SELF-CENTERING, PARALLEL, LONG STROKE GRIPPERS WITH SLIDING GUIDE

News

SERIES CGPW

Double acting, magnetic, self-centering
Sizes: 25, 40

- Robust and compact design
- Self-centering jaws
- High closing and opening repeatability
- High interchangeability (centering bushes)
- In compliance with ROHS directive
- PTFE, Silicone and Copper free
- High resistance to external loads thanks to the T-guide

Designed to maximize efficiency in confined spaces, this parallel gripper is ideal for palletizing and pick & place operations in the material handling and packaging sectors.
The self-centering jaws slide on internal guides, allowing for precise opening with minimal space requirements.
Its compact and robust design enables the handling of heavy loads and the application of significant opening and closing forces, while maintaining a small footprint.
High reliability is ensured by the T-guide, which provides resistance to external loads and excellent motion repeatability.

General Data

Type of construction	Self-centering long stroke parallel grippers with T-guide
Operation	Double acting
Sizes	Ø 25, 40 mm
Force transmission	Rack and pinion
Air connections	M5 (Ø 25), G1/8, M5, M7 (Ø 40)
Working pressure	2 ÷ 8 bar (double acting)
Working temperature	5°C ÷ 60°C
Store temperature	-10°C ÷ 80°C
Maximum use frequency	1 Hz (Ø 25, 40)
Repeatability	0.03 mm
Interchangeability	0.1 mm
Medium	Filtered air in class [7:4:4] according to ISO 8573-1. In case lubricated air is used, we recommend ISOVG32 oil and to never interrupt lubrication.
Lubrication	After 10 million cycles, grease the sliding zones using Molykote DX grease.
Protection class	IP 40
Compatibility	ROHS Directive
Materials	PTFE, Silicone and Copper free

Coding example

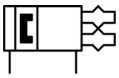
CGPW	-	25	-	80

CGPW	SERIES
25	SIZES 25 40
80	STROKES 40 80 120 160

Pneumatic symbols

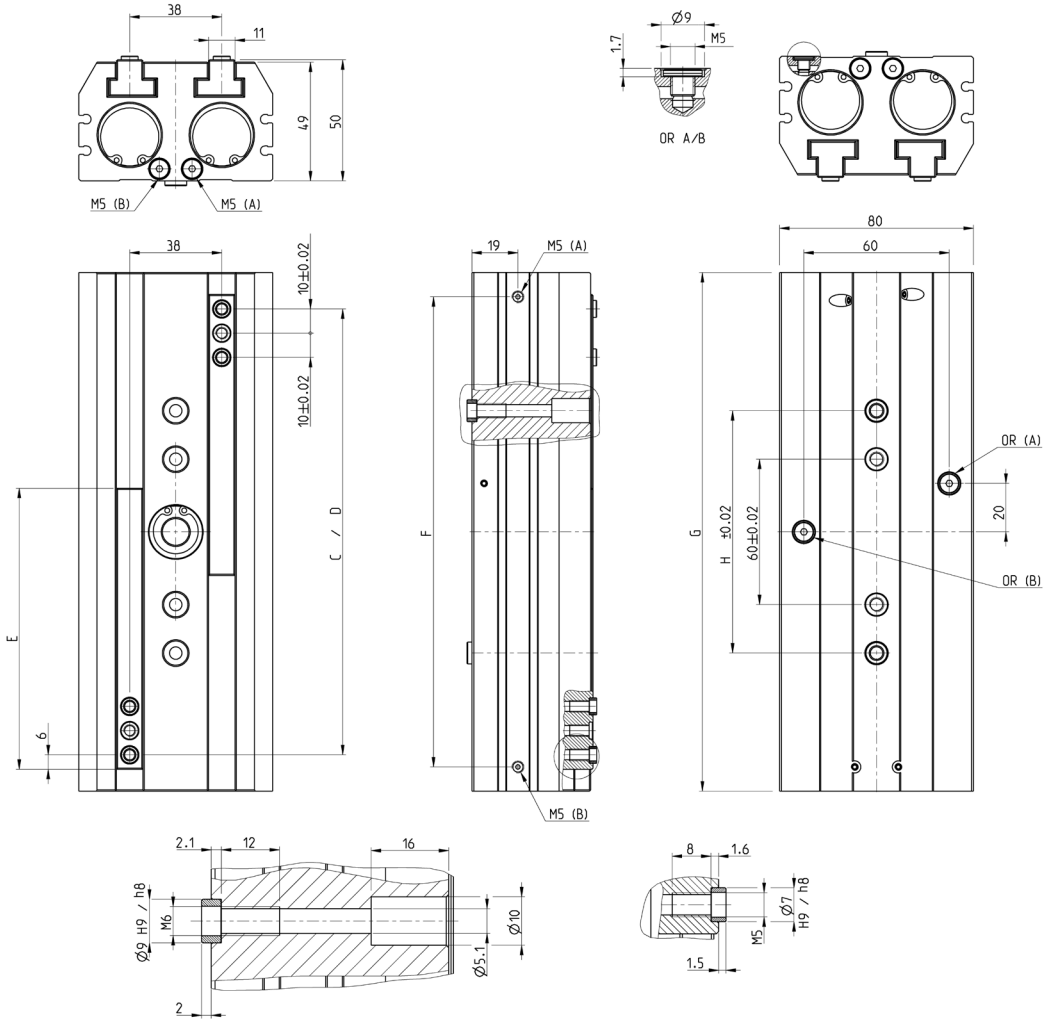
The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.

