

MX-S

MECHATRONIC SMALL PARTS GRIPPER

Gripping force independent of gripping speed and stroke
Mechatronic drive with gripping force retention
Position measuring system
Pre-positioning and gripping force adjustment



Mechatronic gripper

■ 2 finger parallel



Application/customer benefits

- Gripping force independent of gripping speed and stroke
- Mechatronic drive with gripping force retention
- Position measuring system absolute (MX-S 050)
- 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

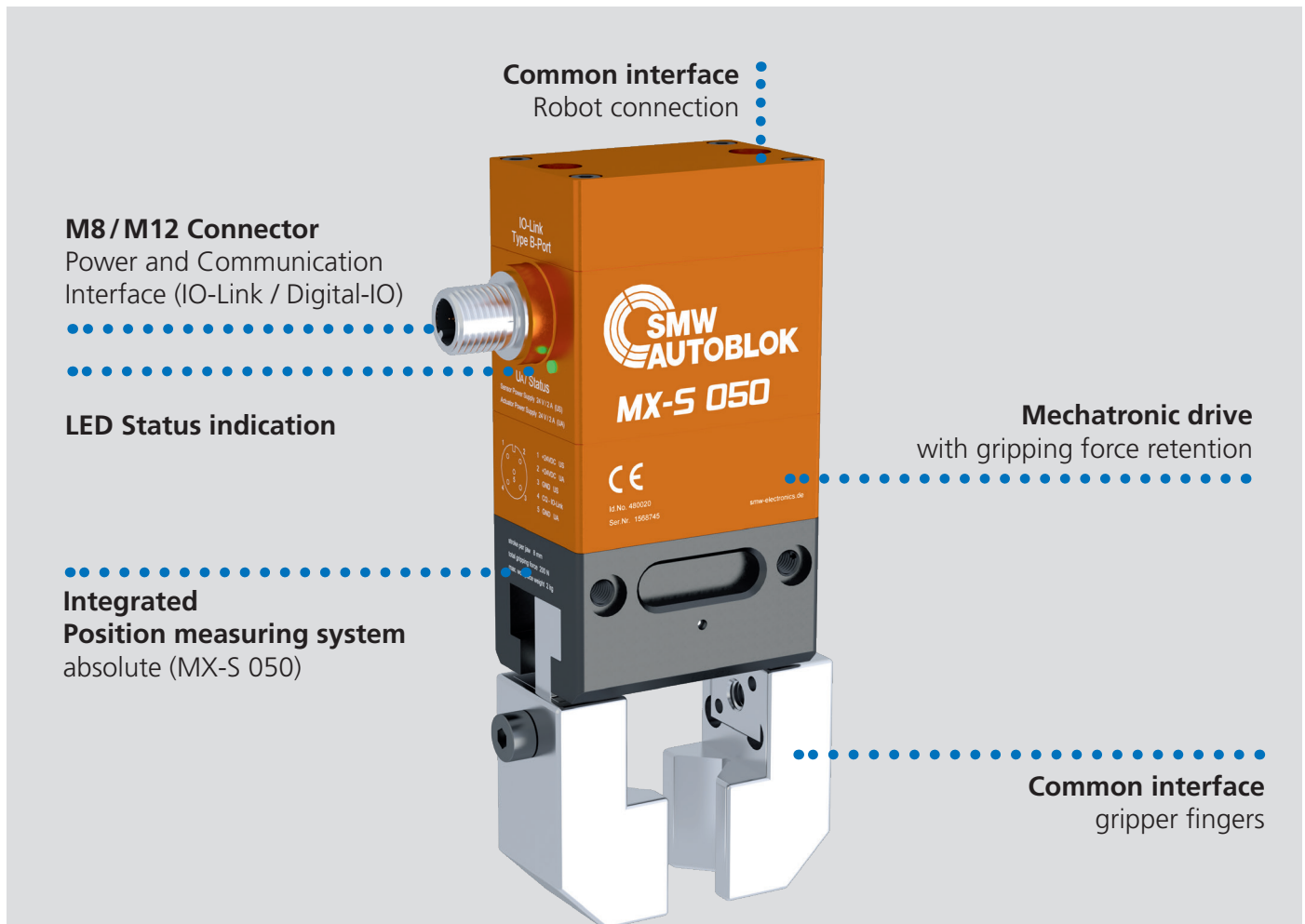
Technical features

- 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

