lubrication systems

DPL

Monoblock Progressive Distributors

High quality and tight tolerances
An unbeatable combination of performance and value

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Features

Standard check valve

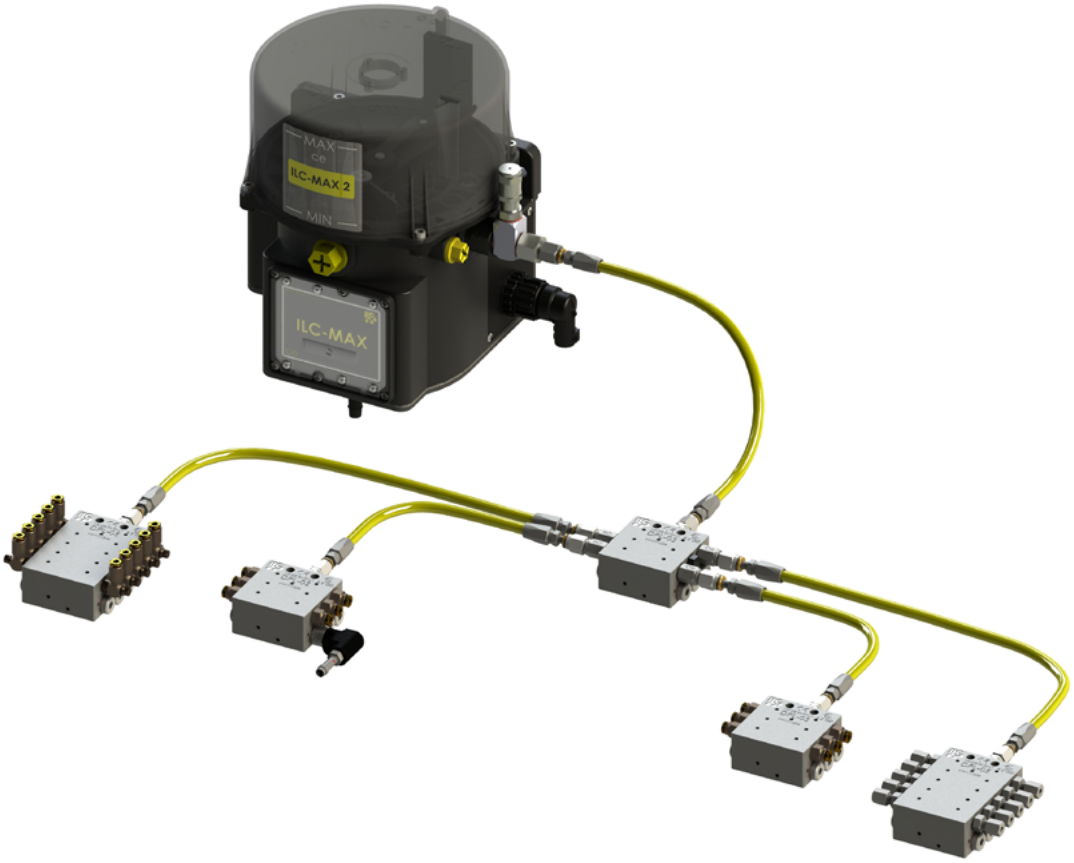
Always supplied with a check valve at the distributor inlet

Configuration

Easy-to-configure solution thanks to the reduced number of pistons

Summable flow rates

Possibility to combine the flow into the next outlet using the closure plug.



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System

The DPL system ensures precise lubricant distribution through the progressive movement of pistons, each one sequentially actuated by the other thanks to a single centralized supply flow.

Designed for lubrication with oil or grease, the system is ideal for serving one or more bearing groups. Each piston is mechanically interconnected with the next or previous one: interruption of the cycle of any piston results in the stoppage of the entire sequence, and thus, the shutdown of the entire system.

The system can also lock due to an external obstruction or the closure of an unused outlet, thus ensuring immediate diagnosis of operational anomalies.
A single monitoring device—visual or electrical—is sufficient to effectively and comprehensively monitor the entire distribution cycle.