PNZ1



CGPW gripper, size 25 mm - dimensions

News



DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection

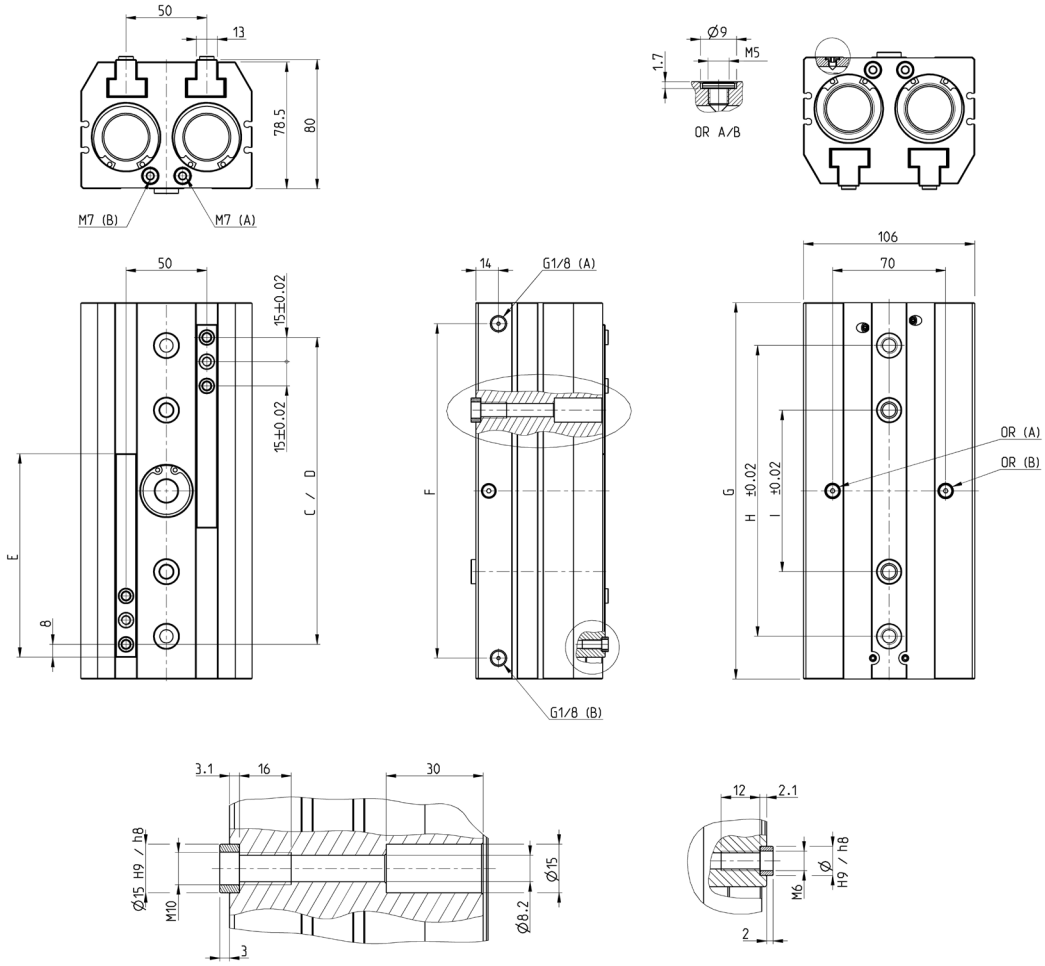
Mod.	Total closing gripping force at 6 bar [N]*	Closing gripping force per jaw at 6 bar [N]*	Total opening gripping force at 6 bar [N]*	Opening gripping force per jaw at 6 bar [N]*	Working pressure [bar]*	Working temperature [°C]*	Repeatability [mm]*	Max. use frequency at 6 bar [Hz]*
CGPW-25	516	258	516	258	2÷8	5÷60	0,03	1

*the reported data are valid for all strokes of the selected size.