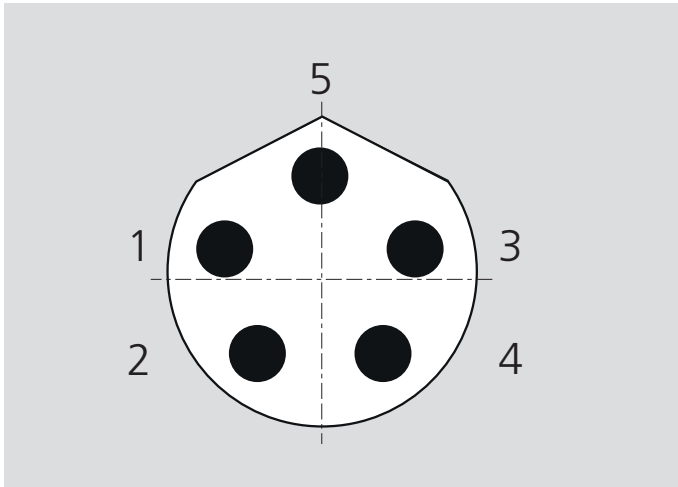


* The illustration shows an example with the MX-S 050 gripper.

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 050	IO-Link	●	●	●	●	●	-
	Digital-IO	●	●	●	●	●	●

¹ End position monitoring/gripper feedback

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



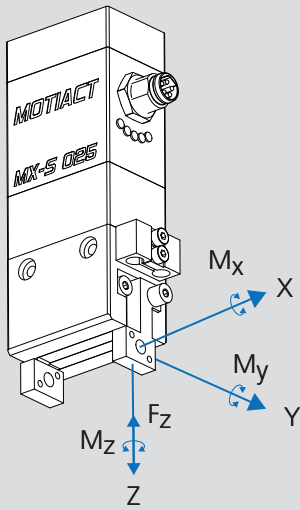
Digital IO Interface M8-5B

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

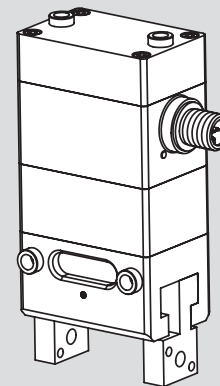
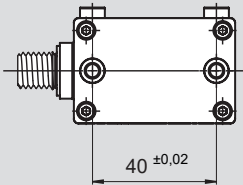
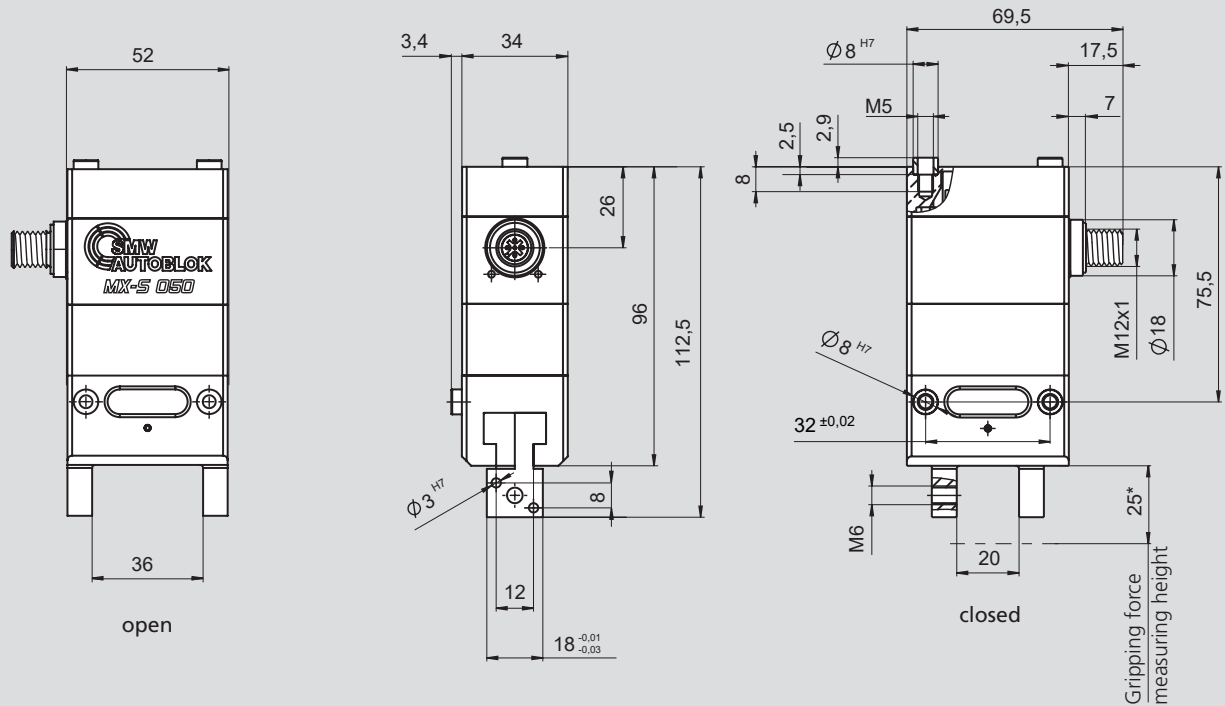
Shows static forces and moments that can act in addition to the gripping force.



