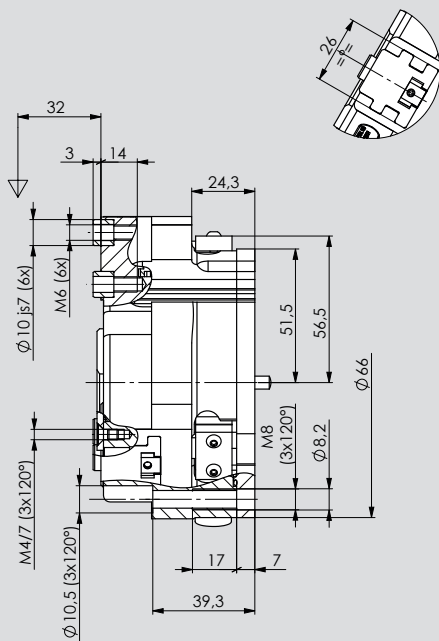
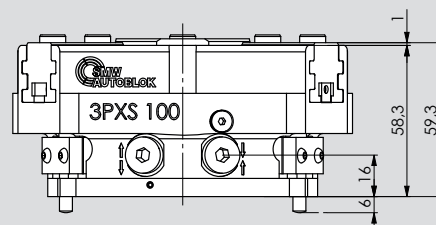
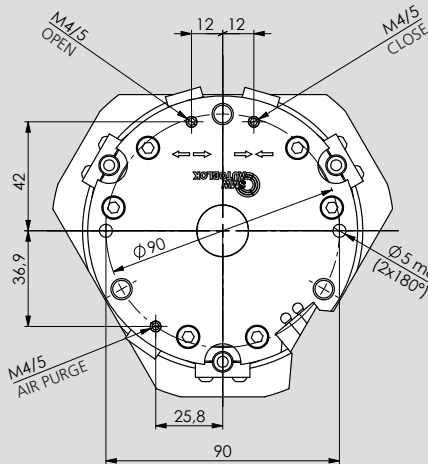
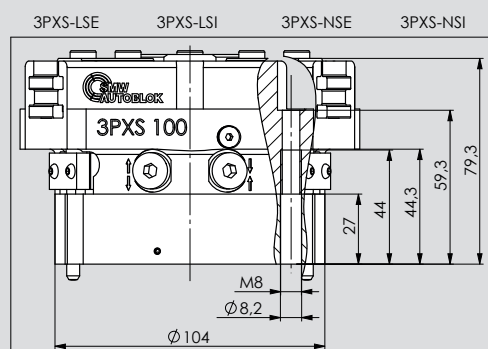
Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXS-N 80	77920409	2.350	----	4	45,5	2/8	0,05/0,05	0,8	11,5	22/26	47,5/51,5	17/21
3PXS-NSE 80	77920509	3.050	700	4	78,5	4/6,5	0,06/0,04	1	11,5	22/26	47,5/51,5	17/21
3PXS-NSI 80	77920609	3.270	700	4	81,5	4/6,5	0,04/0,06	1	11,5	22/26	47,5/51,5	17/21
3PXS-L 80	77920109	1.100	----	8	45,5	2/8	0,05/0,05	0,8	5,5	22/30	43,5/51,5	17/25
3PXS-LSE 80	77920209	1.400	300	8	78,5	4/6,5	0,06/0,04	1	5,5	22/30	43,5/51,5	17/25
3PXS-LSI 80	77920309	1.500	300	8	81,5	4/6,5	0,04/0,06	1	5,5	22/30	43,5/51,5	17/25

LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke



max allowed temperature using proximities is 60°C

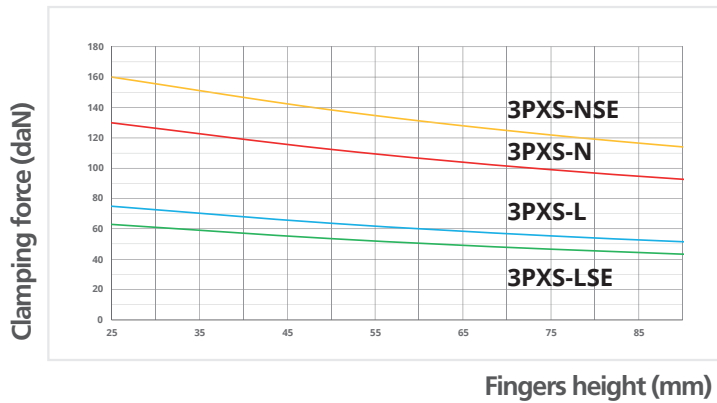


Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXS-N 100	77920411	4.100	-----	5	94,5	2/8	0,12/0,12	1,7	20,0	27,5/32,5	59/64	21,5/26,5
3PXS-NSE 100	77920511	5.450	1.350	5	171	4/6,5	0,22/0,12	2	20,0	27,5/32,5	59/64	21,5/26,5
3PXS-NSI 100	77920611	5.730	1.350	5	176	4/6,5	0,12/0,22	2	20,0	27,5/32,5	59/64	21,5/26,5
3PXS-L 100	77920111	1.950	-----	10	94,5	2/8	0,12/0,12	1,7	9,5	27,5/37,5	54/64	21,5/31,5
3PXS-LSE 100	77920211	2.600	650	10	171	4/6,5	0,22/0,12	2	9,5	27,5/37,5	54/64	21,5/31,5
3PXS-LSI 100	77920311	2.730	650	10	176	4/6,5	0,12/0,22	2	9,5	27,5/37,5	54/64	21,5/31,5

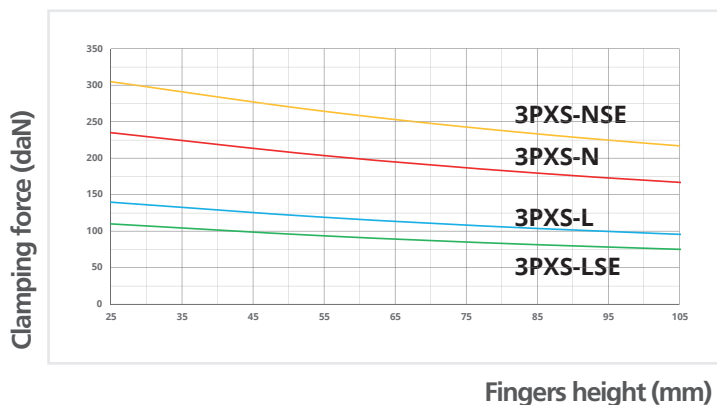
LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

CLAMPING FORCE DIAGRAM 3PXS 64



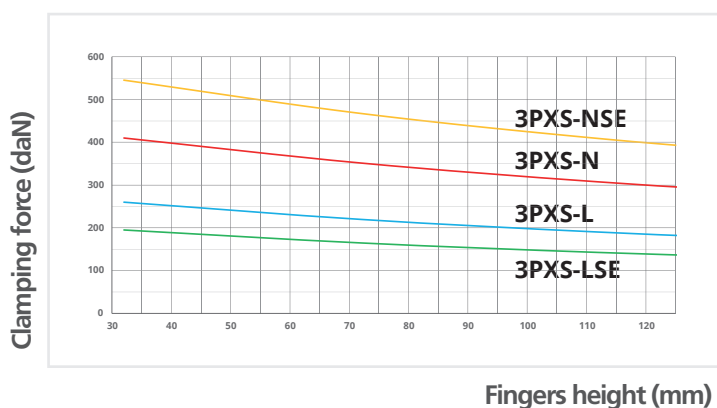
- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **90 mm**
- Max. fingers weight: **0,4 Kg**
- For I.D. clamping consider **+10%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 3PXS 80



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **105 mm**
- Max. fingers weight: **0,6 Kg**
- For I.D. clamping consider **+7%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 3PXS 100



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **125 mm**
- Max. fingers weight: **1,1 Kg**
- For I.D. clamping consider **+5%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

Notes



Application/customer benefits

- Compact and light design and high gripping force
- ID and OD clamping
- Integrated greasing system on base jaw (use SMW-AUTOBLOK K67 grease)

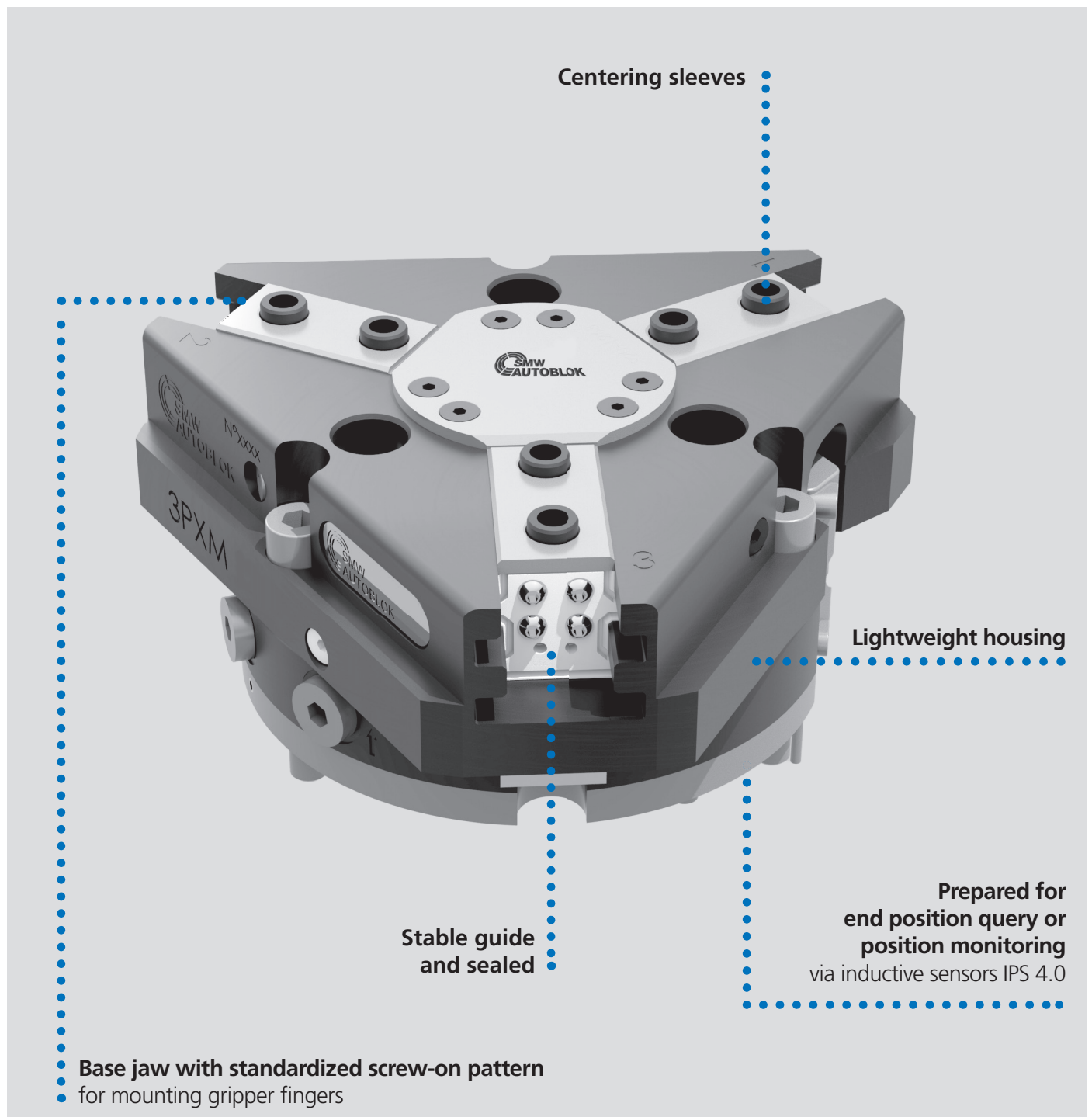
Technical features

- Aluminum housing
- Sealed / Protection class: IP64
- Functional parts heat-treated for high precision and long life
- Highest rigidity and repeatability: 0,02 mm
- Prepared for Air purge
- Optional: Spring workshop, pneumatic stroke control valve, Sensor package

Standard equipment

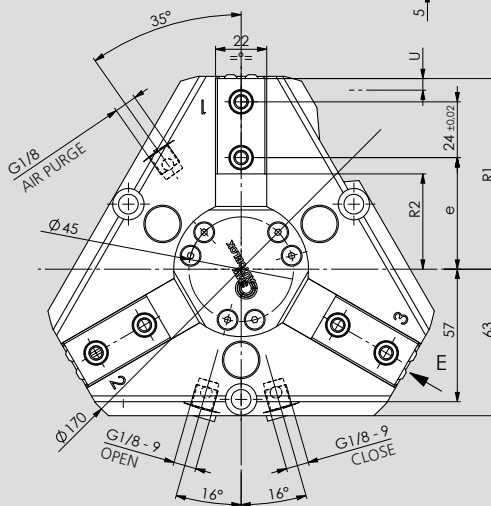
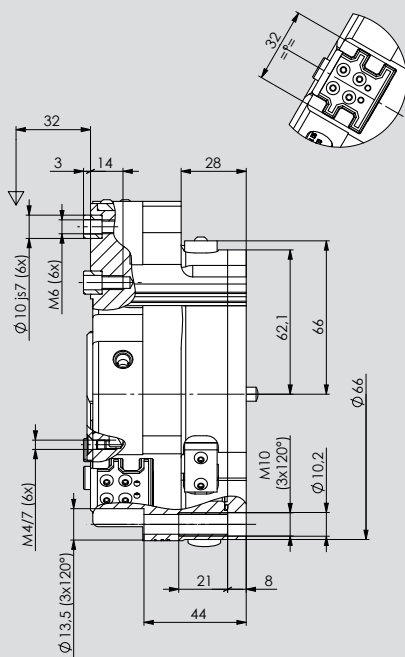
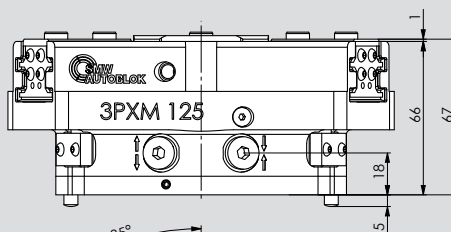
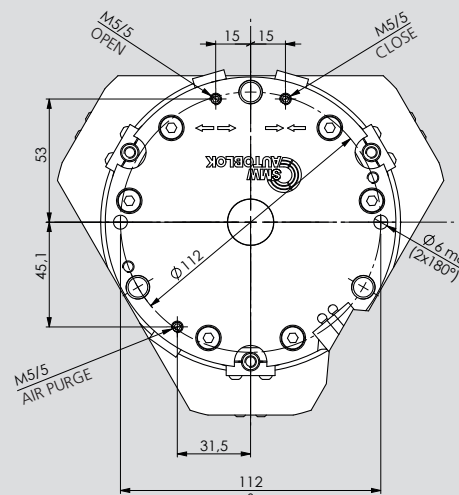
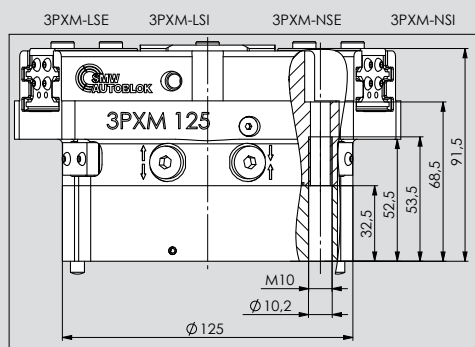
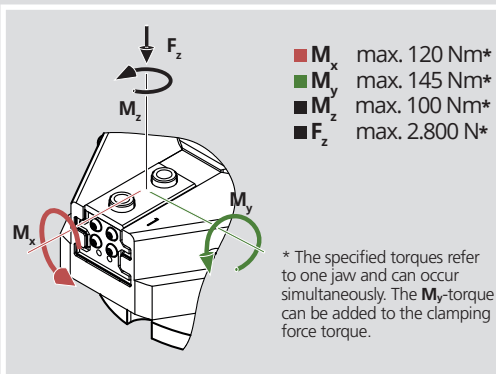
Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

3PXM





max allowed temperature using proximities is 60°C



Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXM-N 125	77920413	6.750	-----	6	200,5	2/8	0,2/0,2	2,7	33,5	35/41	76/82	28/34
3PXM-NSE 125	77920513	9.450	2.700	6	357	4/6,5	0,32/0,17	3,3	33,5	35/41	76/82	28/34
3PXM-NSI 125	77920613	9.900	2.700	6	366,5	4/6,5	0,17/0,32	3,3	33,5	35/41	76/82	28/34
3PXM-L 125	77920113	3.200	-----	13	200,5	2/8	0,2/0,2	2,7	16,0	35/48	69/82	28/41
3PXM-LSE 125	77920213	4.500	1.300	13	357	4/6,5	0,32/0,17	3,3	16,0	35/48	69/82	28/41
3PXM-LSI 125	77920313	4.700	1.300	13	366,5	4/6,5	0,17/0,32	3,3	16,0	35/48	69/82	28/41

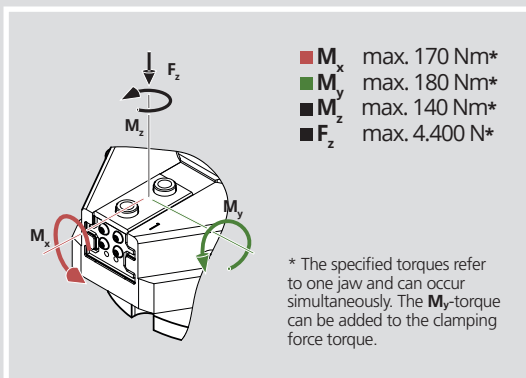
LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