Mod.	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Total stroke [mm]	Weight [kg]
CGPW-25-40	64	24	56	74	94	-	40	0,94
CGPW-25-80	144	24	76	114	134	-	80	1.15
CGPW-25-120	104	24	96	154	174	-	120	1.62
CGPW-25-160	184	24	116	194	214	-	160	1.95

CGPW gripper, size 40 mm - dimensions

News



DRAWING LEGEND:
A = Opening of air connection
B = Closing of air connection

Mod.	Total closing gripping force at 6 bar [N]*	Closing gripping force per jaw at 6 bar [N]*	Total opening gripping force at 6 bar [N]*	Opening gripping force per jaw at 6 bar [N]*	Working pressure [bar]*	Working temperature [°C]*	Repeatability [mm]*	Max. use frequency at 6 bar [Hz]*
CGPW-40	1300	650	1300	650	2÷8	5÷60	0,03	1

*the reported data are valid for all strokes of the selected size.

Mod.	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Total stroke [mm]	Weight [kg]
CGPW-40-40	70	30	66	87	113	-	66	40	2.36
CGPW-40-80	110	30	86	127	153	-	100	80	3.05
CGPW-40-120	150	30	106	167	193	-	100	120	3.74
CGPW-40-160	190	30	126	207	233	180	100	160	4.43

Gripping force (F) per single jaw

The gripping force refers to a single jaw of the gripper.
To calculate the total force developed by the gripper, you need to multiply the found value by 2:

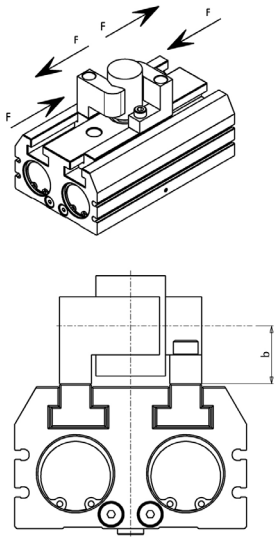
Total F = F × 2

The graphs shown represent the trend of the supplied force *F*, per single jaw, according to distance *b*, where:

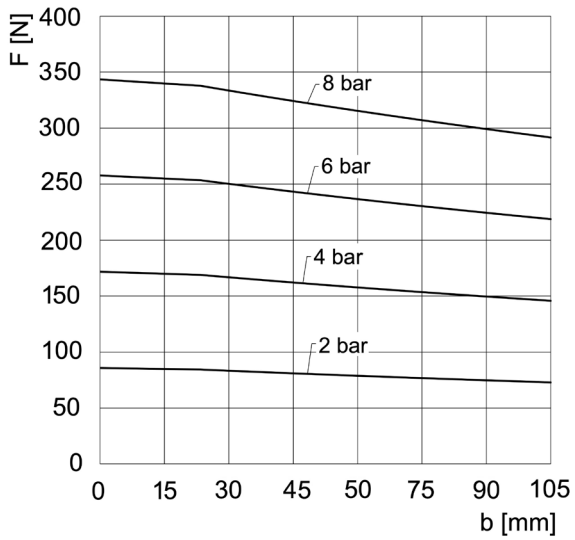
- *F* is the force developed by the single jaw, both during opening and during closing;
- *b* is the distance between the gripping point of the workpiece and the finger-jaw surface area (reference for the lever arm), expressed in mm.