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

A large area of horizontal stripes in two shades of blue, alternating between a medium blue and a light blue. This area is intended for writing notes.

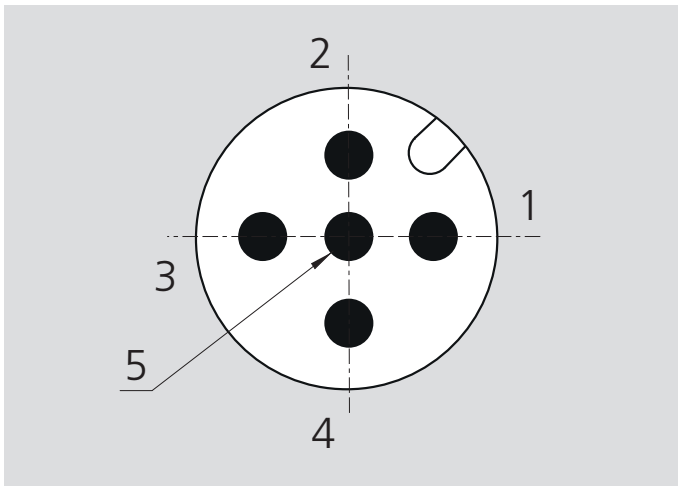


Subject to technical changes.
For more detailed information please ask our customer service.

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

Type		MX-S 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	19.2 ... 30 V
Max. Power consumption	A	I _S ≤ 100 mA, I _A ≤ 2 A	2 A
Idle current (in non-moving state)	A	I _S = I _A < 100 mA	I < 100 mA
Protection class			IP40
Interface		IO-LINK	Digital-IO

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



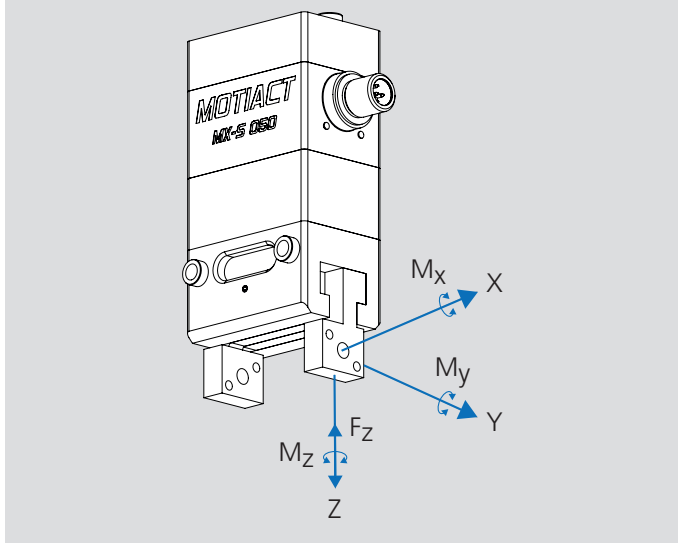
IO-Link Port B		
Pin	Function	Description
1	US+	Power supply IO-Link logic 24V DC
2	UA+	Power supply actuator 24V DC
3	US-	Ground IO-Link logic
4	C/Q	IO-Link signal
5	UA-	Ground Actuator