3PXM 160

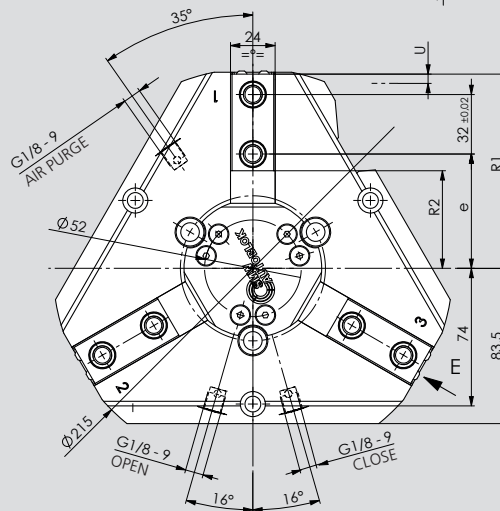
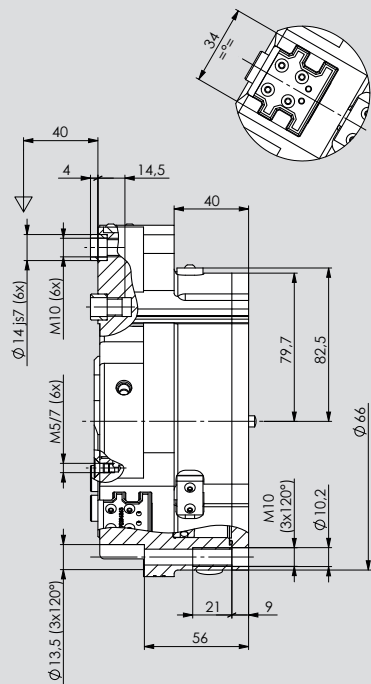
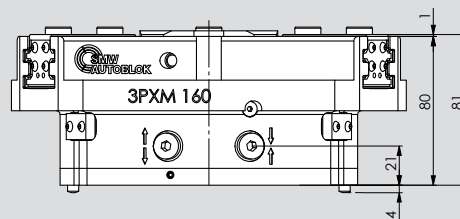
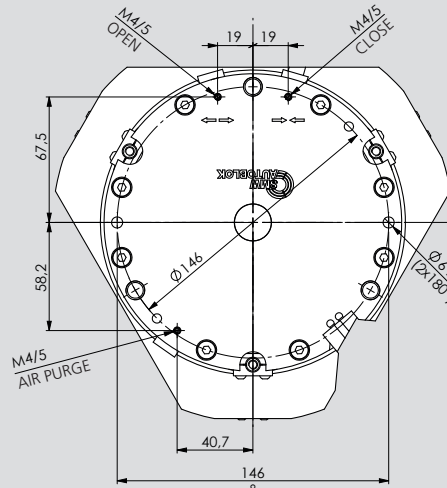
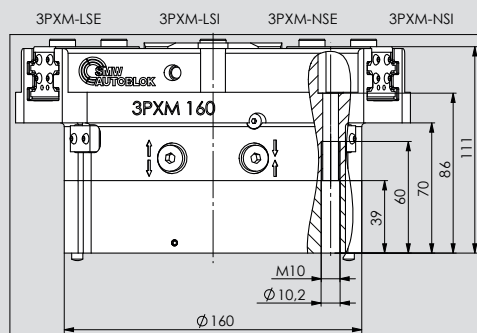
Centric gripper

Pneumatic gripper

Dimension and technical data



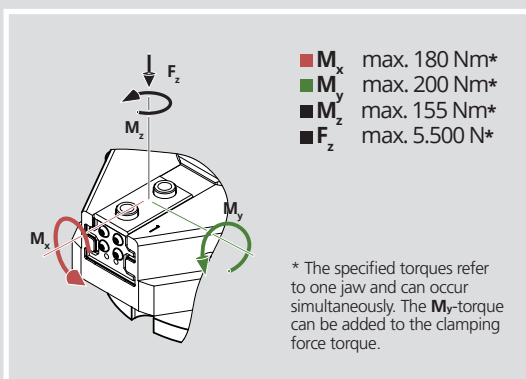
max allowed temperature using proximities is 60°C



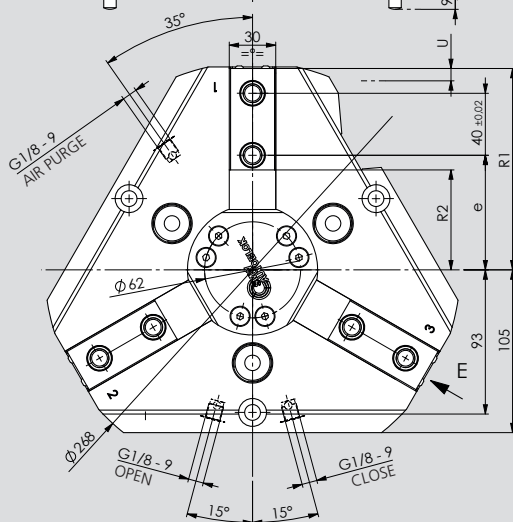
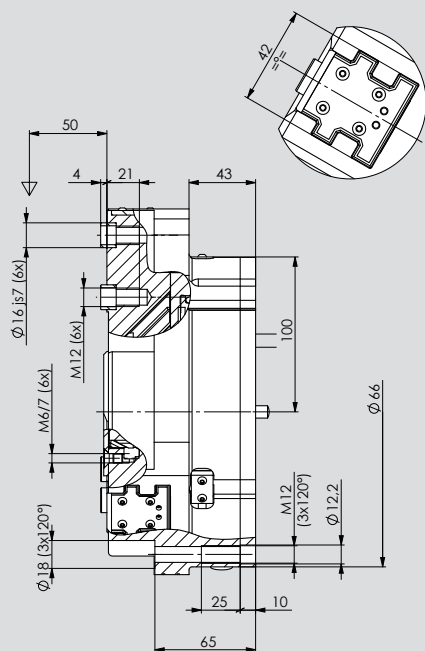
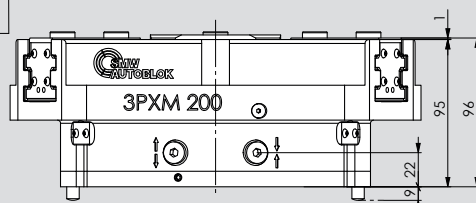
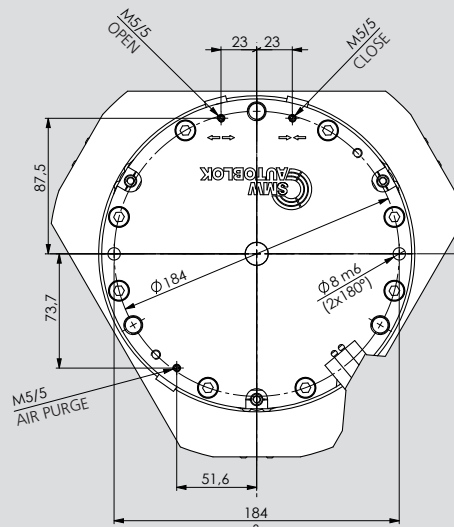
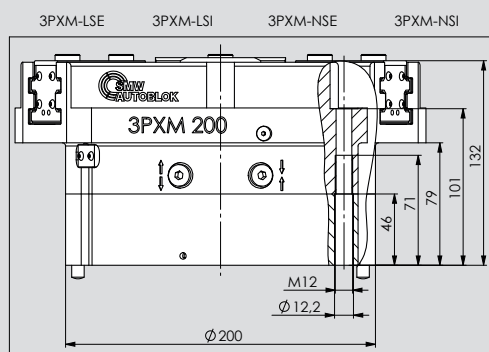
Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm ³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXM-N 160	77920417	12.700	-----	8	480	2/8	0,44/0,44	5,2	63,5	45/53	96,5/104,5	36/44
3PXM-NSE 160	77920517	17.500	4800	8	833	4/6,5	0,66/0,36	6,5	63,5	45/53	96,5/104,5	36/44
3PXM-NSI 160	77920617	18.000	4800	8	847,5	4/6,5	0,36/0,66	6,5	63,5	45/53	96,5/104,5	36/44
3PXM-L 160	77920117	6.000	-----	16	480	2/8	0,44/0,44	5,2	30,0	45/61	88,5/104,5	36/52
3PXM-LSE 160	77920217	8.300	2300	16	833	4/6,5	0,66/0,36	6,5	30,0	45/61	88,5/104,5	36/52
3PXM-LSI 160	77920317	8.550	2300	16	847,5	4/6,5	0,36/0,66	6,5	30,0	45/61	88,5/104,5	36/52

LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke



max allowed temperature using proximities is 60°C

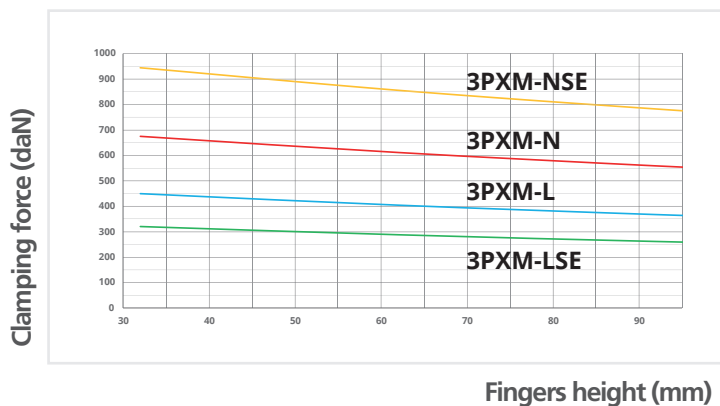


Subject to technical changes.
For more detailed information please ask our customer service.

Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm ³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXM-N 200	77920421	12.200	-----	14	866	2/8	1,05/1,05	10,1	60,0	49/63	116/130	39,5/53,5
3PXM-NSE 200	77920521	16.300	4100	14	1476,5	4/6,5	1,38/0,9	12,2	60,0	49/63	116/130	39,5/53,5
3PXM-NSI 200	77920621	16.800	4100	14	1502	4/6,5	0,9/1,38	12,2	60,0	49/63	116/130	39,5/53,5
3PXM-L 200	77920121	8.100	-----	25	866	2/8	1,05/1,05	10,1	40,5	49/74	105/130	39,5/64,5
3PXM-LSE 200	77920221	10.850	2750	25	1476,5	4/6,5	1,38/0,9	12,2	40,5	49/74	105/130	39,5/64,5
3PXM-LSI 200	77920321	11.200	2750	25	1502	4/6,5	0,9/1,38	12,2	40,5	49/74	105/130	39,5/64,5

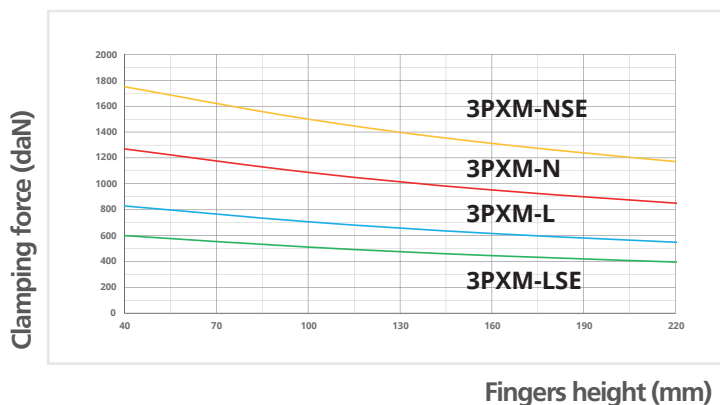
LSI/LSE, NSE/NSI = gripping force retention (E = external clamping, I = internal clamping), L = long stroke, N = normal stroke

CLAMPING FORCE DIAGRAM 3PXM 125



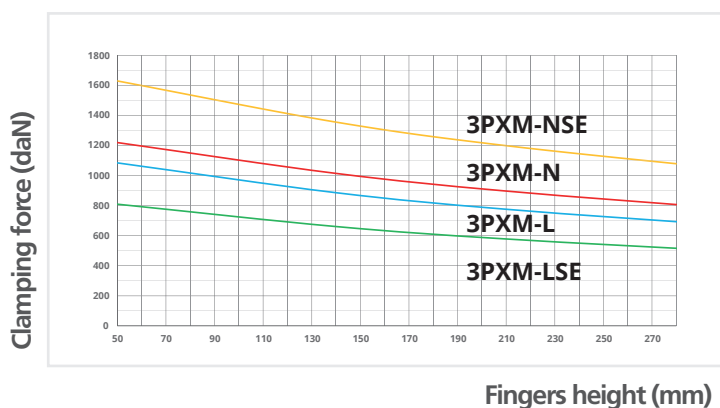
- Clamping force calculated at **6 bar**
- Max. recommended fingers height: **160 mm**
- Max. fingers weight: **2 Kg**
- For I.D. clamping consider **+5%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 3PXM 160



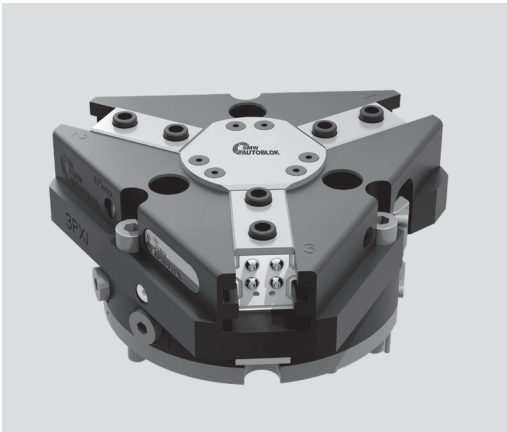
- Clamping force calculated at **6 bar**
- Max. recommended fingers height: **220 mm**
- Max. fingers weight: **3,5 Kg**
- For I.D. clamping consider **+3%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

CLAMPING FORCE DIAGRAM 3PXM 200



- Clamping force calculated at **6 bar**
- Max. recommended fingers height: **280 mm**
- Max. fingers weight: **6,5 Kg**
- For I.D. clamping consider **+3%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

Notes



Application/customer benefits

- Compact and light design and high gripping force
- ID and OD clamping
- Integrated greasing system on base jaw (use SMW-AUTOBLOK K67 grease)

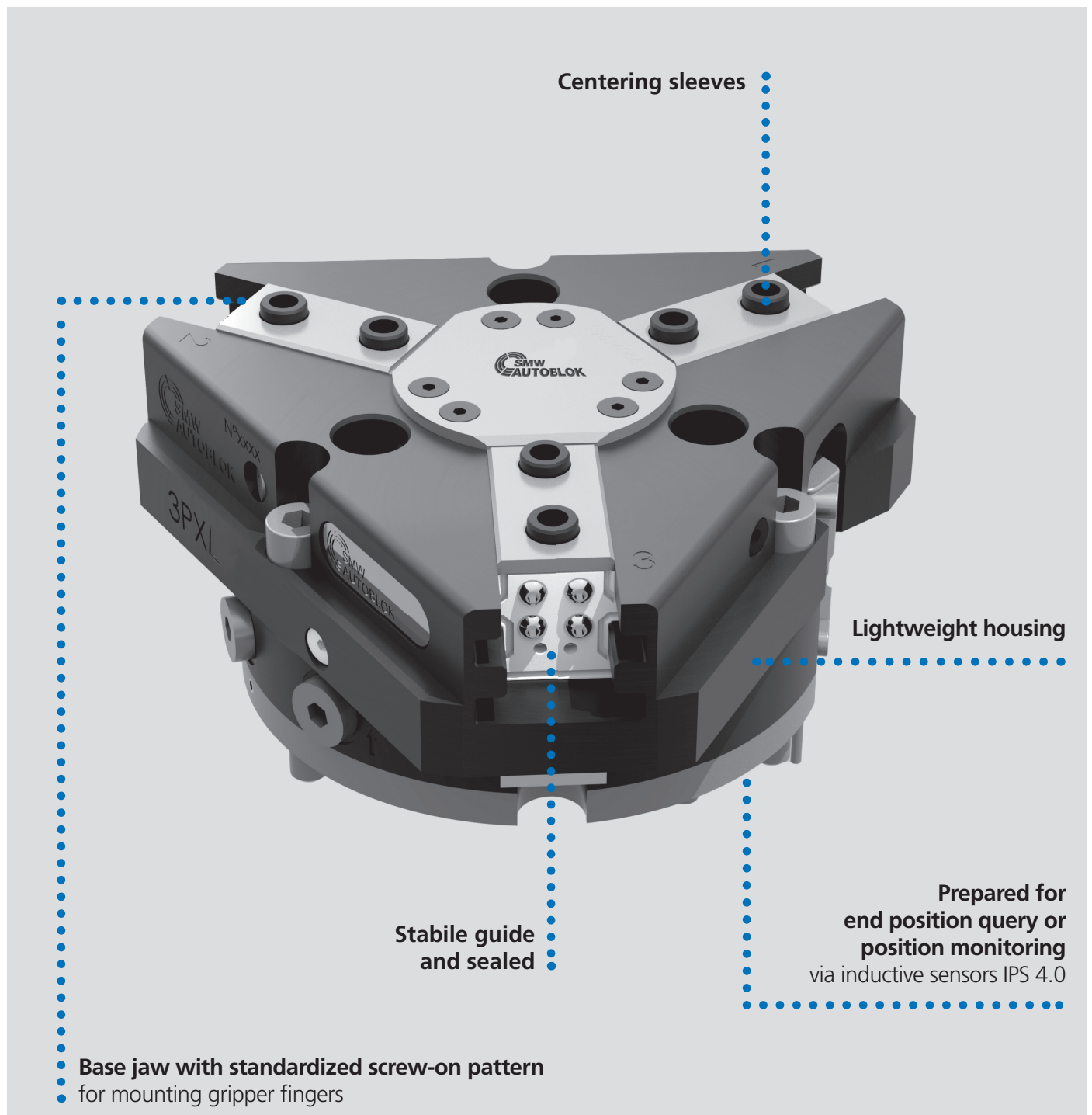
Technical features

- Aluminum housing
- Sealed / Protection class: IP64
- Functional parts heat-treated for high precision and long life
- Highest rigidity and repeatability: 0,04 mm
- Air purge
- Optional: Spring workstop, Sensor package