Notes:

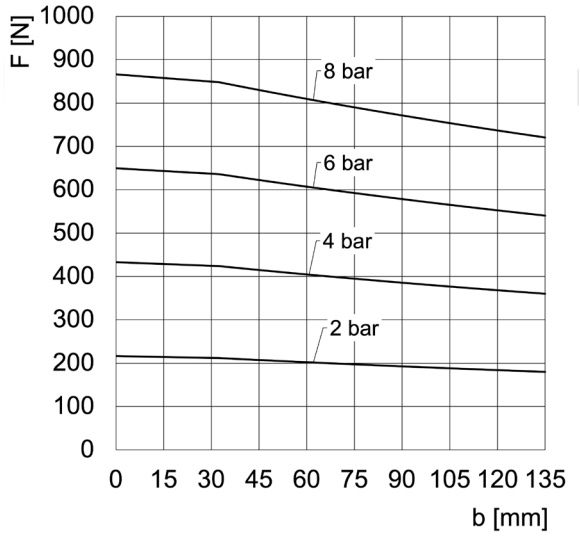
- The curves refer both to opening and closing force;
- Performance does not vary according to the stroke.



CGPW-25



CGPW-40



Note:
The graphs refer to both opening and closing force and do not change as a function of stroke.

Gripper's use area

The effective gripping force developed by the gripper is affected by the position of the gripping point, described by:

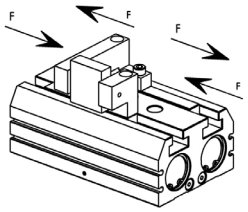
- *b* is the distance between the gripping point of the workpiece and the finger-jaw surface area (reference for the lever arm), expressed in mm.
- *e* is the eccentricity, i.e. the misalignment of the load with respect to the longitudinal axis of the gripper.

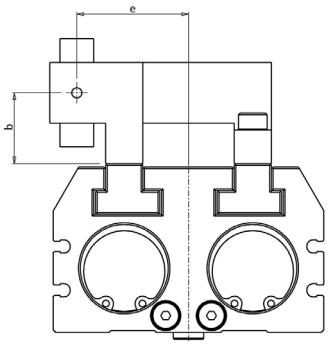
To calculate the total force developed by the gripper, you need to multiply the found value by 2:

Total F = F × 2

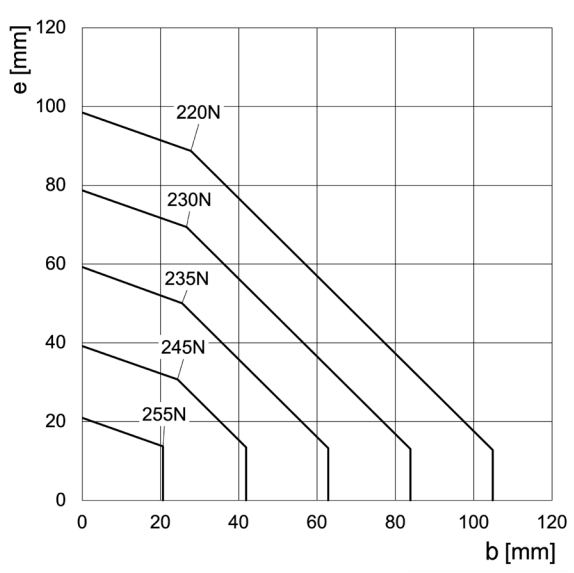
The graphs show the curves illustrating the combinations of lever arm *b* and eccentricity *e* that allow the gripper to develop certain gripping forces *F* per jaw, obtained with a constant supply pressure of 6 bar.

Note:
The force values indicated on the curves were obtained with 6bar.

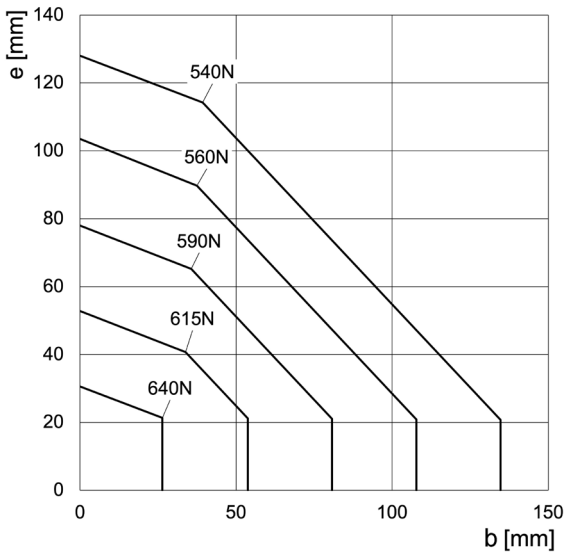




CGPW-25



CGPW-40

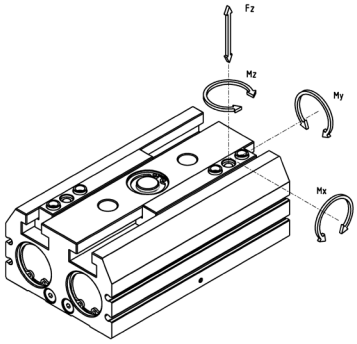


Maximum allowable torque

The indicated force and torque values refer to a single jaw of the gripper.
When calculating the acting loads, the following factors must be carefully considered:

- Additional loads caused by the weight of the workpiece and the fingers applied to the jaw;
- Gripping force generated during the gripping of the workpiece;
- The effect of the lever arm, i.e. the distance between the point of force application and the reference system indicated on the jaw;
- The acceleration forces generated during dynamic movements of the gripper.

To calculate the torque forces, you must use the indicated system of reference. The origin is at the centre of the jaw's hole, on its upper surface.



Static load limits

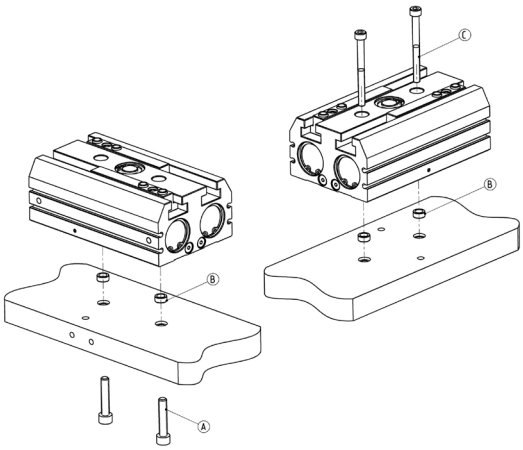
Mod.	Mx [Nm]	My [Nm]	Mz [Nm]	Fz [N]
CGPW-25	50	55	50	3500
CGPW-40	145	150	145	7500

Fatigue load limits at 10.000.000 cycles

Mod.	Mx [Nm]	My [Nm]	Mz [Nm]	Fz [N]
CGPW-25	45	50	45	3000
CGPW-40	130	140	130	6900

Examples of mounting

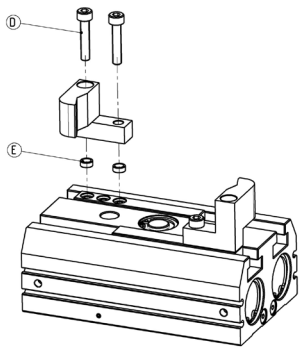
Mounting of the gripper



You can mount the gripper from above and from below thanks to threaded and through holes.
Centering bushes are supplied to make is easier to position the gripper and ensure stability during its operation.
Here below you will find dimensional data to mount the gripper:

Mod.	A	B	C
CGPW-25	M6	Ø9 h8	M5
CGPW-40	M10	Ø15 h8	M8

Mounting of the fingers



You can mount the fingers by means of threaded holes on the jaws. Use the supplied centering bushes to ensure repeatability and precision.

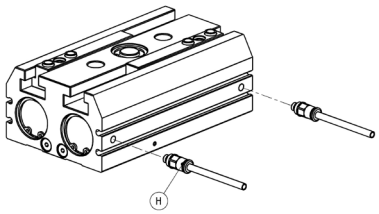
Here below you will find dimensional data to mount the gripping fingers:

Mod.	D	E
CGPW-25	M5	Ø7 h8
CGPW-40	M6	Ø9 h8

Ports for air supply

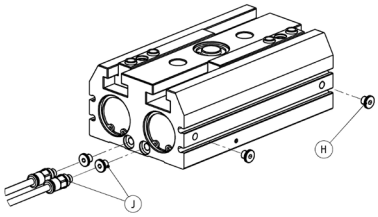
The ports are present on three sides (front, side and bottom) of the gripper body, to ensure mounting flexibility.
Here below you can find the different supply options:

Supply from the front



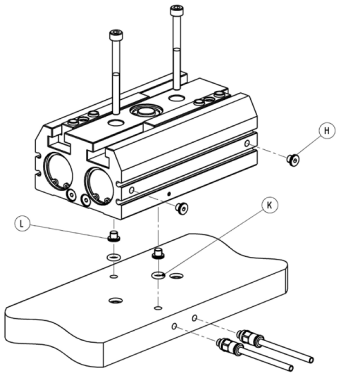
- Use the fittings of dimension *H* for the supply of the gripper (not included).