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

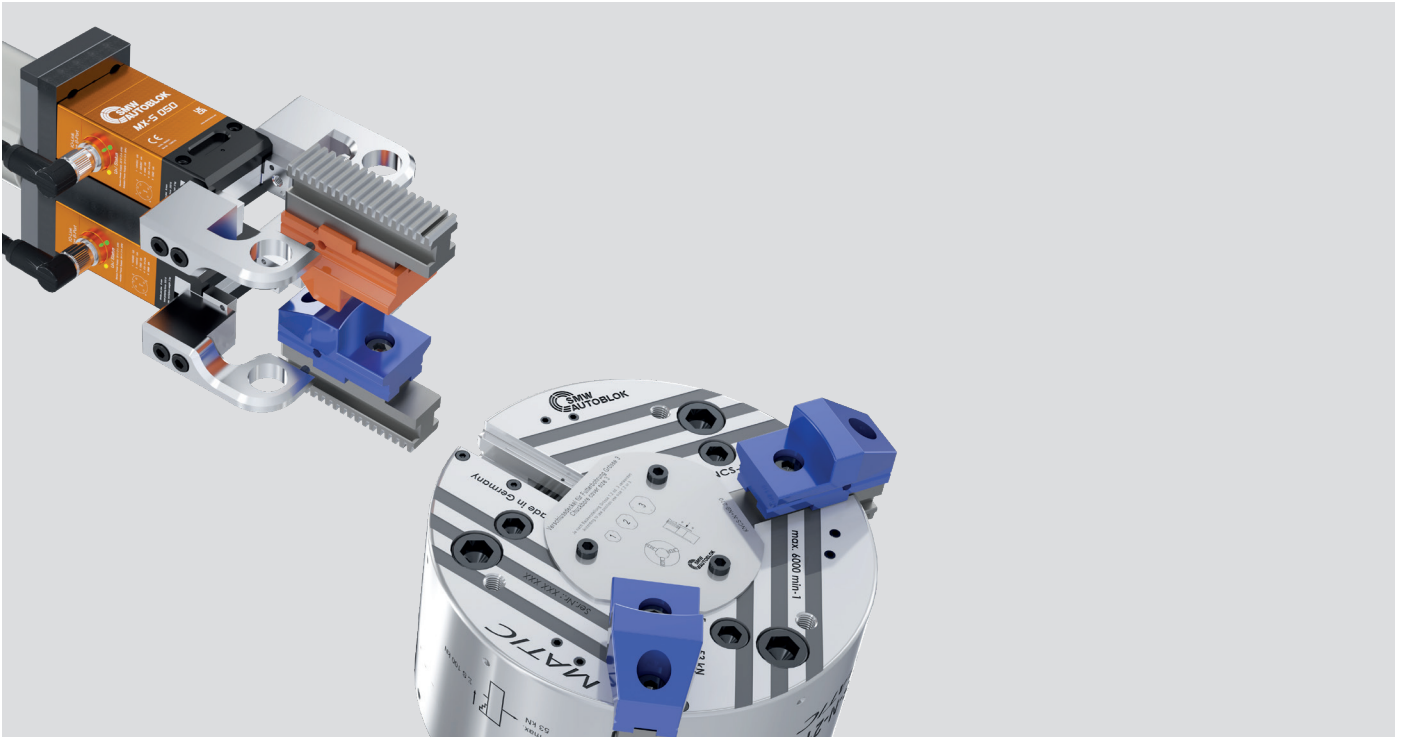
Forces and moments

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

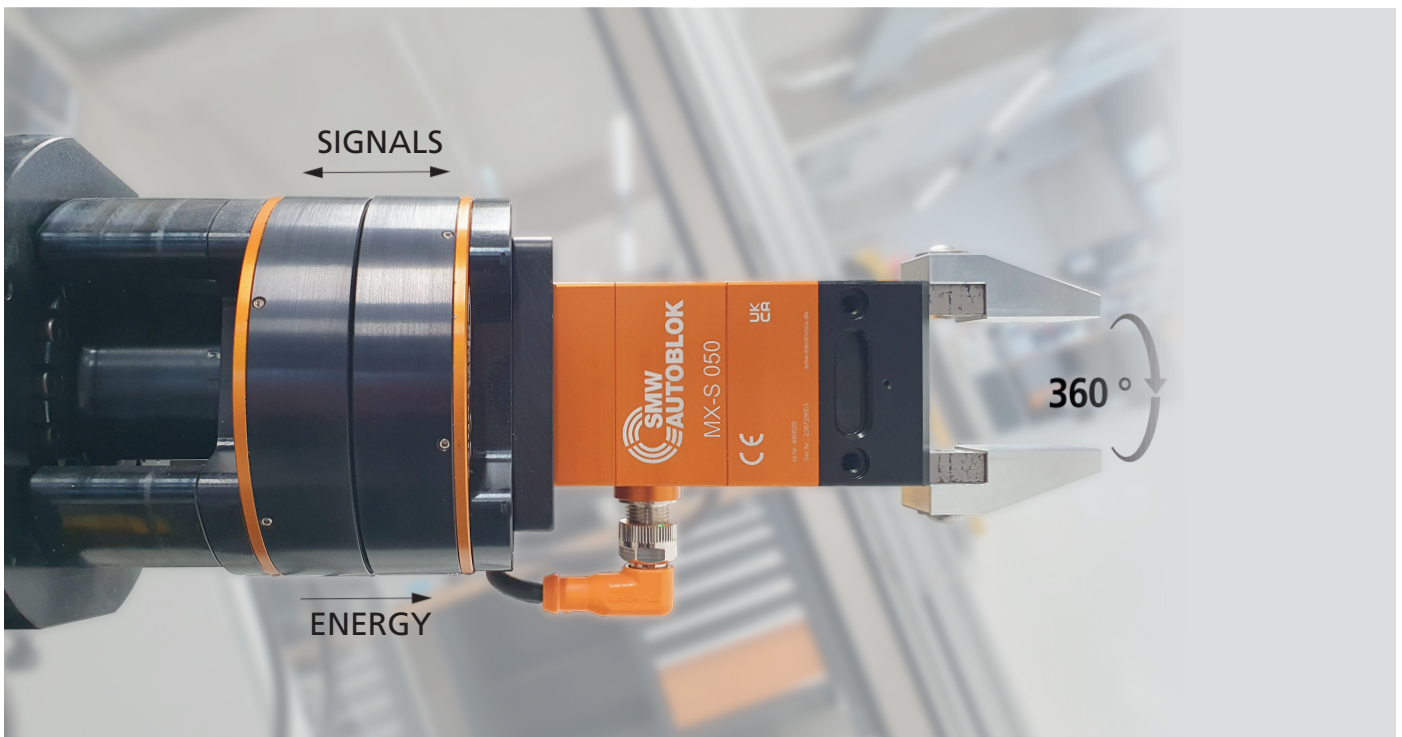


M_x	max. moment in X-axis	Nm	5
M_y	max. moment in Y-axis	Nm	5
M_z	max. moment in Z-axis	Nm	5
F_z	max. weight force in Z-axis	N	200

Use MX-S for automated quick jaw change with KNCS-*matic*



Use MX-S with inductive coupling system F100-2IOL



Advantages:

- > 360° rotation possible
- all advantages of inductive couplers versus slip ring: wear- and maintenance-free
- no interfering contour due to cables or hoses and no limitation due to acceleration forces
- extremely flat design due to direct mounting / TCP (Tool Center Point) close to flange

Notes

A large area of horizontal stripes in two shades of blue, alternating between a medium blue and a light blue. This area is intended for taking notes.