Standard equipment

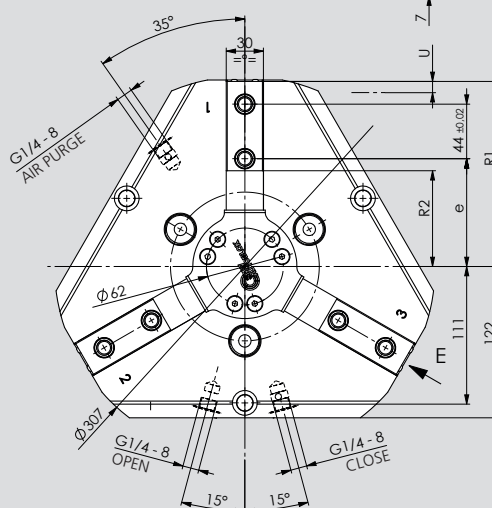
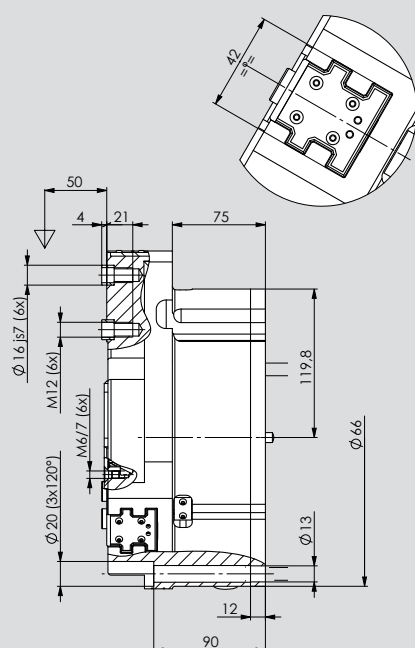
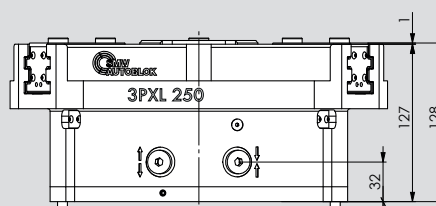
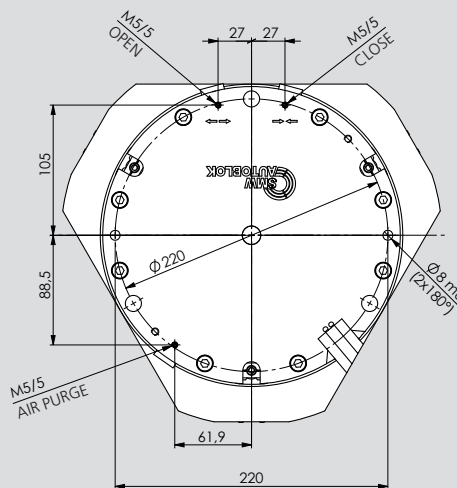
Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

3PXL



3PXL 250

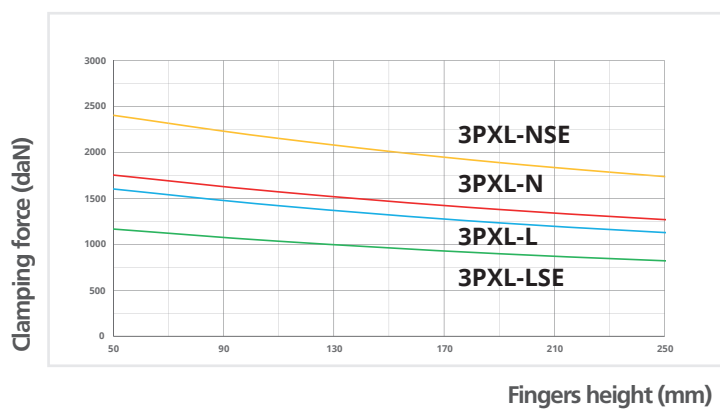
Pneumatic gripper



Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Opening / Closing time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)	e (mm) min./max.	R1 (mm) min./max.	R2 (mm) min./max.
3PXL-N 250	77920426	17.550	-----	17	1496,5	2/8	1,23/1,23	17	87,5	57/74	132,5/149,5	47/64
3PXL-NSE 250	77920526	24.050	6.500	17	2571,5	4/6,5	2,05/1,08	21	87,5	57/74	132,5/149,5	47/64
3PXL-NSI 250	77920626	24.800	6.500	17	2616,5	4/6,5	1,08/2,05	21	87,5	57/74	132,5/149,5	47/64
3PXL-L 250	77920126	11.700	-----	30	1496,5	2/8	1,23/1,23	17	58,5	57/87	119,5/149,5	47/77
3PXL-LSE 250	77920226	16.050	4.350	30	2571,5	4/6,5	2,05/1,08	21	58,5	57/87	119,5/149,5	47/77
3PXL-LSI 250	77920326	16.550	4.350	30	2616,5	4/6,5	1,08/2,05	21	58,5	57/87	119,5/149,5	47/77

67

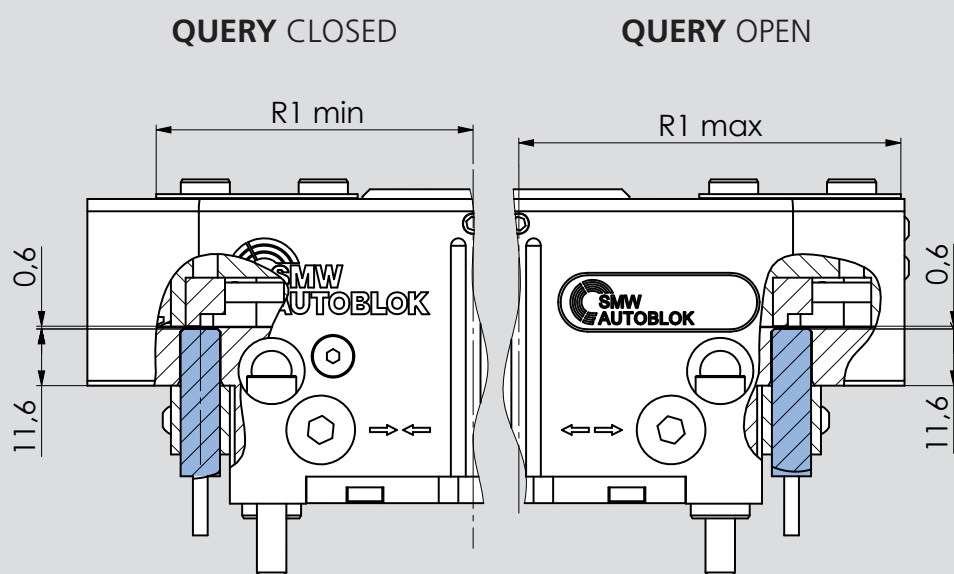
CLAMPING FORCE DIAGRAM 3PXL 250



- Clamping force calculated at **6 bar**.
- Max. recommended fingers height: **300 mm**
- Max. fingers weight: **8,5 Kg**
- For I.D. clamping consider **+3%** of the clamping force shown in the diagram.
- Use connecting screws class **12.9**

- Gripping position monitoring via inductive sensors
- End position monitoring via inductive sensors

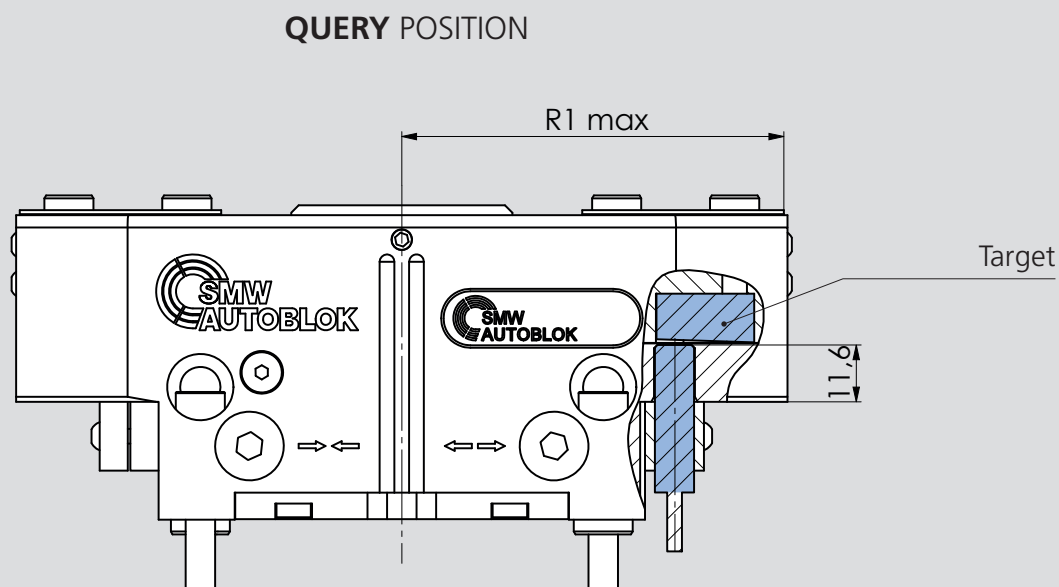
End position monitoring



Type	SENSOR Id. No.*
IPS 4.0 M08-PNP	0E012802

*You can find more information on page 92.

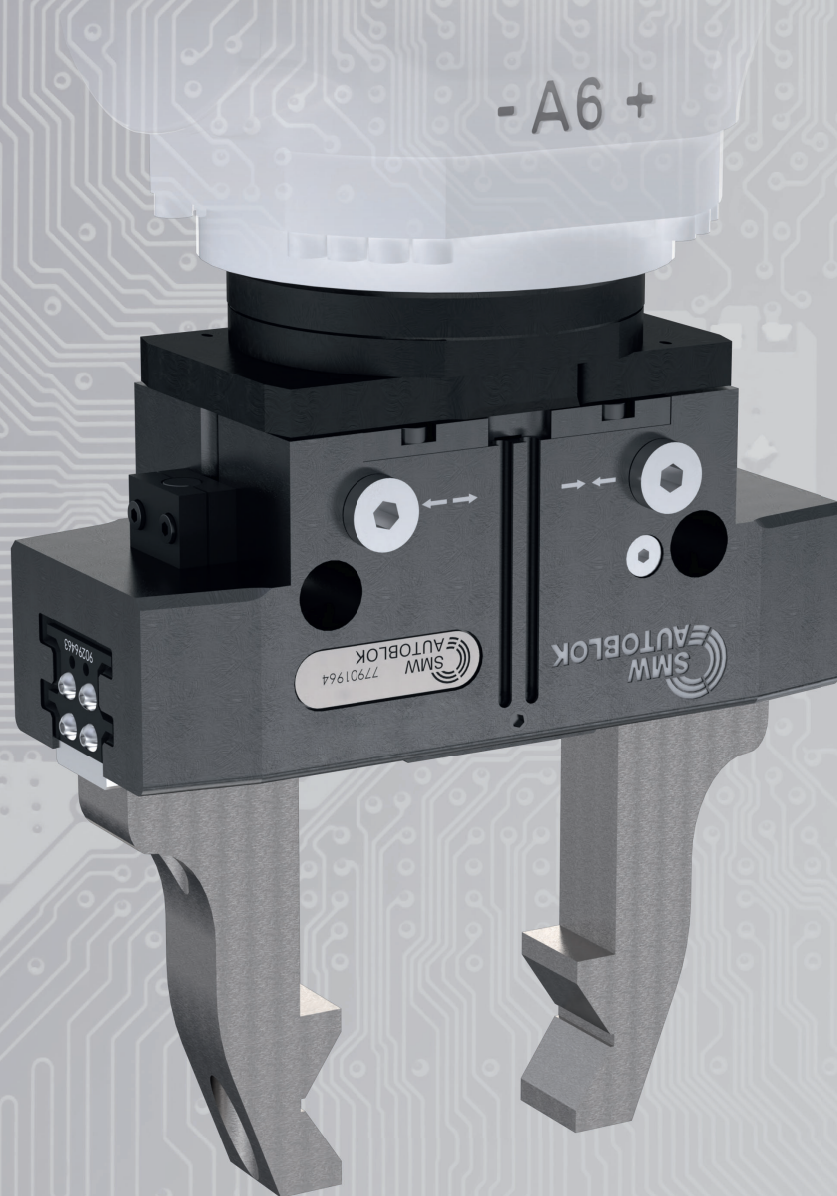
Gripping position monitoring



Type	SENSOR Id. No.*	TARGET Id. No.
IPS 4.0 M08x040 0-10V e-sensing	0E012810	92262163

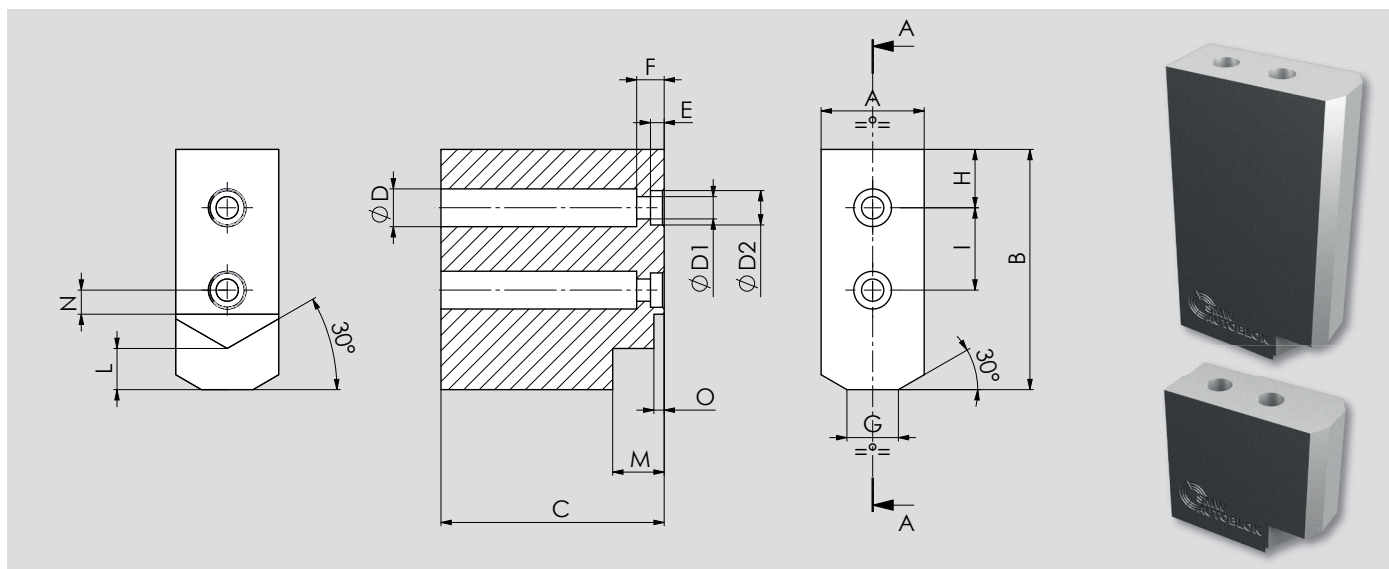
*You can find more information on page 93.

Gripper finger blanks for pneumatic grippers



CUSTOMIZED GRIPPER fingers for pneumatic and mechatronic grippers:
Our specialists work closely with our customers to develop tailor-made solutions.