Supply from the side



- Use the caps of dimension *H* (not included) to close the supply holes positioned on the front;
- Unscrew the caps of dimension *J*, positioned on the side of the gripper, and use fittings with the same dimension as *J* (fittings not included).

Supply from the bottom

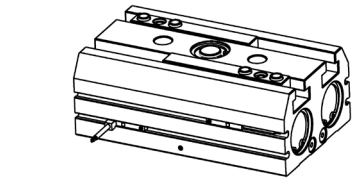


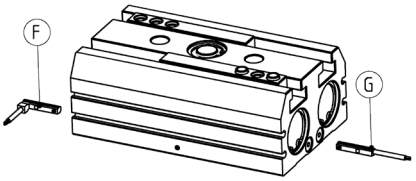
- Use the caps of dimension *H* (not included) to close the supply holes positioned on the front;
- Unscrew the caps of dimension *L*, positioned on the bottom of the gripper, and:
  - Use O-Rings of dimension *K* (not included) or
  - Use fittings with the same dimension as *L* (not included).

Mod.	H	J	K	L
CGPW-25	M5	M5	OR Ø5X2	M5
CGPW-40	G1/8	M7	OR Ø5X2	M5

Example of mounting: sensors

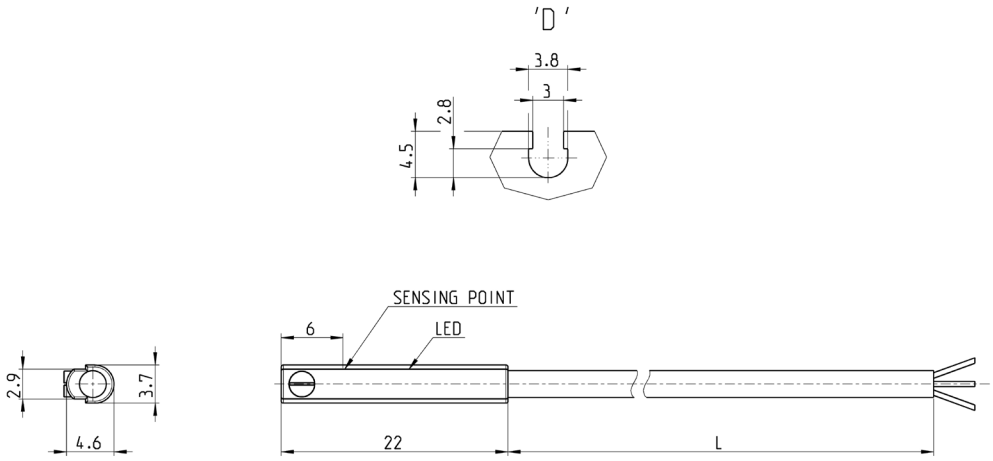
The magnetic proximity switches Series CSD are compatible with the slot on the gripper.





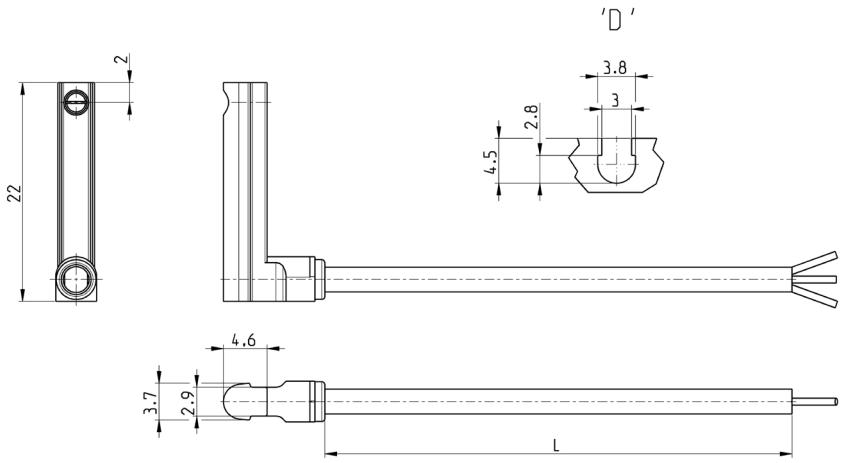
Mod.
F = CSD-H-334 **CSD-H-364**
G = CSD-D-334 **CSD-D-364**