F100-2IOL

Inductive Coupling System

Axial coupler

■ 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

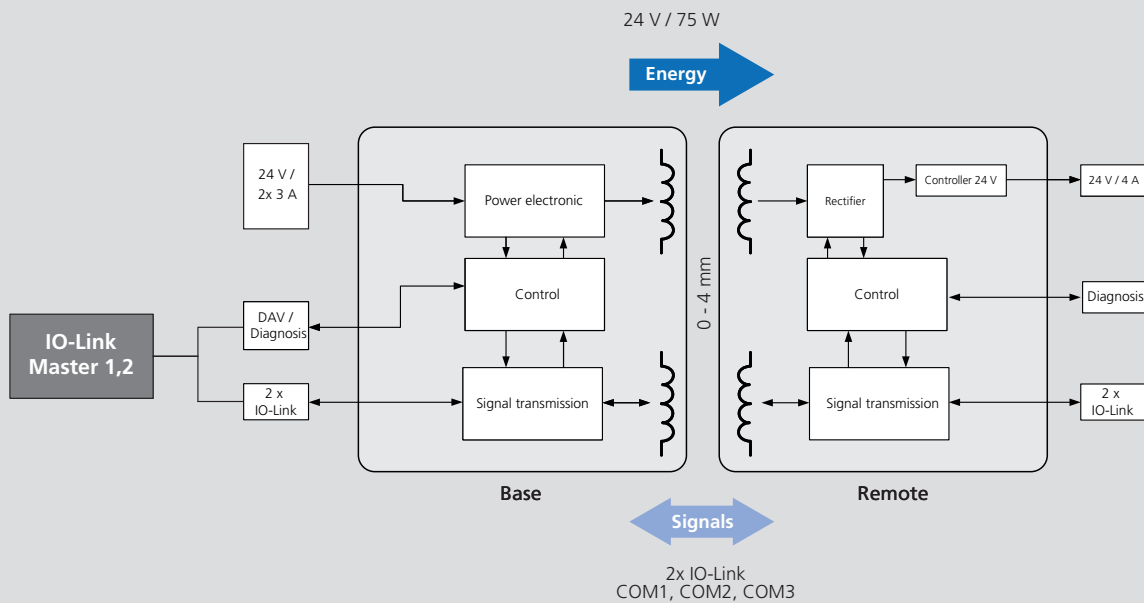
Technical features

- 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.



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	

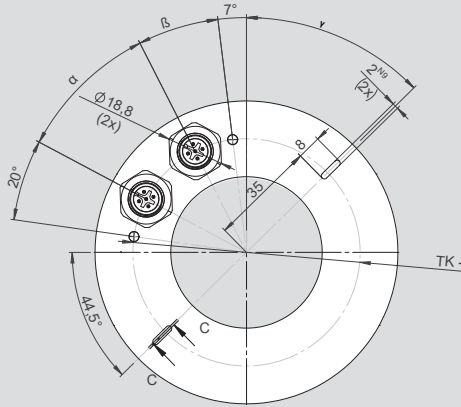
Inductive Coupling System

F100-2IOL

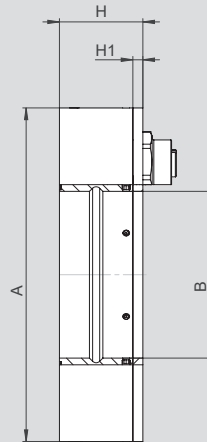
- Stationary unit - Base
- Mobile unit - Remote

Axial coupler

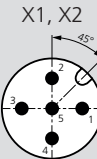
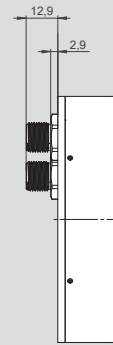
Base / Remote:



Base / Remote:

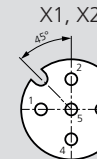
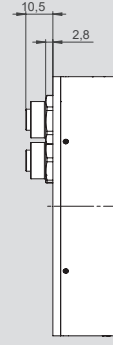