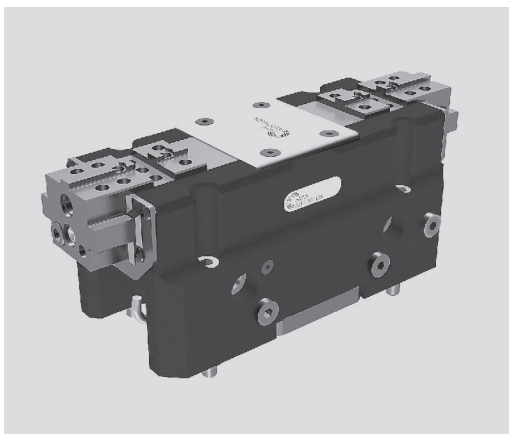
- Standard blanks or pneumatic grippers
- Made from aluminum



Gripper Size	Id. No.	MAT.	A	B	C	Ø D	Ø D1	Ø D2	E	F	G	H	I	L	M	N	O	Clamping Range		Weight (Kg)
																		Normal Stroke	Long Stroke	
PL 64 2PXS 64	92720663	AL	20	40	35	8	4,5	6	3,5	6	1	11	13	8	11	4	3	0 - 2,5	0 - 8,5	0,057
	92730663				64															0,108
3PXS 64	92720663				35													3 - 9	3 - 15	0,057
	92730663				64															0,108
PL 80 2PXS 80	92720863	AL	25	45	45	9	5,5	8	3,5	7	6	10	16	8	11	5	3	0 - 7	0 - 15	0,108
	92730863				80															0,2
3PXS 80	92720863				45													6 - 14	6 - 22	0,108
	92730863				80															0,2
PL 100 2PXS 100	92721063	AL	25	55	55	11	6,5	10	4	8	10	12	20	8	11	6	3	1 - 11	1 - 21,5	0,16
	92731063				100															0,3
3PXS 100	92721063				55													9 - 19	9 - 29	0,16
	92731063				100															0,3
2PXM 125	92721263	AL	30	70	65	11	6,5	10	4	8	15	17	24	12	15	7	3	3 - 15,5	3 - 29,5	0,31
	92731263				125															0,61
3PXM 125	92721263				65													12 - 24	12 - 38	0,31
	92731263				125															0,61
2PXM 160	92721663	AL	30	80	80	17	11	14	5	11	15	11	32	10	14	9	4	3 - 19	3 - 36,5	0,4
	92731663				160															0,81
3PXM 160	92721663				80													16 - 32	16 - 48	0,4
	92731663				160															0,81
2PXM 200	92722063	AL	40	100	100	20	13	16	5	13	20	20	40	15	18	9,5	4	0 - 25	0 - 46	0,87
	92732063				200															1,76
3PXM 200	92722063				100													18 - 46	18 - 68	0,87
	92732063				200															1,76
2PXL 250	92722563	AL	40	120	120	20	13	16	5	13	20	26	44	15	18	10	4	0 - 28	0 - 53,5	1,3
	92732563				220															2,4
3PXL 250	92722563				120													14 - 48	14 - 74	1,3
	92732563				220															2,4

Pneumatic / hydraulic gripper

■ 2 finger parallel

**Application/customer benefits**

- Pneumatic (max. 8 bar) as well as hydraulic (max. 30 bar) use
- ID and OD clamping
- Side or rear feeding
- Integrated greasing system on base jaw (use SMW-AUTOBLOK K67 grease)
- Possibility of element presence control (Air sensing)

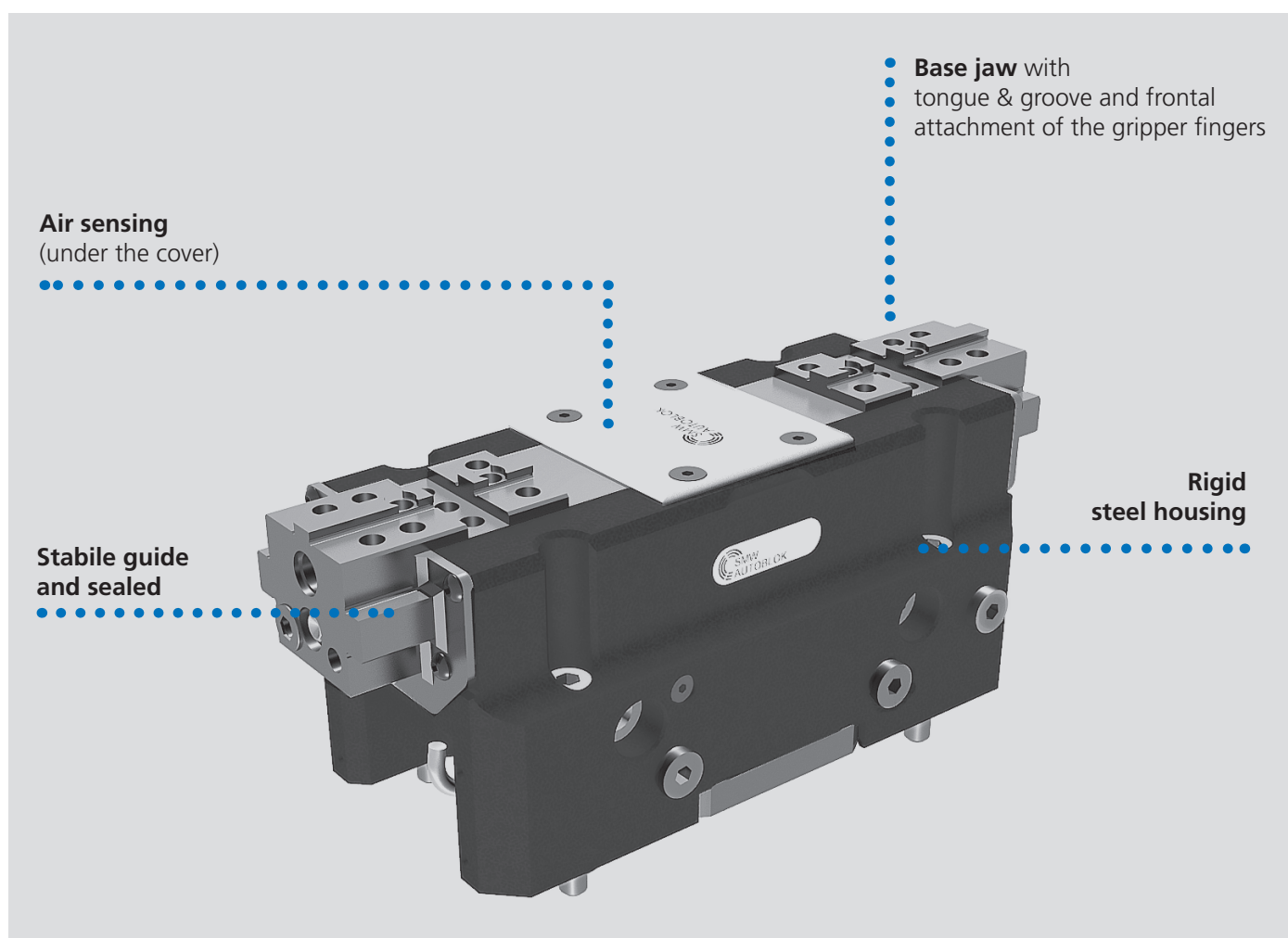
Technical features

- Rigid steel housing
- Sealed / protection class: IP64
- Body and functional parts heat-treated for high precision and long life
- Base jaws with tongue & groove
- Highest rigidity and repeatability
- Air purge
- Air sensing
- Optional: Sensor package, gripping position/end position monitoring

Standard equipment

Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

PP



Type	Id. No.	Pneumatic Hydraulic Gripping force (N) at 6 bar at 30 bar	U (mm) jaw stroke	Pneumatic Hydraulic Pressure (bar) min./max.	Weight (Kg)	Pneumatic Hydraulic Recommended Workpiece weight (Kg)	Repeatability (mm)
PP-N 125	77901862	2.900 14.600	5,5	3/8 8/30	4,9	14,5 73	0,01
PP-L 125	77901962	1.300 6.500	13	3/8 8/30	4,9	6,5 32,5	0,01
PP-N 160	77901866	4.000 19.000	5,5	3/8 8/30	5,7	20 95	0,01
PP-L 160	77901966	1.700 8.400	13	3/8 8/30	5,7	8,5 42	0,01
PP-N 200	77901870	5.800 28.500	7	3/8 8/30	11	29 142,5	0,02
PP-L 200	77901970	2.500 12.700	16,5	3/8 8/30	11	12,5 63,5	0,02
PP-N 250	77901875	8.700 43.700	10	3/8 8/30	19,5	43,5 218,5	0,02
PP-L 250	77901975	3.200 15.800	29,8	3/8 8/30	19,5	16 79	0,02

L = long stroke, N = normal stroke

PL-N/L RR 320/380

Universal gripper

Pneumatic gripper

- Interface for gripper fingers quick-change system RR
- 2 finger parallel



Application/customer benefits

- Compact, lightweight design and automatic gripper finger change
- ID and OD clamping
- Tool-free actuation

Technical features

- Aluminum body
- Sealed / Protection class: IP64
- Body and functional parts heat-treated for high precision and long life
- Highest rigidity
- Prepared for Air purge
- Air sensing
- Optional: Sensor package

Standard equipment

Gripper with centering sleeves and mounting bolts (without gripper fingers and sensors)

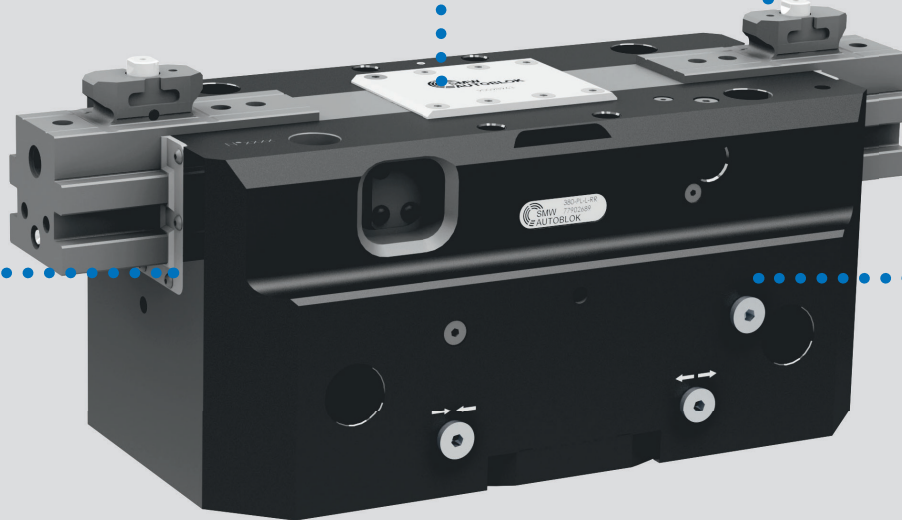
PL-N / L RR 320/380

Interface for gripping fingers quick-change system RR

Air sensing (under the cover)

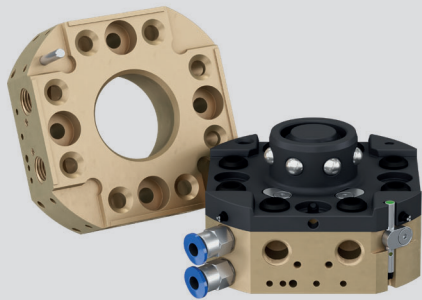
Stable guide and sealed

Compact design lightweight housing



Type	Id. No.	Gripping force (N) at 6 bar	Spring force min. (N)	U (mm) jaw stroke	Air volume (cm³)	Pressure (bar) min./max.	Closing/Opening time (s) at 6 bar	Weight (Kg)	Recommended Workpiece weight (Kg)
PL-N 320 RR	77902583	11.000	-----	23,5	1.206,5	2/8	0,5/0,5	27,5	55,0
PLS-N 320 RR	77902783	14.300	3.300	23,5	1.206,5	4/6,5	0,7/0,4	28	55,0
PL-L 320 RR	77902683	6.000	-----	45	1.206,5	2/8	0,5/0,5	28	30,0
PLS-L 320 RR	77902883	7.800	1.800	45	1.206,5	4/6,5	0,7/0,4	28,5	30,0
PL-N 380 RR	77902589	16.900	-----	26	2.060	2/8	0,6/0,6	41,5	84,5
PLS-N 380 RR	77902789	22.200	5.300	26	2.060	4/6,5	0,9/0,5	42,5	84,5
PL-L 380 RR	77902689	9.250	-----	50	2.060	2/8	0,6/0,6	42,5	46,5
PLS-L 380 RR	77902889	12.150	2.900	50	2.060	4/6,5	0,9/0,5	43,5	46,5

L = long stroke, N = normal stroke



Application/customer benefits

- Maximum productivity by automated quick tool change
- 5 standard sizes: payloads up to 630 kg
- Modular system for flexible interface connection (pneumatics, electrics, sensors)
- Powerful, high-precision locking unit
- Locking status query
- Pneumatic drive

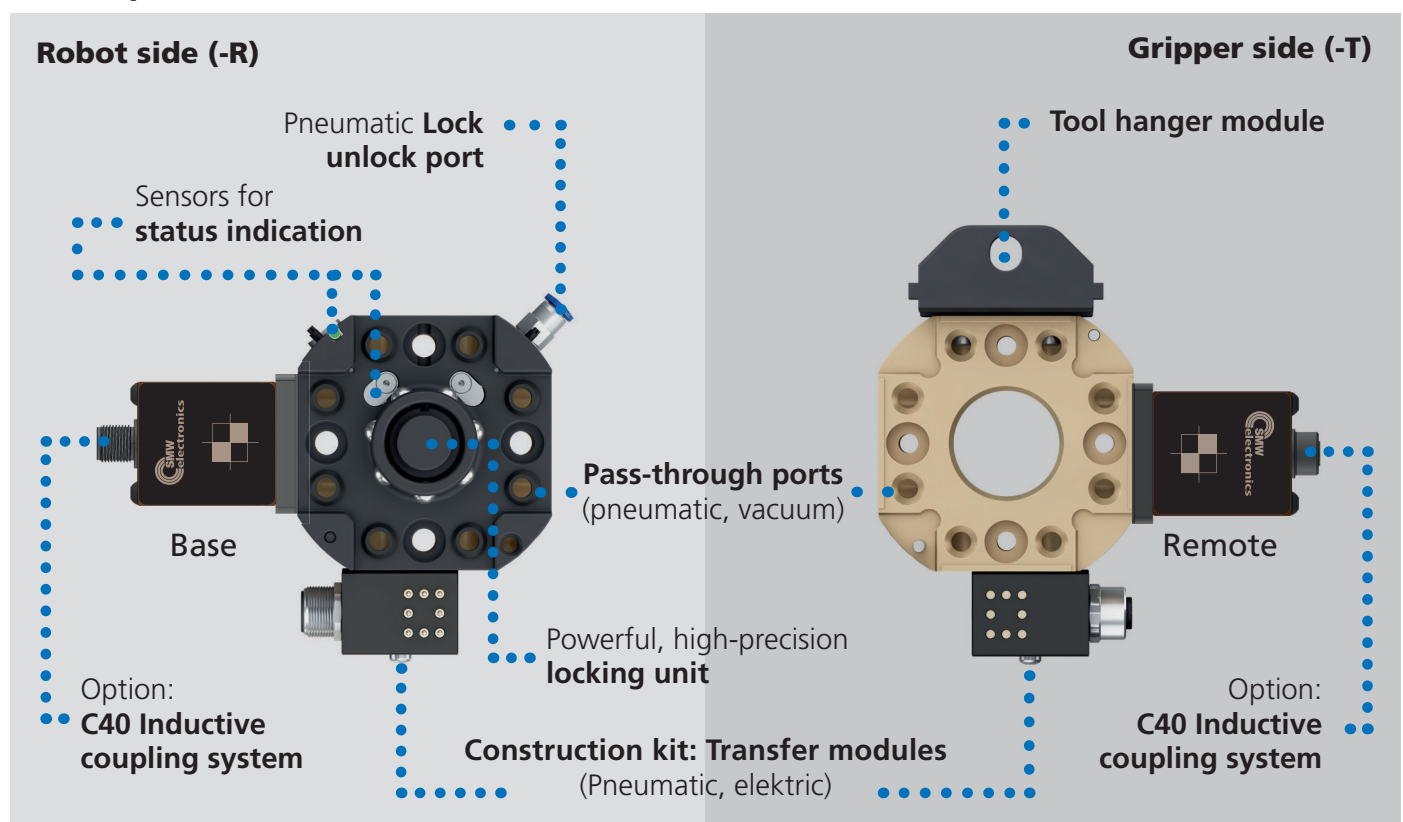
Technical features

- Repeatability $\pm 0,0015$ mm (until size 035), $\pm 0,01$ mm (from size 130)
- Emergency unlock query: Locked/unlocked/coupled
- Safety lock (spring)
- Mounting flange ISO 9409

Standard equipment

AcuGrip-TC (Robot side (-R)) inclusive sensor and AcuGrip-TC (Gripper side (-T)) without sensor

AcuGrip-TC



Type Robot Side	AcuGrip-TC 015-R	AcuGrip-TC 035-R	AcuGrip-TC 130-R	AcuGrip-TC 260-R	AcuGrip-TC 631-R
Id. No.	481000	481010	481020	481030	481040
Recommended handling weight	10 kg	35 kg	100 kg	350 kg	630 kg
Max. pulling force	4 kN	6 kN	16 kN	25 kN	36 kN
Number of module places	4	6	12	14	10
Repeatability	$\pm 0,0015$ mm	$\pm 0,0015$ mm	$\pm 0,010$ mm	$\pm 0,010$ mm	$\pm 0,010$ mm
Weight	0,26 kg	0,5 kg	2,4 kg	3,8 kg	6,5 kg

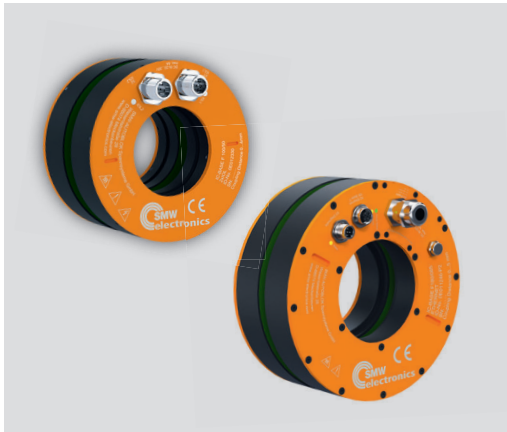
Type Gripper Side	AcuGrip-TC 015-T	AcuGrip-TC 035-T	AcuGrip-TC 130-T	AcuGrip-TC 260-T	AcuGrip-TC 631-T
Id. No.	481001	481011	481021	481031	481041
Recommended handling weight	10 kg	35 kg	100 kg	350 kg	630 kg
Number of module places	4	6	12	14	10
Repeatability	$\pm 0,0015$ mm	$\pm 0,0015$ mm	$\pm 0,010$ mm	$\pm 0,010$ mm	$\pm 0,010$ mm
Weight	0,14 kg	0,20 kg	1,2 kg	2,2 kg	4,9 kg
Height (coupled)	46 mm	46 mm	67 mm	67 mm	100 mm

Notes

Inductive Coupling System

Overview

- Contact free transmission of energy and signals
- Operation and control of grippers