Flow rate can be modulated by installing dosing blocks in cascade. A "master" module can feed one or more progressive distributors, which in turn can serve additional distribution stages.

Although theoretically possible to extend the network beyond two cascade levels, it is recommended not to exceed this limit. Factors such as compressibility and aeration of the lubricant—especially with low-penetration greases and minimal flow rates—may compromise uniform distribution.

Dati Tecnici

Operating pressure	15 to 300 Bar
Approved lubricants	Mineral oil 46 cSt – Grease up to NLGI-2
Operating temperature	-40° C to +110° C
Dosage [per single outlet]	200 mm^3/cycle
Inlet port	1/8 BSP
Outlet ports	M10 x 1
Number of outlets	From 6 to 20
Cycle rate	Max 350/min
Protective treatment	Zinc-nickel, guaranteed 800 hours in salt spray
Marking	ATEX II GD – CE
Element material	Zi-Ni galvanized steel (Cr-V free)

Flow Summing

Using cap **05.026.1**, the lubricant is conveyed into the outlet below.

In the example (fig. 3), the cap is used on outlet **C** and the lubricant is conveyed to outlet **E**; similarly, a cap on outlet **G** conveys the lubricant to outlet **I**.

05.026.1

The plugs in series on outlets **D, F,** and H convey the lubricant to outlet **L**.