Base:



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.		OE012330	OE012331
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	-	-	-	-

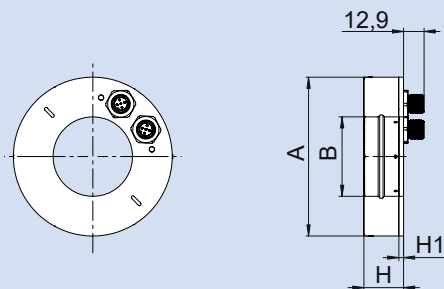
F100-2IOL F100 Ethernet

Axial coupler

Inductive Coupling Systems

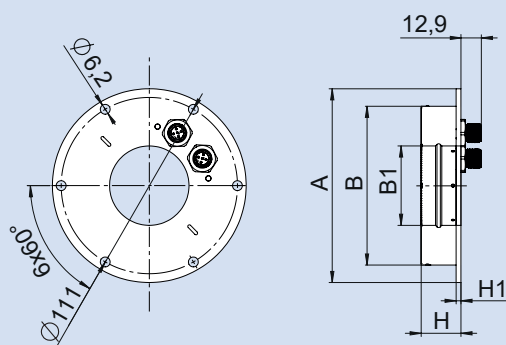
■ Ordering overview flange

Standard flange



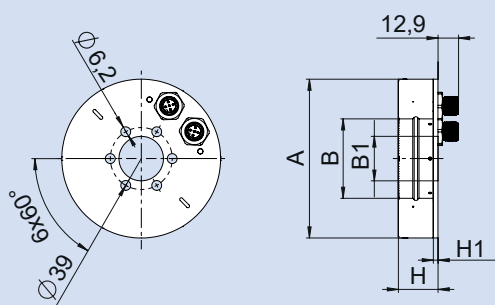
Type	F100-2IOL		F100 Ethernet	
	IC-Base-F100-2IOL D100/050	IC-Remote-F100-2IOL D100/050	IC-Base-F100-ETH D100/050	IC-Remote-F100-ETH D100/050
Id.-No.	0E012330	0E012331	0E011420	0E011421
A	100			
B	50			
B1	-			
B2	-			
H	25			
H1	3			
Weight	0.26 kg			

Outer flange with feed-through



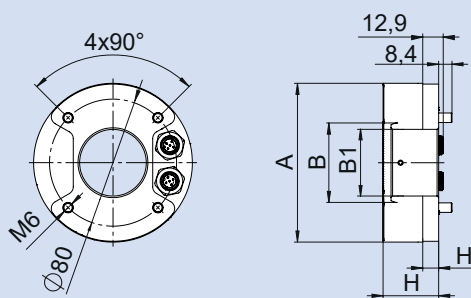
Type	F100-2IOL		F100 Ethernet	
	IC-Base F100-2IOL D122/050	IC-Remote-F100-2IOL D122/050	IC-Base F100-ETH D122/050	IC-Remote-F100-ETH D122/050
Id.-No.	0E012332	0E012333	0E012320	0E012321
A	122			
B	100			
B1	50			
B2	-			
H	25			
H1	3			
Weight	0.36 kg			

Inner flange with feed-through



Type	F100-2IOL		F100 Ethernet	
	IC-Base F100-2IOL D100/028	IC-Remote-F100-2IOL D100/028	IC-Base F100-ETH D100/028	IC-Remote-F100-ETH D100/028
Id.-No.	0E012334	0E012335	0E012322	0E012323
A	100			
B	50			
B1	28			
B2	-			
H	25			
H1	3			
Weight	0.34 kg			

Flangering with feed-through



Type	F100-2IOL		F100 Ethernet	
	IC-Base F100-2IOL D100/042	IC-Remote-F100-2IOL D100/042	IC-Base F100-ETH D100/042	IC-Remote-F100-ETH D100/042
Id.-No.	0E012336	0E012337	0E012324	0E012325
A	100			
B	50			
B1	42			
B2	-			
H	25			
H1	10			
Weight	0.48 kg			

FURTHER OPTIONS AVAILABLE ON REQUEST!

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

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