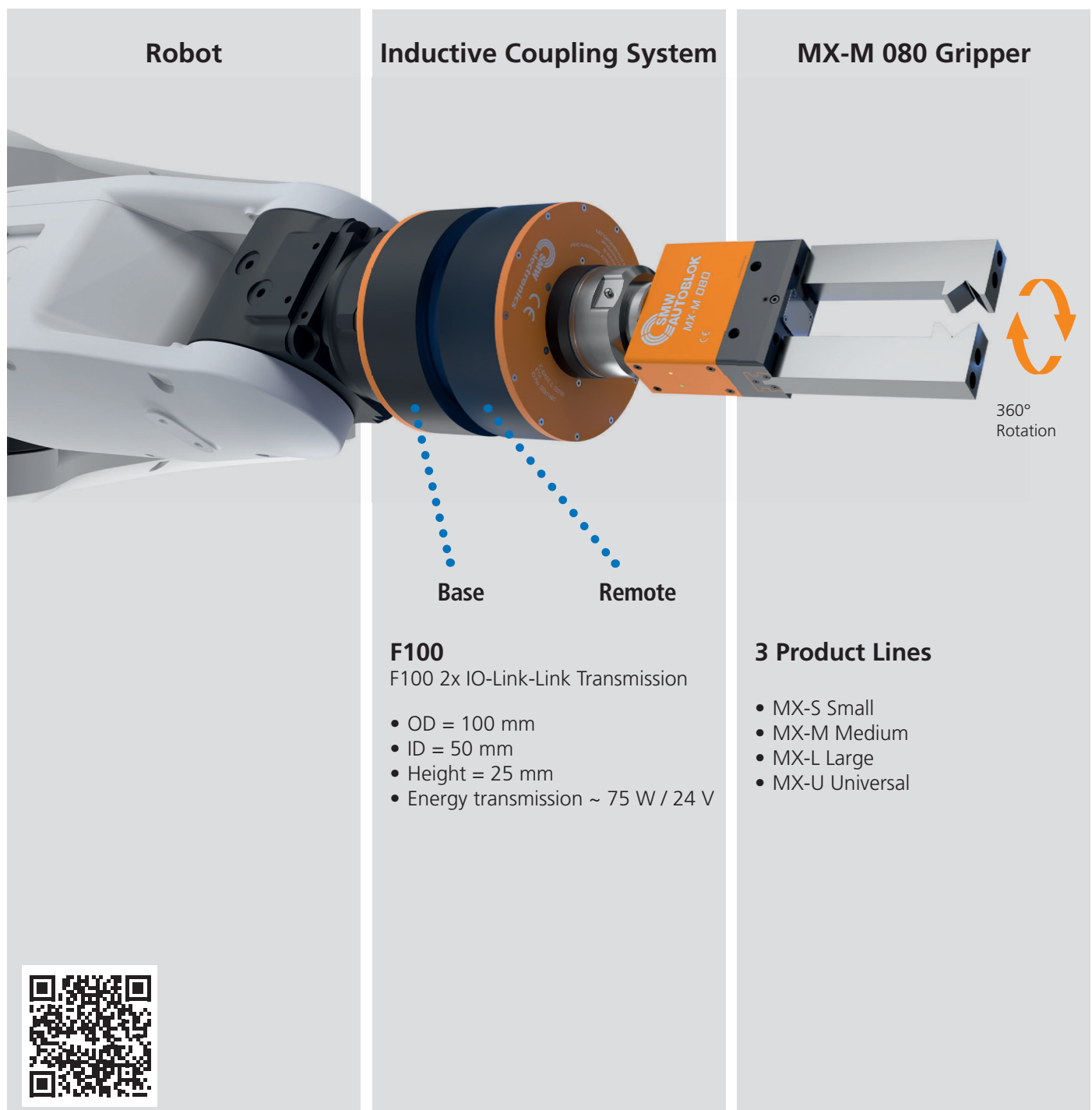
F180 ETH: Compatible with MX-L grippers

- Diameter Ø 180 mm
- Pass through Ø 85 mm
- Power supply 24 V / 48 V
- Transmission distance 0 - 5 mm
- Energy transmission 240 W (24 V) / 400 W (48 V)
- Signal transmission Ethernet 100 Base-T
- Protection class: IP67

F100-2IOL: Compatible with MX-S/MX-M/MX-U grippers

- Diameter Ø 100 mm
- Pass through Ø 50 mm
- Power supply 24 V
- Transmission distance 0 - 4 mm
- Energy transmission 75 W (24 V)
- Signal transmission 2x IO-Link (COM 1, COM 2, COM 3)
- Protection class: IP67

Application Example: 360° rotation of the MX-M 080 gripper



Robot

Inductive Coupling System

MX-M 080 Gripper

360°
Rotation

Base

Remote

F100

F100 2x IO-Link-Link Transmission

- OD = 100 mm
- ID = 50 mm
- Height = 25 mm
- Energy transmission ~ 75 W / 24 V

3 Product Lines

- MX-S Small
- MX-M Medium
- MX-L Large
- MX-U Universal



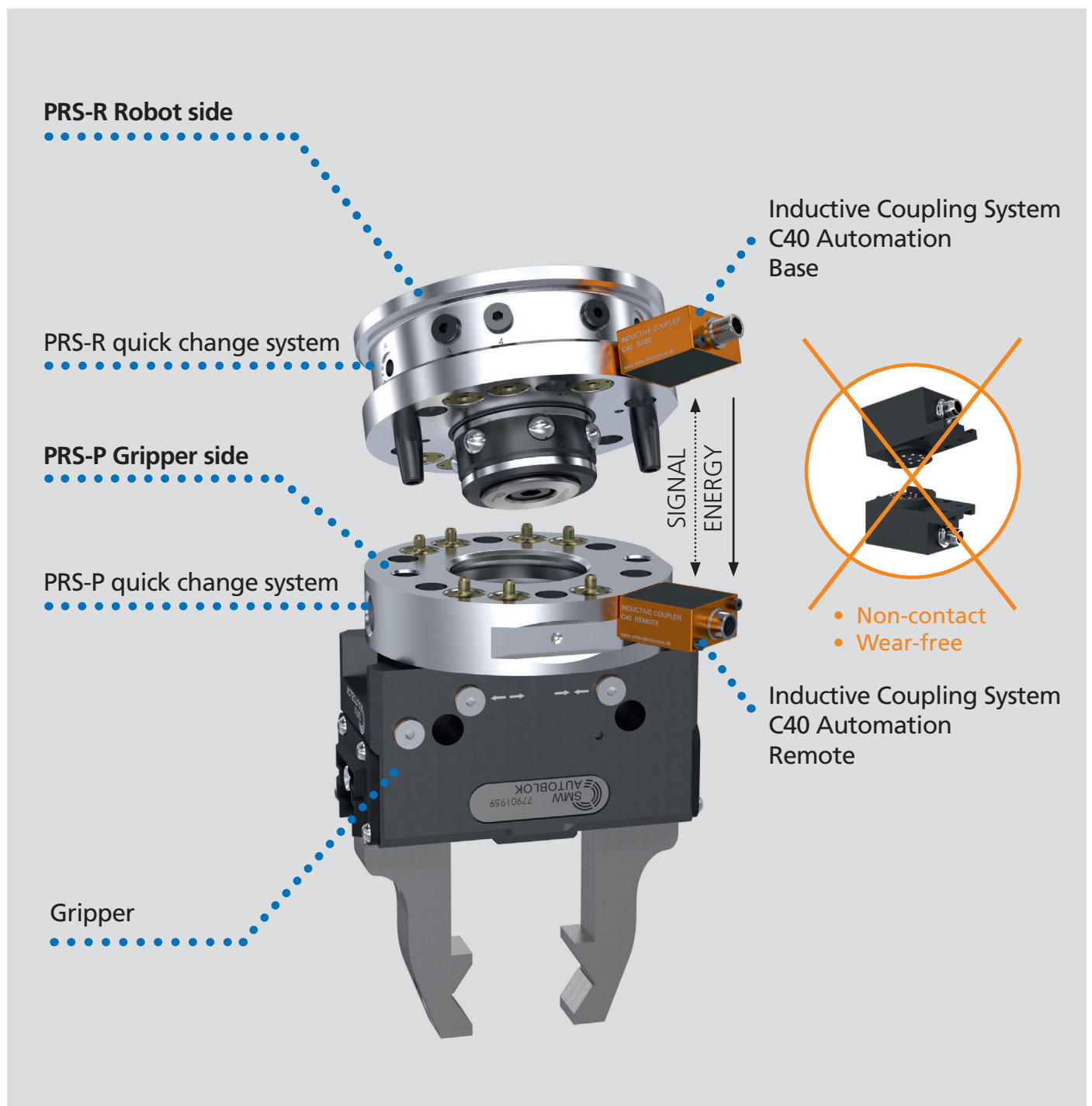
■ Contact free transmission of energy and signals



C40-IOL / C40-2x 0-10V / 6PNP

- Cubical coupling system (40x45x22 mm)
- Ideal suited for EOAT applications, no plug connection necessary
- Power supply 24 V
- Transmission distance 0 - 3 mm
- Energy transmission 15 W (24 V)
- Signal transmission:
 - IO-Link (COM 1, COM 2, COM 3) / 6 PNP Signals + 2 Analog signals 0-10 V
- Hybrid Dynamic Pairing: Base IO-Link can be used with remote IO-Link or 2x 0-10 V/6 PNP
- IP67 Protection class
- Simple retrofit solutions thanks to standardized mounting kits for different replacement systems.

Application Example: Replacement of feed-through modules (power/signals) with contact pins



F100-2IOL

Axial coupler

Inductive Coupling System

■ Contact free transmission of energy and signals

Application/customer benefits

- Contact free transmission of energy and signals between moving / rotating and stationary components
- Application examples: Robotic (End of Arm Tooling), Automation, Mechanical engineering
- Substitution of slip ring / connector
- Dynamic Pairing
- Wear and maintenance free
- Protective functions: temperature monitoring, foreign object detection, reverse polarity protection
- Status LED with good visibility

Technical features

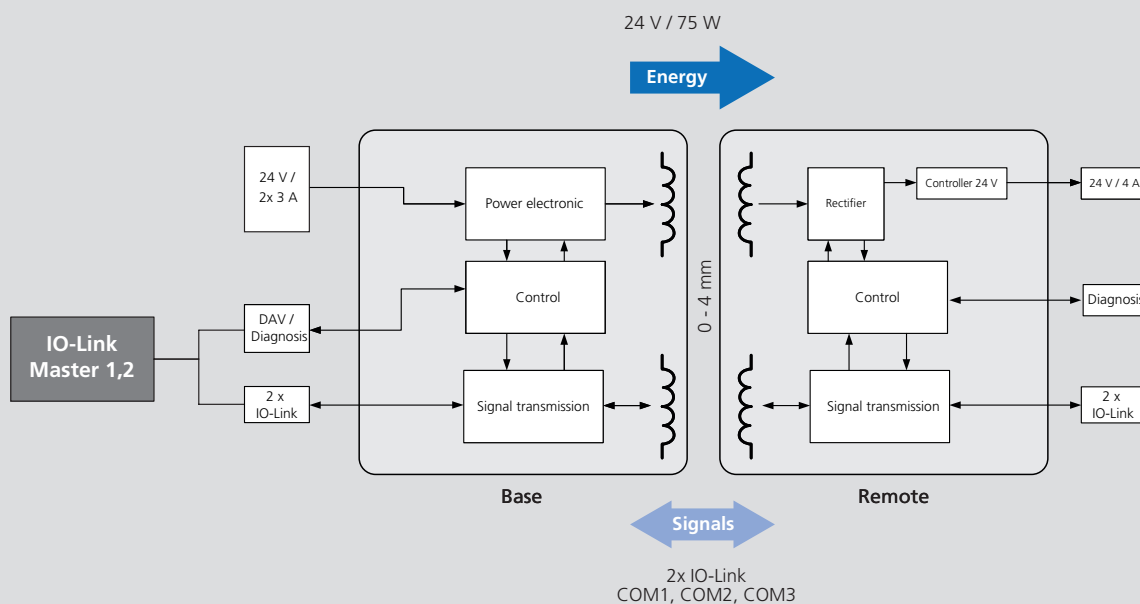
- Diameter 100 mm / Through hole 50 mm
- Operating voltage 24 V / max. 6 A
- Transmission distance 0 - 4 mm
- Transmission of energy 24 V / 75 W
- Transmission of signals: 2x IO-Link (COM 1, COM 2, COM 3)
- Connections: Base: 2x M12 x 1 male 5-pin, Remote: 2x M12 x 1 female 5-pin
- Protection class: IP67

Standard equipment

Inductive coupler base or remote



Block diagram



Subject to technical changes.
For more detailed information please ask our customer service.

IO-Link

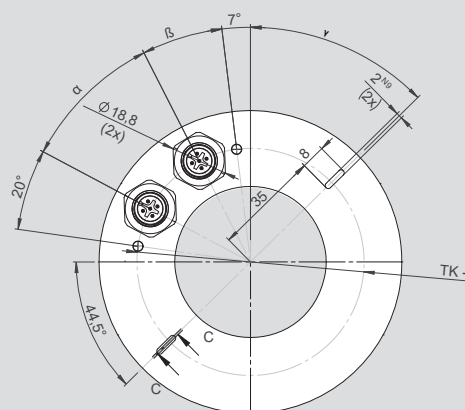
Inductive coupling system F100-2IOL

Type	Base	Remote
Id. No.	0E012330	0E012331
Operating temperature (housing surface)	-20 °C ... +60 °C	
Storage temperature	-20 °C ... +60 °C	
Transmission distance	0 mm ... 4 mm	
Operating voltage	24 V	-
Output voltage	-	24 V (75 W)
Signal transmission	2x IO-Link (COM2, COM 2, COM 3)	
LED	2 LEDs 2-color	
Current consumption (Base)	6 A (24 V)	-
Overload protection / short circuit protection	✓	✓
Residual ripple	-	< 50 mV
Reverse polarity protection	✓	-
Data-Valid output	max. 100 mA	
Ready delay	< 1 s	

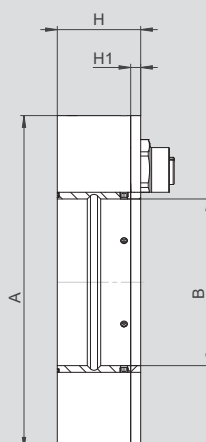
- Stationary unit - Base
- Mobile unit - Remote

Axial coupler

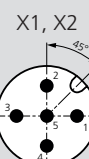
Base / Remote:



Base / Remote:

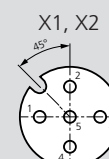
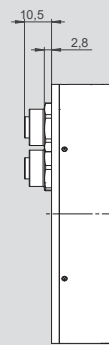


Base:



2x Male connector 5-pin
M12 x 1

Remote:



2x Female connector 5-pin
M12 x 1

Subject to technical changes.
For more detailed information please ask our customer service.

Inductive coupling system F100-2IOL

Type		Base	Remote
Id. No.		0E012330	0E012331
A	mm	100	
B	mm	50	
C	mm	1	
H	mm	25	
H1	mm	3	
α	degree	35	
β	degree	20	
γ	degree	45.5	
Housing material		Al, GFK	
Protection class		IP67	
Weight	kg	0,224	0,237

Function LED IO-Link Base (X1, X2)

LED Power	
Color	Yellow / red
Function	Yellow » SIO mode active and SIO signal is high
	Flash yellow (1000 ms on, 100 ms off), » IO-Link communication active, power is on, Remote was detected
	Flashing 2 Hz yellow » no IO-Link device detected, power on, no Remote detected
	Flashing 2 Hz red » Short circuit on IO-Link PIN
	Flashing 5 Hz red » Overload voltage output Remote

Function LED IO-Link Remote (X1, X2)

LED Power	
Color	Yellow / red
Function	Yellow » SIO mode active and SIO signal is high
	Flash yellow (1000 ms on, 100 ms off), » IO-Link communication active, power is on, Base has been detected
	Flashing 2 Hz yellow » No IO-Link communication, power on, no Base detected
	Flashing 2 Hz red » Short circuit on IO-Link PIN
	Flashing 5 Hz red » Overload voltage output Base

PIN assignment	PIN	X1 Base	X2 Base	X1 Remote	X2 Remote
Supply voltage	1	24 V IN	24 V IN	24 V OUT	24 V OUT
Data-Valid	2	DAV 24 V	-	-	-
Ground	3	GND	GND	GND	GND
IO-Link Signal	4	IO-Link CQ	IO-Link CQ	IO-Link CQ	IO-Link CQ
-	5	-	-	-	-

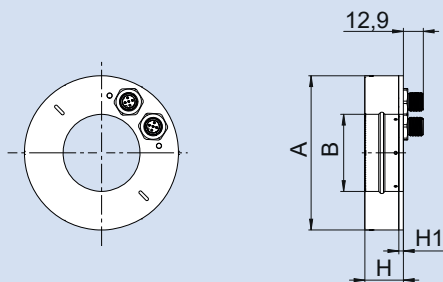
F100-2IOL F100-ETH

Axial coupler

Inductive Coupling Systems

■ Ordering overview flange

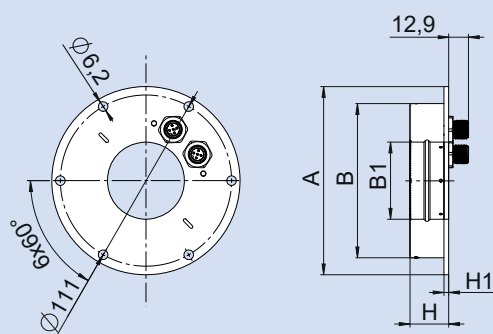
Standard flange



Type	IC-Base F100-2IOL D100/050	IC-Base F100-ETH D100/050
Id.-No.	0E012330 (/1)	0E011420 (/1)
A	100	
B	50	
B1	-	
B2	-	
H	25	
H1	3	
Weight	0.26 kg	

/1 = IC-Remote

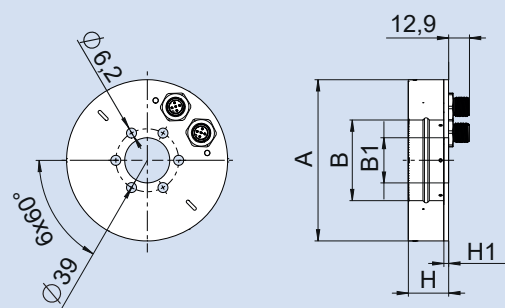
Outer flange with feed-through



Type	IC-Base F100-2IOL D122/050	IC-Base F100-ETH D122/050
Id.-No.	0E012332 (/1)	0E012320 (/1)
A	122	
B	100	
B1	50	
B2	-	
H	25	
H1	3	
Weight	0.36 kg	

/1 = IC-Remote

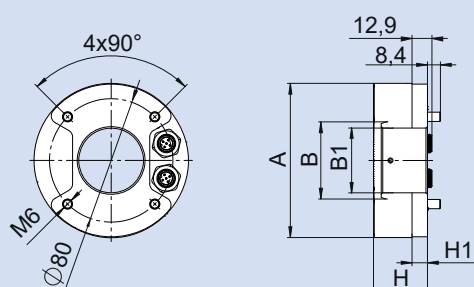
Inner flange with feed-through



Type	IC-Base F100-2IOL D100/028	IC-Base F100-ETH D100/028
Id.-No.	0E012334 (/1)	0E012322 (/1)
A	100	
B	50	
B1	28	
B2	-	
H	25	
H1	3	
Weight	0.34 kg	

/1 = IC-Remote

Flangering with feed-through



Type	IC-Base F100-2IOL D100/042	IC-Base F100-ETH D100/042
Id.-No.	0E012336 (/1)	0E012324 (/1)
A	100	
B	50	
B1	42	
B2	-	
H	25	
H1	10	
Weight	0.48 kg	

/1 = IC-Remote

FURTHER OPTIONS AVAILABLE ON REQUEST!