Magnetic proximity switches, 3-wire cable, D-slot



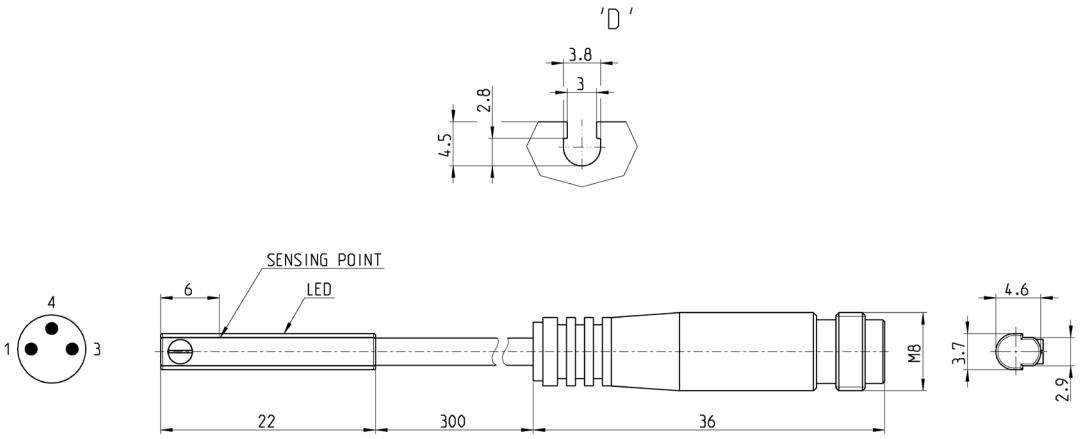
Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L = length cable
CSD-D-334	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage	2 m
CSD-D-334-5	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6W	Against polarity reversing and overvoltage	5 m

Magnetic proximity switches, 3-wire cable, D-slot with 90° cable



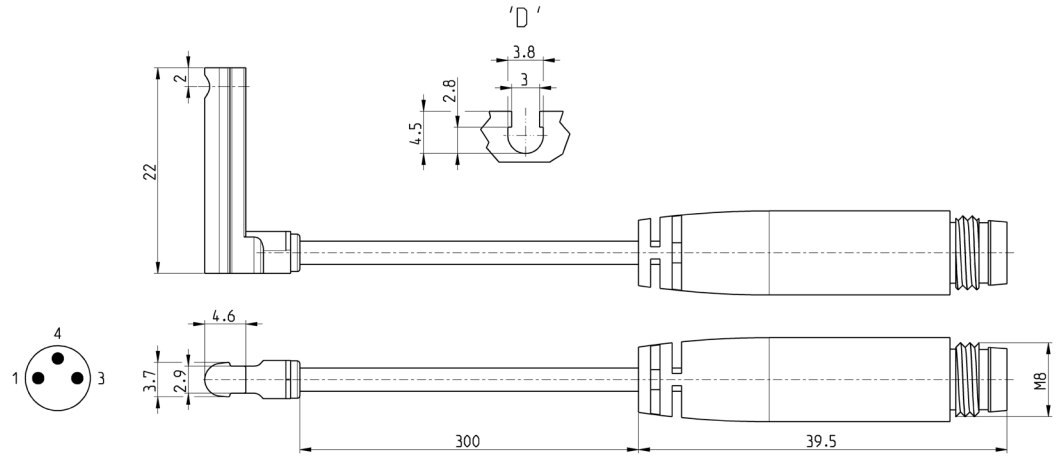
Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L = length cable
CSD-H-334	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6 W	Against polarity reversing and overvoltage	2 m
CSD-H-334-5	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	200 mA	6 W	Against polarity reversing and overvoltage	5 m

Magnetic proximity switches, male M8 3-pin conn., D-slot, straight



Mod.	Operation	Connection	Voltage	Output	Max. current	Max Load	Protection
CSD-D-364	Magnetoresistive	3 wires with M8 connector	10 ÷ 27 V DC	PNP	200 mA	6 W	Against polarity reversing and overvoltage

Magnetic proximity switches, male M8 3-pin conn., D-slot, 90°



Cable length: 0.3 m

Mod.	Operation	Connection	Voltage	Output	Max current	Max load	Protection
CSD-H-364	Magnetoresistive	3 wires with M8 connector	10 ÷ 27 V DC	PNP	200 mA	6 W	Against polarity reversing and overvoltage