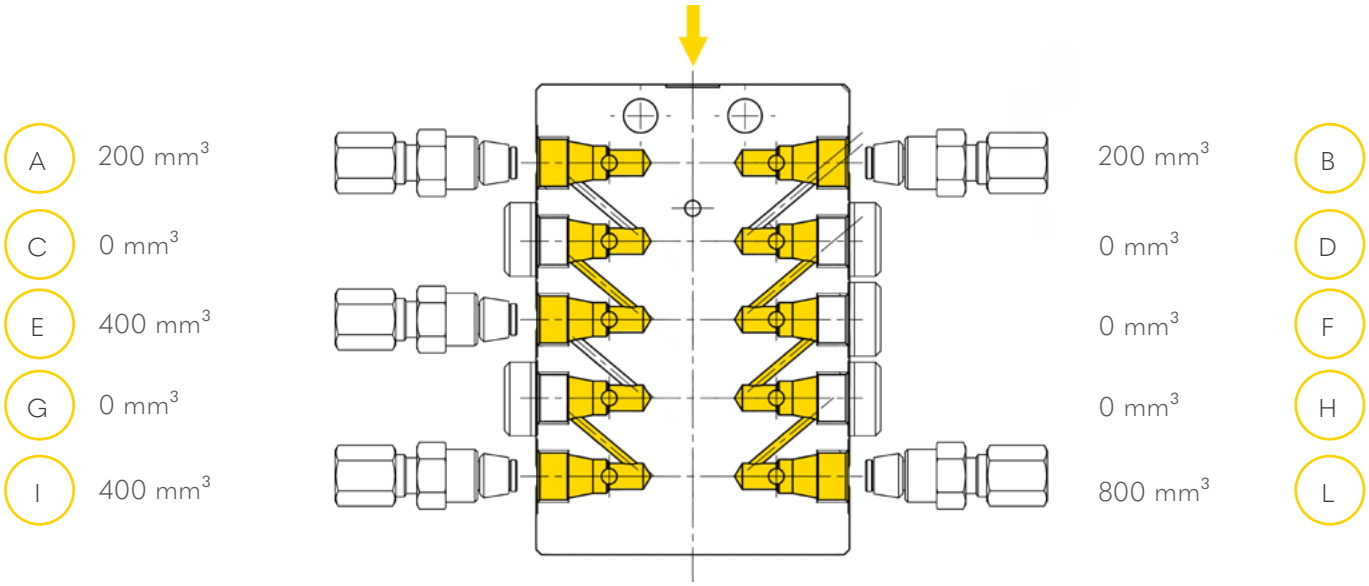

Fig.3

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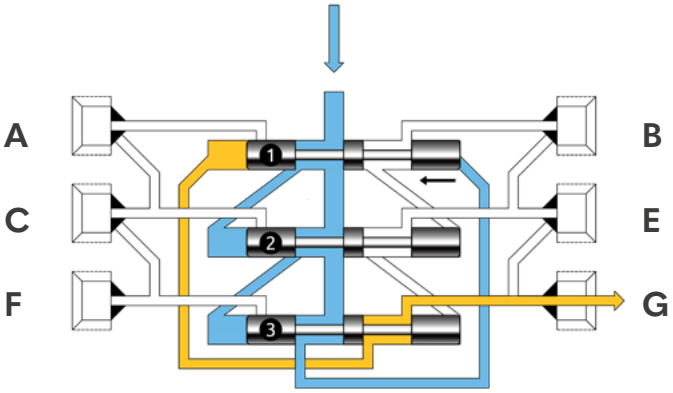
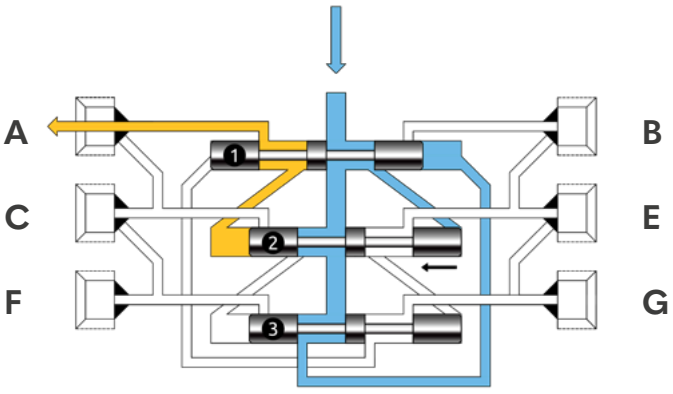
Outlet Operation



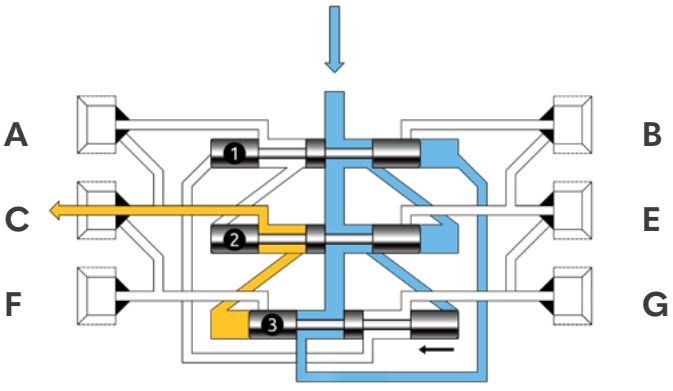
A

The pressurized lubricant flow (blue) moves piston 1 to the left, allowing dispensing (yellow) from outlet G.



B

When piston 1 has completed its stroke, the pressurized lubricant flow (blue) acts on piston 2. The volume of lubricant (yellow) is dispensed from outlet A.



C

When piston 2 has completed its stroke, the pressurized lubricant flow (blue) acts on piston 3. The volume of lubricant (yellow) is dispensed from outlet C.