- Outer flange without feed-through
- Inner flange without feed-through
- Threaded sleeve with without feed-through

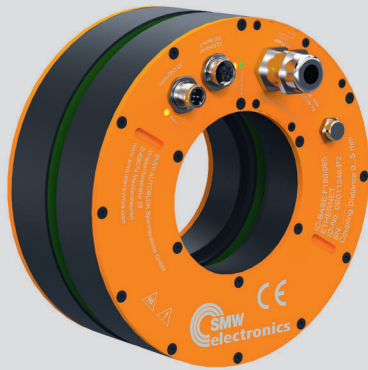
Notes

F180 Ethernet

Axial coupler

Inductive Coupling System

■ Contact free transmission of energy and signals



Application/customer benefits

- Contact free transmission of energy and signals between moving / rotating and stationary components
- Application examples: Packaging machines, special machines, automation, machine tools, printing machines, robot applications (EOAT)
- Substitution of slip ring / connector
- Dynamic Pairing
- Wear and maintenance free
- Protective functions: Temperature monitoring, foreign object detection
- Status LED with good visibility

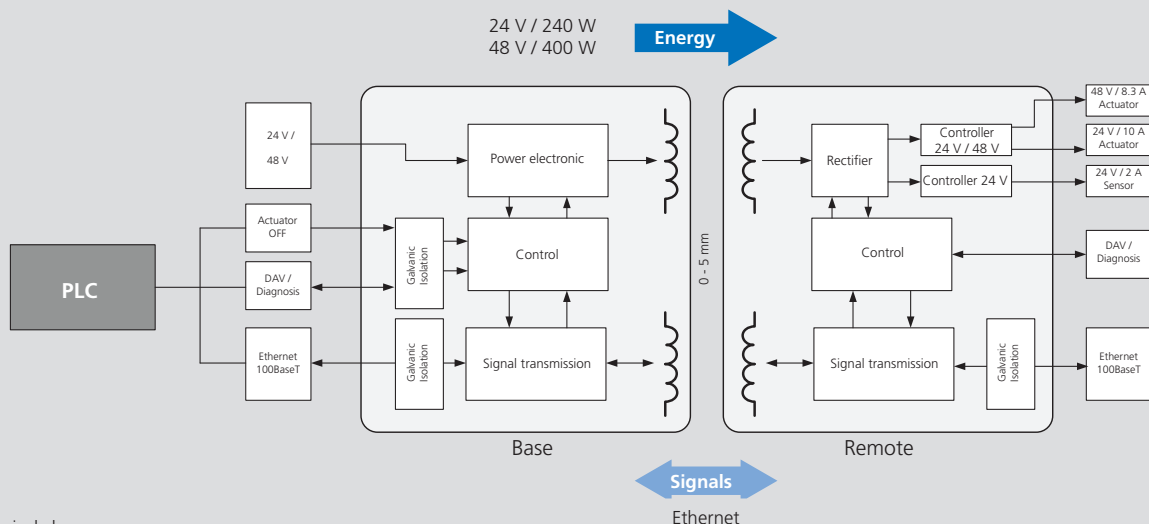
Technical features

- Diameter: 180 mm / Through hole: 85 mm
- Operating voltage: 24 V or 48 V
- Transmission distance: 0 - 5 mm at 24 V or 0 - 3 mm at 48 V
- Energy transmission: 24 V / 240 W or 48 V / 400 W (adjustable)
- Signal transmission: Ethernet 100 Base-T
- Transmission bandwidth < 5 MBit/s
- Connections: M12 Ethernet (D-coded), M12 Diagnosis (A-coded), terminal block (Energy)
- Protection class: IP67

Block diagram

Standard equipment

Inductive coupler base oder remote



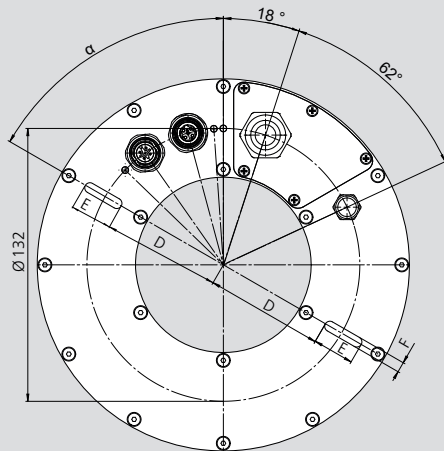
Subject to technical changes.
For more detailed information please ask our customer service.

Inductive coupling system F180 Ethernet

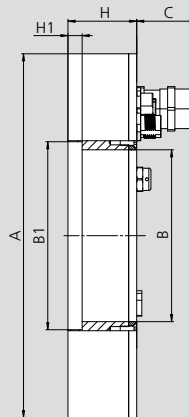
Type	Base	Remote
Id. No.	0E011246	0E011247
Operating temperature (body surface)	-20° C ... +60° C	
Stocking temperature	-20° C ... +60° C	
Transmission distance	0 mm ... 5 mm (24 V) 0 mm ... 3 mm (48 V)	
Operating voltage	24 V / 48 V	-
Output voltage (Actuator supply)*	-	24 V DC / 10 A 48 V DC / 8.3 A
Output voltage (Sensor supply)*	-	24 V DC / 4 A
Signal transmission	Ethernet 100 Base-T	
LED function display	3 LEDs 2-color	
Current consumption (base)	15 A (24 V) 12 A (48 V)	-
Overload protection / short-circuit protection	✓	✓
Reverse polarity protection	-	< 50 mV
Data valid output	max. 100 mA	-
Ready delay	< 5 s	

*max 400 W total

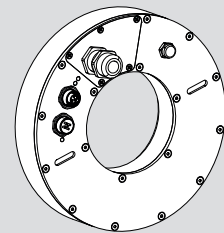
Base / Remote:



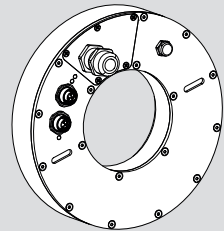
Base / Remote:



Base:



Remote:



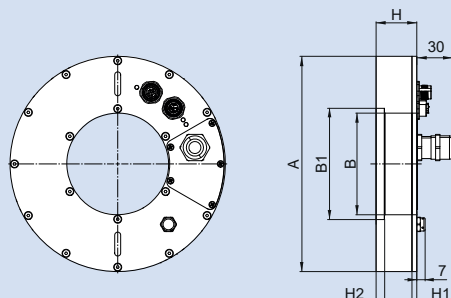
Subject to technical changes.
For more detailed information please ask our customer service.

Inductive coupling system F180 Ethernet

Type		Base	Remote
Id. No.		0E011246	0E011247
A	mm	180	
B	mm	85	
B1	mm	93	
C	mm	29.5	
D	mm	57	
E	mm	20	
F	mm	5	
H	mm	34	
H1	mm	7	
α	degree	60	
Housing material		Al, GFK	
Protection class		IP67	
Weight	kg	1,172	1,275

Function Base		Function Remote	
LED Power		LED Actuator	
Color	Green/red	Color	Green/red
Function	Off » Unit not supplied with voltage (or undervoltage)	Function	Off » Unit not paired
	On (green) » Voltage ok and mobile unit has been detected		On (green) » Unit paired, voltage output actuator ok
	2 Hz green 50/ 50% » Operating temperature in critical range		Flashes 2 Hz red » Unit paired but short circuit on actuator
	1 Hz green 25/75% » Voltage ok but no mobile unit detected		Flashes 5 Hz red » Internal error
	1 Hz red/green » Incompatible mobile unit detected		
	2 Hz red » Foreign element detected		
	5 Hz red » Internal error		
LED Signal transmission Ethernet		LED Sensor supply	
Color	Yellow/red	Color	Green/red
Function	Off » No mobile unit detected	Function	Off » Unit not paired
	On/yellow » Signal transmission ready		On (green) » Unit paired, voltage output sensor (24 V) ok
	1 Hz yellow » Data packets are being transmitted		Flashes 2 Hz red » Unit paired but short circuit on sensor (24 V)
	3 Hz yellow » 50% of the transmission bandwidth used (10 s)		Flashes 5 Hz red » Internal error
	8 Hz red » Data packets were discarded (in the last 10 s)		
	On/red » Error in data transmission (internal error)		
LED Energy transmission		LED Signal transmission	
Color	Yellow/red	Color	Yellow/red
Function	Off » No mobile unit detected	Function	Off » No mobile unit detected
	On (yellow) » Unit coupled, voltage output ok		On/yellow » Signal transmission ready
	1 Hz red/yellow » Short circuit at voltage output sensor		Flashes 1 Hz yellow » Data packets are being transmitted
	3 Hz red/yellow » Short circuit at voltage output actuator		Flashes 3 Hz yellow » 50% of the transmission bandwidth used (10 s)
	3 Hz red » Short circuit at both voltage outputs		Flashes 8 Hz red » Data packets were discarded (in the last 10 s)
	5 Hz red » Internal error		On/red » Error in data transmission (internal error)

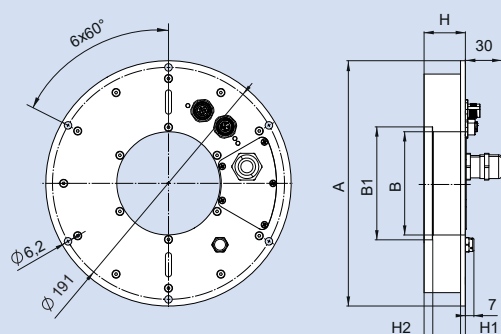
Standard flange



Type	IC-Base F180 Ethernet D180/085
Id.-No.	0E011246 (/1)
A	180
B	85
B1	93
B2	-
H	34
H1	4
H2	7
Weight	1.31 kg

/1 = IC-Remote

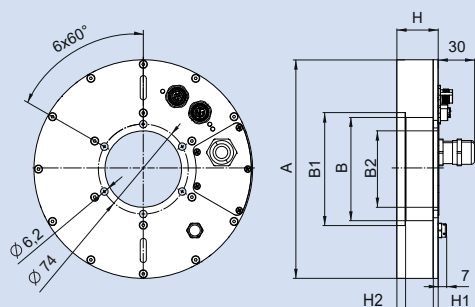
Outer flange with feed-through



Type	IC-Base F180 Ethernet D202/085
Id.-No.	0E012340 (/1)
A	202
B	85
B1	93
B2	-
H	34
H1	4
H2	7
Weight	1.47 kg

/1 = IC-Remote

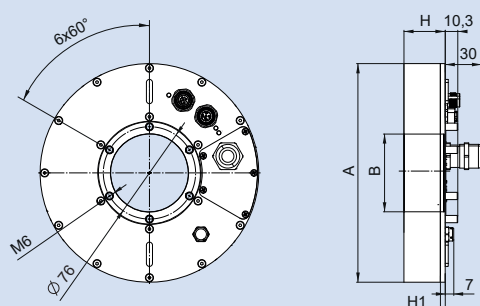
Inner flange with feed-through



Type	IC-Base F180 Ethernet D180/063
Id.-No.	0E012342 (/1)
A	180
B	85
B1	93
B2	63
H	34
H1	4
H2	7
Weight	1.4 kg

/1 = IC-Remote

Flange ring with feed-through



Type	IC-Base F180 Ethernet D180/064
Id.-No.	0E012344 (/1)
A	180
B	64
B1	-
B2	-
H	34
H1	4
H2	-
Weight	1.58 kg

/1 = IC-Remote

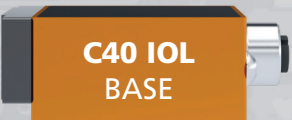
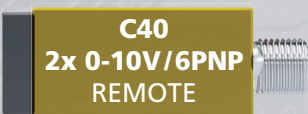
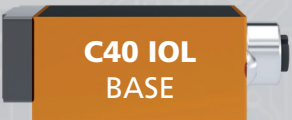
FURTHER OPTIONS AVAILBLE ON REQUEST!

- Outer flange without feed-through
- Inner flange without feed-through
- Threaded sleeve with feed-through

Notes

C40 AUTOMATION PRODUCT FAMILY

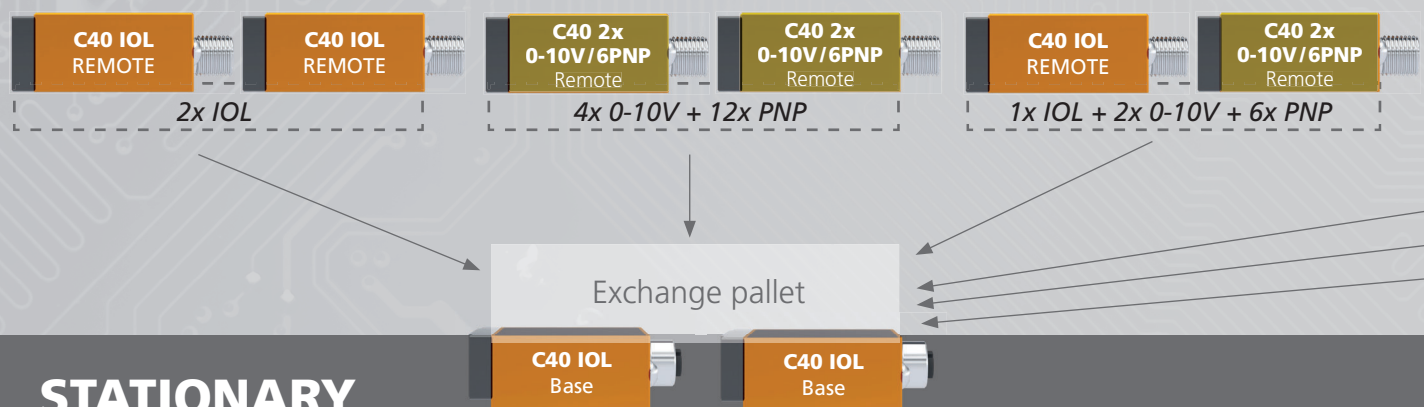
Hybrid Dynamic Pairing

OPERATION with IO-Link sensors (Devices)	 	• C40 remote units are compatible with each other and can be combined • Consistent IO-Link functionality • Identification via IO-Link parameters device name, IO-Link tag possible
OPERATION of 2 analog (0-10V) + 6 digital (PNP) signals direction switchable (bidirectional)	 	

Application example of change systems

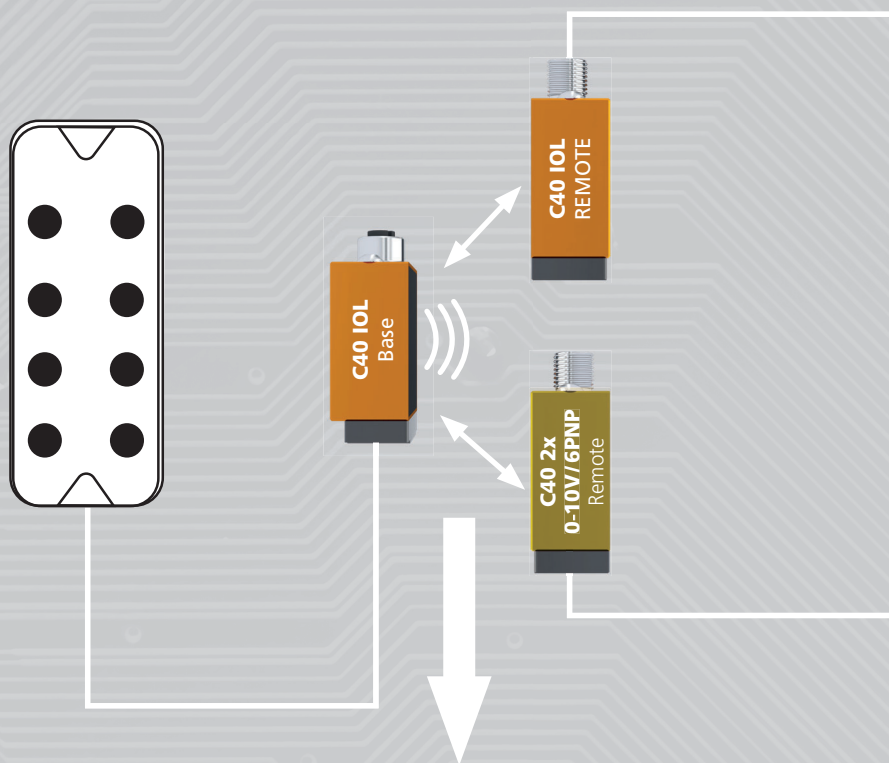
(Pallet change, tool change, format change): Remote - interchangeable units

Variants: Combination of 2 C40 systems



Hybrid Dynamic Pairing

**C40 IOL BASE + C40 IOL REMOTE or
C40-2x 0-10V / 6x PNP REMOTE**

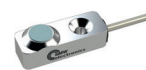


IO-Link Device
(sensor)



**2x Analog signals 0-10V and
6x PNP digital switching
signals**

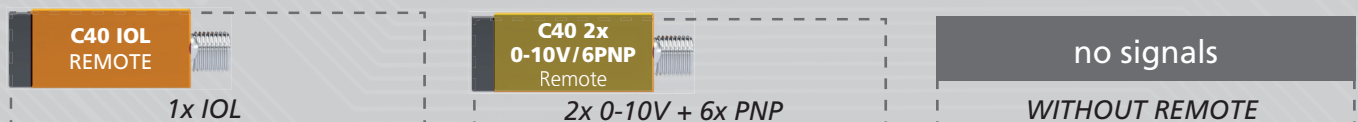
2x 0-10V



6x PNP

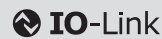


IO-Link and analog/digital remote can
be switched dynamically during operation.



The **remote exchangeable pallets** can be changed dynamically during operation with the stationary **C40 IOL Base unit**.

- Contact free transmission of energy and signals
- Ideal for gripper changing systems and pallet change applications



Application/customer benefits

- Contact free transmission of energy and signals between moving and stationary components
- Application examples: Operation of sensors in gripper changing systems (EOAT) and pallet change applications
- Plug & work retrofit kits
- Dynamic Pairing
- Wear and maintenance free
- Protective functions: Temperature monitoring, foreign object detection, reverse polarity protection

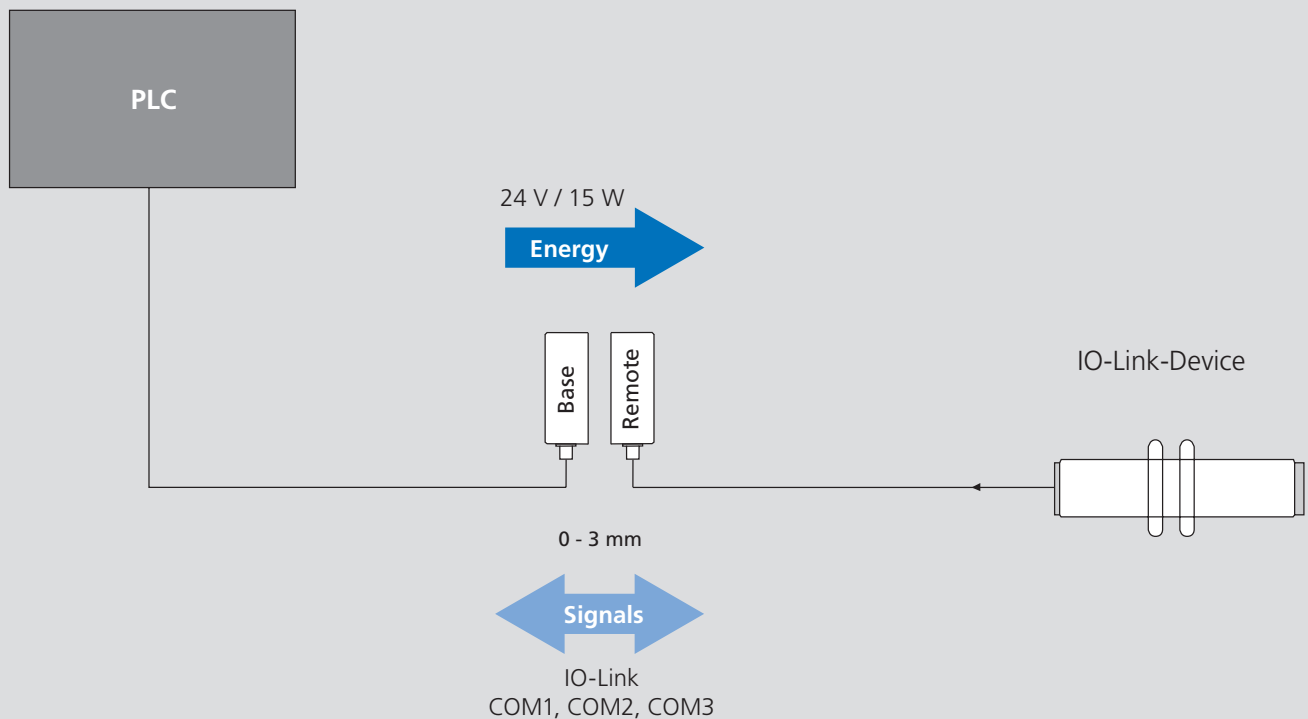
Technical features

- Mounting via 2x M4 mounting screws (stainless steel)
- Operating voltage 24 V (18 ... 30 V)
- Transmission distance 0 - 3 mm
- Transmission of energy 24 V / 15 W
- Transmission of signals: 1 x IO-Link (COM 1, COM 2, COM 3)
- Connections: Base: M12 x 1 male 5-pin,
Remote: M12 x 1 female 5-pin
- Protection class: IP67

Standard equipment

Inductiv coupler base or remote with each 2 mounting bolts

Block diagramm



Subject to technical changes.
For more detailed information please ask our customer service.

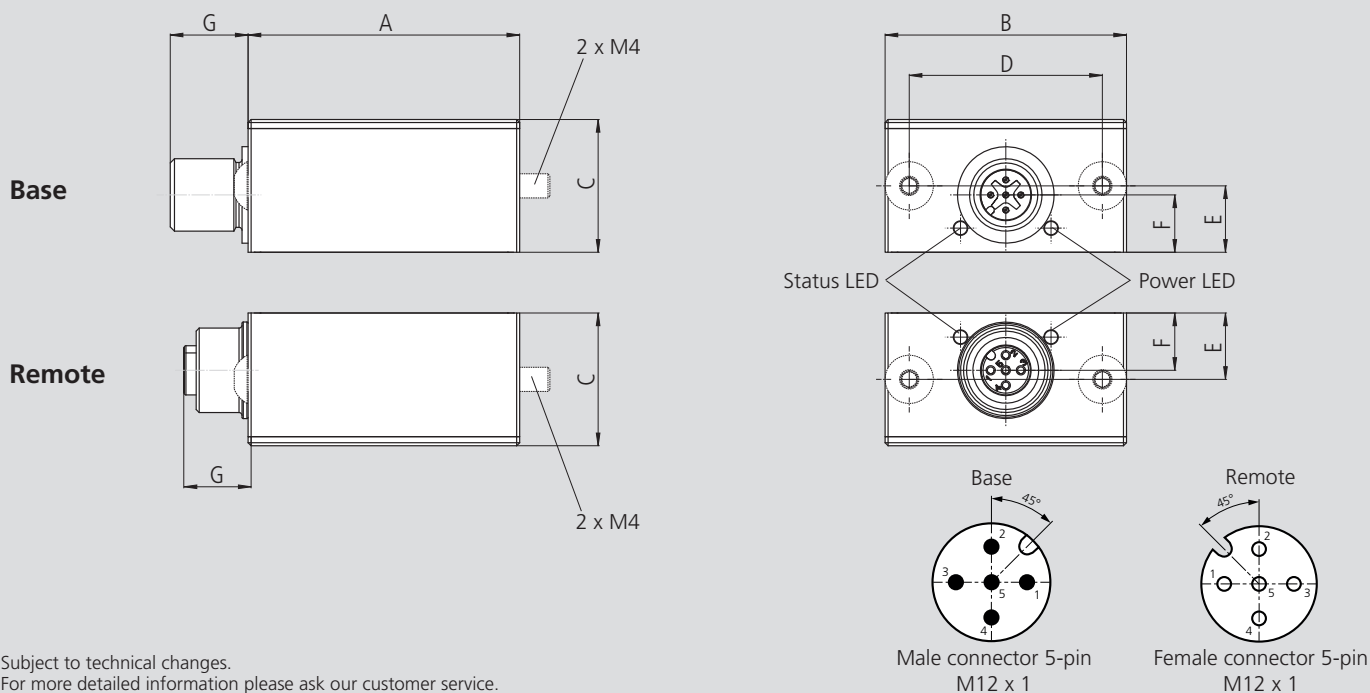


Inductive Coupling System

C40-IOL

- Contact free transmission of energy and signals
- Ideal for gripper changing systems and pallet change applications

Axial coupler



Inductive coupling system C40-IOL				
Type		Base		Remote
Id. No.		0E012615		0E012616
A	mm	45		
B	mm	40		
C	mm	22		
D	mm	32		
E	mm	11		
F	mm	9.5		
G	mm	13		10.6
Housing material		AL, V2A, FR4		
Protection class		IP67		
Operating temperature		-25° C ... +50° C		
Storage temperature		-25° C ... +80° C		
Transmission distance		0 - 3 mm		
Weight	kg	0,087		0,086
Operating voltage		24 V (18 ... 30 V)		-
Output voltage		-		24 V ± 10% DC
Power consumption (Base)		2000 mA		-
Power output (Remote)		-		625 mA
Overload protection / short circuit protection		✓		✓
Residual ripple		-		< 200 mV
Reverse polarity protection		✓		-
Temperature monitoring		✓		✓
Data-Valid Output		150 mA		-
Ready delay		< 600 ms		
PIN assignment		Signal Base		Signal Remote
Supply voltage	1	24 V IN		24 V OUT
Digital signal	2	-		-
Ground	3	GND		GND
IO-Link Signal	4	IO-Link CQ		IO-Link CQ
Data-Valid	5	DAV 24 V		-

C40-2x 0-10V / 6PNP

Axial coupler

Inductive Coupling System

- Contact free transmission of energy and signals
- Ideal for gripper changing systems and pallet change applications
- Integrated IO-Link sensor hub



Application/customer benefits

- Contact free transmission of energy and signals between moving and stationary components
- Application examples: Operation of sensors in gripper changing systems (EOAT) and pallet change applications
- Integrated IO-Link sensor hub
- Plug & work retrofit kits
- Dynamic Pairing
- Wear and maintenance free
- Protective functions: Temperature monitoring, foreign object detection, reverse polarity protection

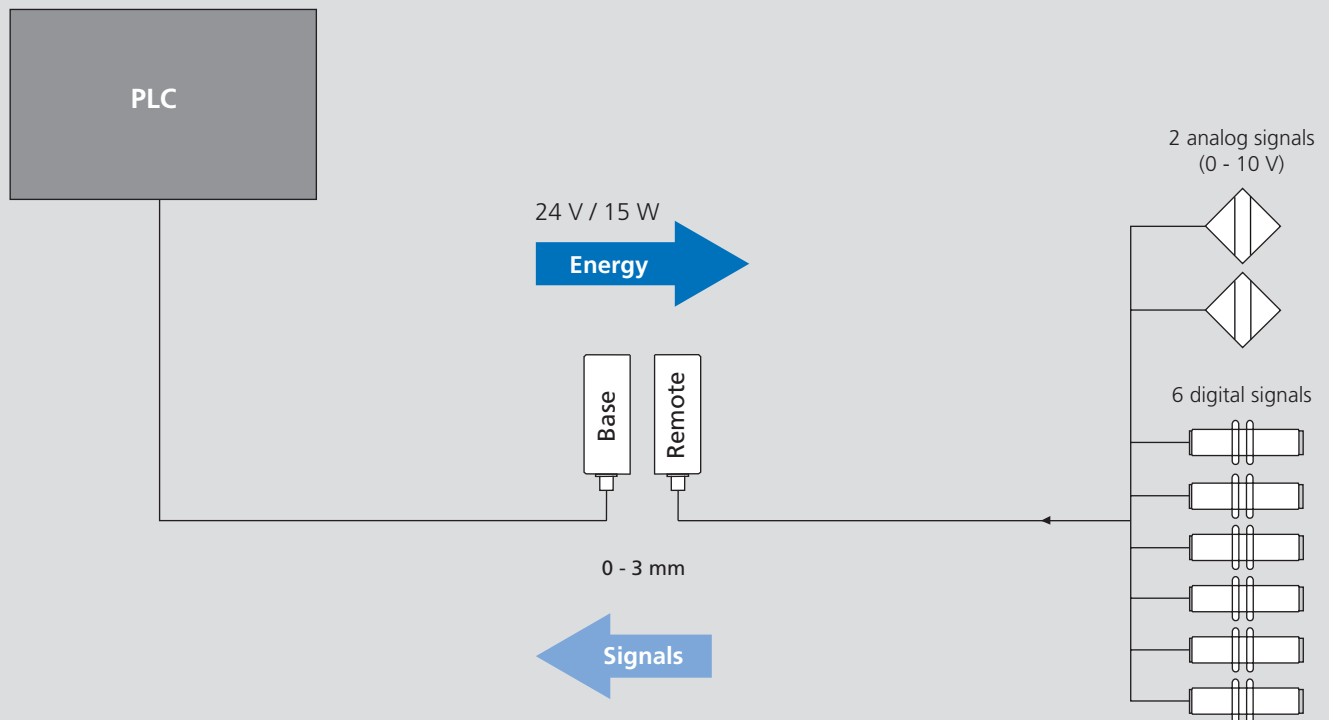
Technical features

- Mounting via 2 x M4 mounting screws (stainless steel)
- Operating voltage 24 V (18 ... 30 V)
- Transmission distance 0 - 3 mm
- Transmission of energy 24 V / 15 W
- Transmission of signals: 6x PNP, 2x Analog 0 - 10 V
- Connections: Base: M12 x 1 male 12-pin, Remote: M12 x 1 female 12-pin
- Protection class: IP67

Standard equipment

Inductiv coupler base or remote with each 2 mounting bolts

Block diagram

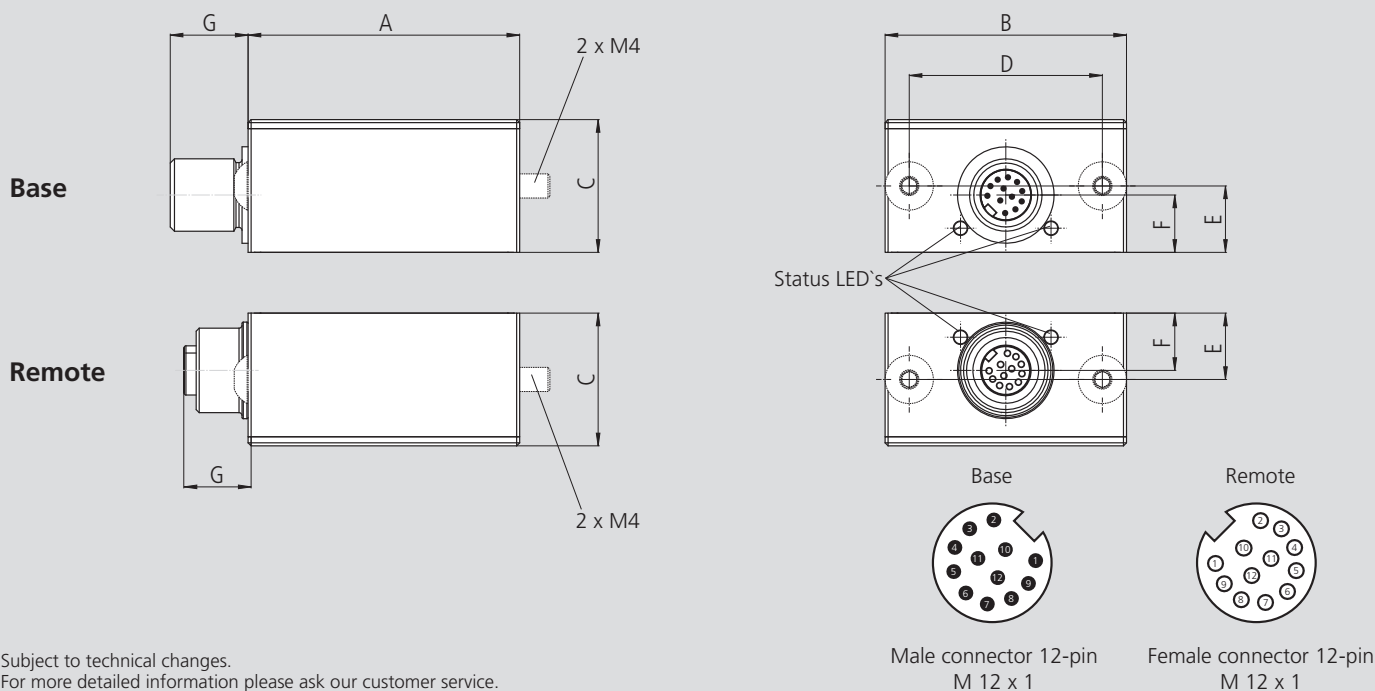


Subject to technical changes.
For more detailed information please ask our customer service.

- Contact free transmission of energy and signals
- Ideal for gripper changing systems and pallet change applications
- Integrated IO-Link sensor hub

C40-2x 0-10V / 6PNP

Axial coupler



Subject to technical changes.
For more detailed information please ask our customer service.

Inductive coupling system C40-2x 0-10V / 6PNP			
Type		Base	Remote
Id. No.		0E012720	0E012721
A	mm	45	
B	mm	40	
C	mm	22	
D	mm	32	
E	mm	11	
F	mm	9.5	
G	mm	13	10.6
Housing material		AL	
Protection class		IP67	
Operating temperature		-25° C ... +50° C	
Storage temperature		-25° C ... +80° C	
Transmission distance		0 - 3 mm	
Weight	kg	0,087	0,086
Operating voltage		24 V (18 ... 30 V)	-
Output voltage		-	24 V ± 10% DC
Power consumption (Base)		2000 mA	-
Power output (Remote)		-	625 mA
Overload protection / short circuit protection		✓	✓
Residual ripple		-	< 200 mV
Reverse polarity protection		✓	-
Temperature monitoring		✓	✓
Data-Valid Output		150 mA	-
Ready delay		< 600 ms	
Ready for operation (switching on the entire system)		< 1200 ms	
Ready for operation (approach remote to switched-on base)		< 600 ms	
Delay on signal change (analog signal / digital signal)		< 20 ms / <10 ms	
PIN assignment		Signal Base	Signal Remote
Supply voltage	1	24 V IN	24 V OUT
Ground	2	GND	GND
Digital signal 1	3	0/24 V OUT	0/24 V IN
Digital signal 2	4	0/24 V OUT	0/24 V IN
Digital signal 3	5	0/24 V OUT	0/24 V IN
Digital signal 4	6	0/24 V OUT	0/24 V IN
Digital signal 5	7	0/24 V OUT	0/24 V IN
Digital signal 6	8	0/24 V OUT	0/24 V IN
Analog signal 1	9	0 ... 10 V OUT	0 ... 10 V IN
Analog signal 2	10	0 ... 10 V OUT	0 ... 10 V IN
Ground Analog signal	11	Analog GND *	Analog GND *
Data-Valid	12	DAV 24 V	-

* For analog operation, analog GND and GND must be connected externally.



Application/customer benefits

- Inductive proximity sensor
- Flexible use with versatile mounting options
- Compact and rigid design

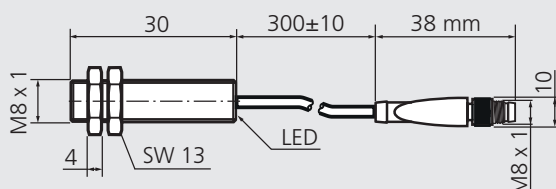
Technical features

- 2 mm flush
- Temperature range -40 ... +85 °C
- Operating voltage 24 V
- M8 x 1 Mounting
- Digital signal output PNP normally open (NO)
- Protection class: IP67

Standard equipment

IPS 4.0 M08-PNP
2 self locking nuts M8

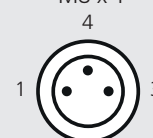
OE012802



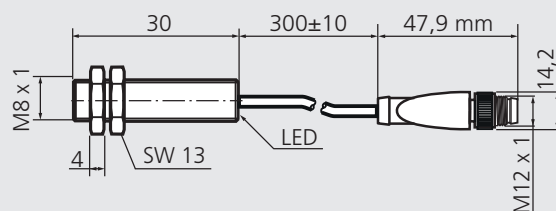
Pin Assignment

Pin	Description
1	24 V DC (brown)
3	GND (blue)
4	Normally open (NO) (black)

Male connector
M8 x 1



OE012803



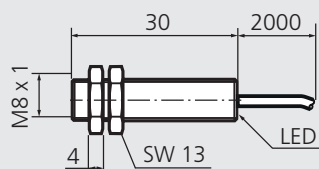
Pin Assignment

Pin	Description
1	24 V DC (brown)
2	NC
3	GND (blue)
4	Normally open (NO) (black)

Male connector
M12 x 1



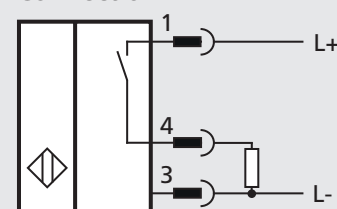
OE012804



Wire Assignment

Description
24 V DC (brown) (1)
GND (blue) (3)
Normally open (NO) (black) (4)

Connection



Technical data

Type	IPS 4.0 M08-PNP	IPS 4.0 M08-PNP	IPS 4.0 M08-PNP
Id. No.	OE012802	OE012803	OE012804
Switching function	Normally open (NO)		
Output type	PNP		
Rated operating distance	2 mm		
Installation	Flush		
Assured operating distance	0 ... 1.62 mm		
Operating voltage U_B	5 ... 30 V		
Switching frequency	0 ... 6000 Hz		
Reverse polarity protection	Reverse polarity protected		
Operating current	0 ... 100 mA		
No-load supply current	≤ 10 mA		
Switching state indicator	LED yellow		
MTTF _d	960 a		
Mission time (T_M)	20 a		
Diagnostic Coverage (DC)	0 %		
Ambient temperature	-40 ... +85 °C		
Connection type	Cable connector M8 x 1, PUR, 300 mm	Cable connector M12 x 1, PUR, 300 mm	Cable PUR, 2000 mm
Core cross section	0.14 mm ²		
Housing material	Brass, nickel plated		
Protection class	IP67		
Weight	0,04	0,04	0,05
Threading	M8		



Application/customer benefits

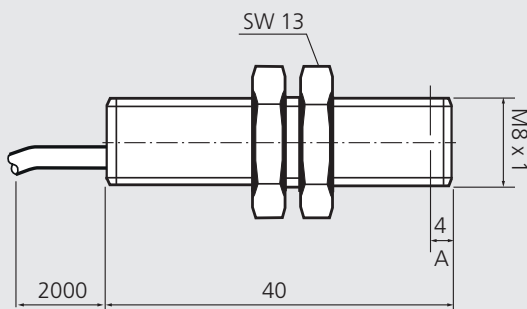
- Inductive positioning sensor
- Flexible use with versatile mounting options
- High accurate distance measuring
- Compact and rigid design

Technical features

- 2 mm Flush
- Temperature range -10 ... +70 °C
- Operating voltage 12 ... 36 V DC
- M8 x 1 Mounting
- Protection class: IP67

Standard equipment

IPS 4.0 M08-0-10V
2 self locking nuts M8

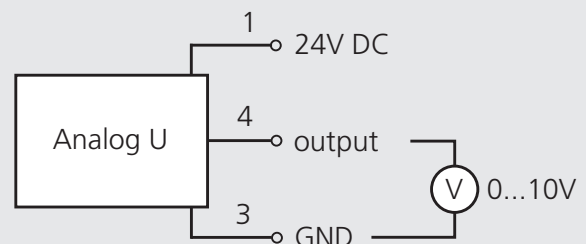


Wire Assignment

Wire Description

- | Wire | Description |
|------|----------------------|
| 1 | 24 V DC (brown) |
| 3 | GND (blue) |
| 4 | 0-10V output (black) |

Connection



Technical data

Type	IPS 4.0 M08-0-10V
Id. No.	0E012810
Installation	flush
Measuring distance	0 ... 2 mm
Repeat accuracy	< 0.02 mm
Linearity error	± 60 µm (S = 0,5 ... 1,5 mm), ± 140 µm (S = 0 ... 2 mm)
Temperature drift	± 3 % (Full Scale: 0 ... +60 °C), ± 5 % (Full Scale: -10 ... +70 °C)
Response time	< 0.5 ms
Operating voltage	12 ... 36 V DC
No-load supply current max.	10 mA
Output circuit	Voltage output
Output signal	0 ... 10 V DC
Reverse polarity protection	Yes
Housing material	Stainless steel
Dimension	8 mm
Housing length	40 mm
Connection type	Cable, 2000 mm
Tightening torque max.	10 Nm
Ambient temperature	-10 ... +70 °C
Protection class	IP67
Weight	0,049

IPS 4.0 8.8x24.6- 0-10V e-sensing

Inductive positioning sensor



Application/customer benefits

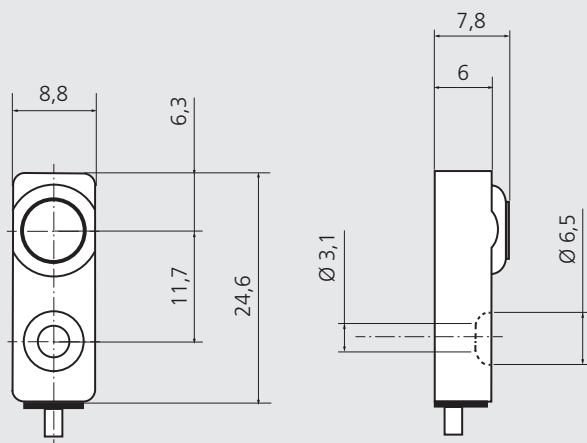
- Inductive positioning sensor
- Flexible use with versatile mounting options
- High accuracy distance measuring

Technical features

- 3 mm flush
- Temperature range -20 ... +70 °C
- Operating voltage 12 ... 30 V DC
- Protection class. IP67

Standard equipment

IPS 4.0 8.8x24.6-0-10V

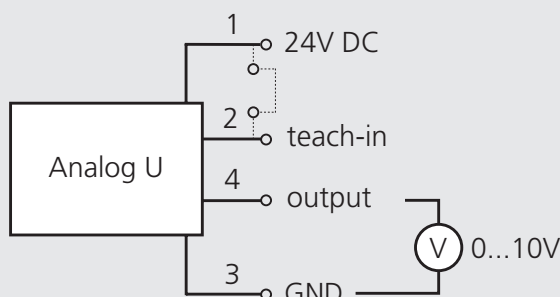


Wire Assignment

Wire Description

- | Wire | Description |
|------|----------------------|
| 1 | 24 V DC (brown) |
| 2 | Teach In (white) |
| 3 | GND (blue) |
| 4 | 0-10V output (black) |

Connection



Technical data

Type	IPS 4.0 8.8x24.6-0-10V
Id. No.	212282
Installation	Nearly Flush
Measuring distance	0 ... 3 mm
Repeat accuracy	< 0.01 mm
Linearity error	± 10 µm (S = 0 ... 2 mm), ± 90 µm (S = 0 ... 3 mm)
Temperature drift	± 2 % (Full Scale: S = 0 ... 2 mm), ± 6 % (Full Scale: S = 0 ... 3 mm)
Response time	< 2 ms
Operating voltage	12 ... 30 V DC
No-load supply current max.	10 mA
Output circuit	Voltage output
Output signal	0 ... 10 V DC
Reverse polarity protection	Yes
Housing material	Stainless steel
Connection type	Cable PUR, 2000 mm
Tightening torque max.	0,8 Nm
Ambient temperature	-20 ... +70 °C
Protection class	IP67
Weight	0,027

Notes

Digitized Workholding

Long-stroke vises for automation application

SLX digit (Digitized hydraulic long-stroke vise)



More Information



you find here!

SLX e-motion (Mechatronic long-stroke vise)



More Information



you find here!

Zero-Point Clamping Systems for quick-change in automation

APS (Pneumatic drive)

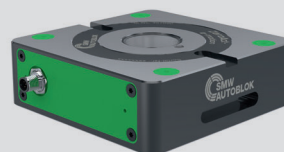


More Information



you find here!

ZeroAct e-motion (Mechatronic drive)



More Information



you find here!



Further products for automation
can be found in our catalog Digit at
www.smw-autoblok.com website.

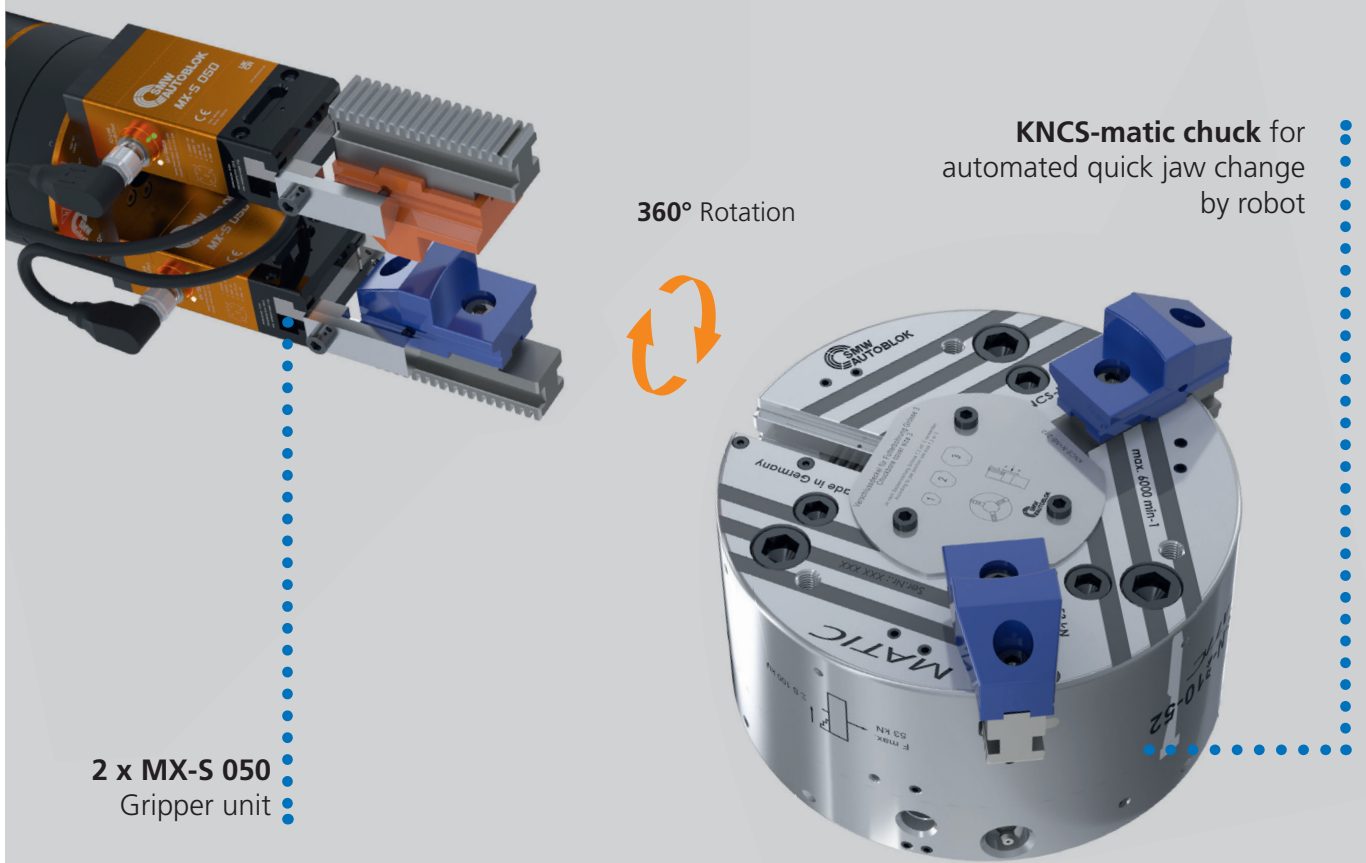
Notes

Application examples

Inductive coupling system with hollow shaft allows for non-contact energy and signal transmission and endless 360° rotation on both sides for the MX-L 520 long-stroke gripper.



Automated quick jaw change



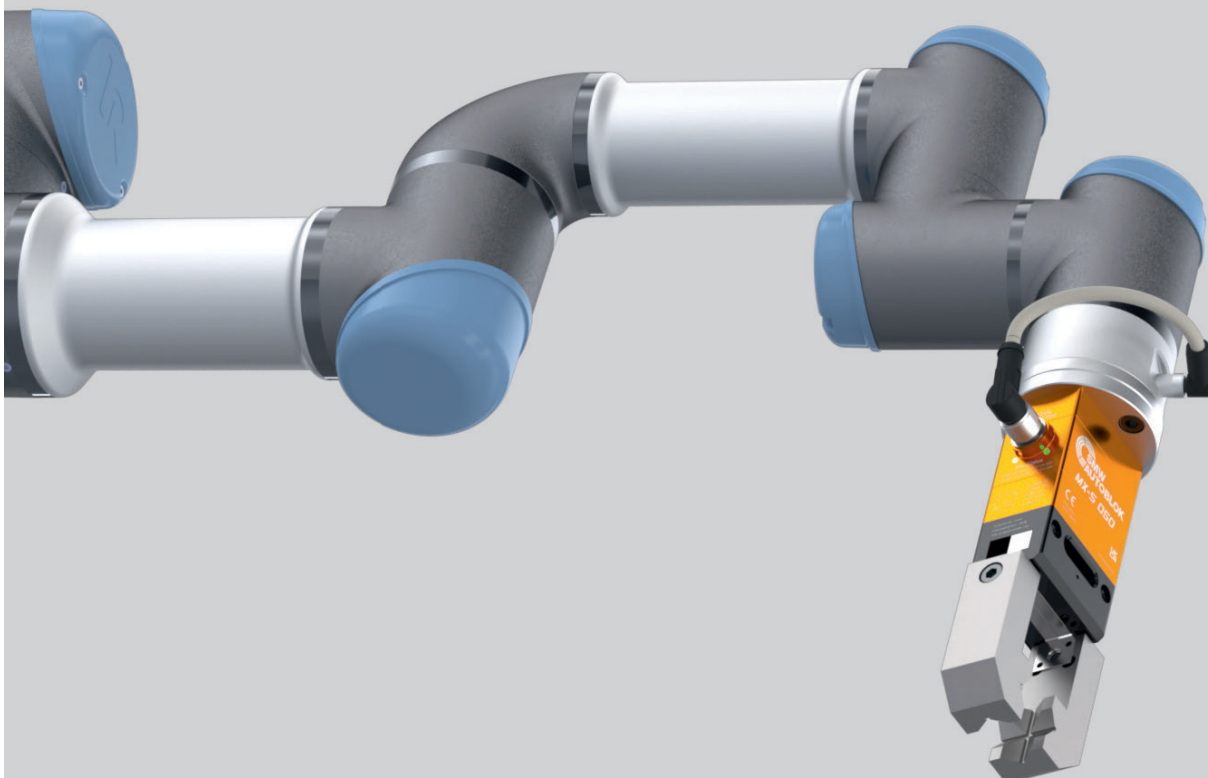
Application examples

Greifer-Kit MX-S 050 with UR

Ready for immediate use:

Complete gripper unit incl. mechatronic gripper, gripper fingers, mounting accessories, connection cable and URCap.

UR-COBOT
(customer side)



Gripper kits for other manufacturers available on request.



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