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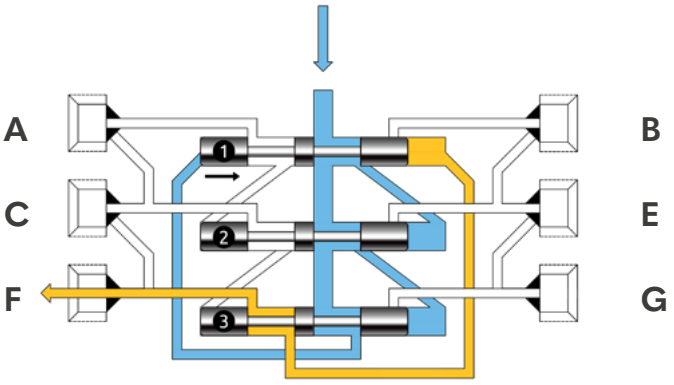
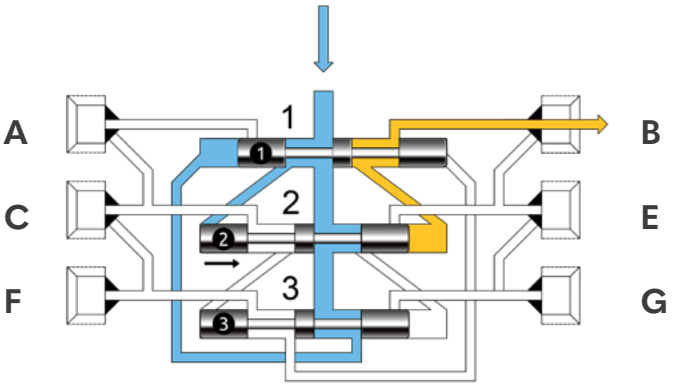


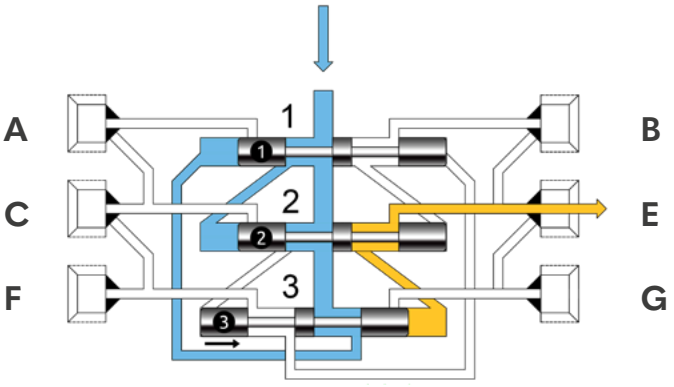
D

When piston 3 has completed its stroke, the pressurized lubricant flow (blue) acts on piston 1. The volume of lubricant (yellow) is dispensed from outlet F.



E

When piston 1 has completed its stroke, the pressurized lubricant flow (blue) acts on piston 2. The volume of lubricant (yellow) is dispensed from outlet B.



F

When piston 2 has completed its stroke, the pressurized lubricant flow (blue) acts on piston 3. The volume of lubricant (yellow) is dispensed from outlet E. The progressive divider is ready for a new cycle.

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Monoblock Metering Device

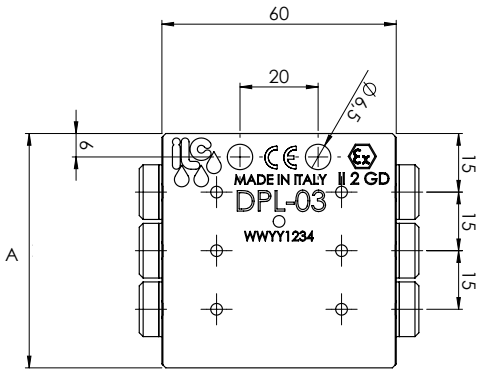
Ordering Codes

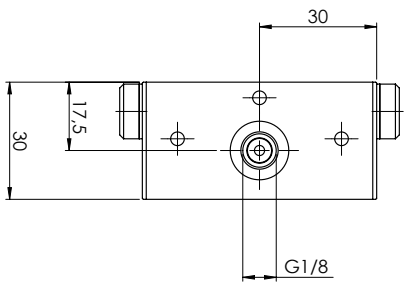
Outlets	Standard	With visual pin
6	4.1N.03	4.2V.03
8	4.1N.04	4.2V.04
10	4.1N.05	4.2V.05
12	4.1N.06	4.2V.06
14	4.1N.07	4.2V.07
16	4.1N.08	4.2V.08
18	4.1N.09	4.2V.09
20	4.1N.10	4.2V.10

With inductive sensor

Outlets	M8x1	M12x1
6	4.3I.8.03	4.3I.12.03
8	4.3I.8.04	4.3I.12.04
10	4.3I.8.05	4.3I.12.05
12	4.3I.8.06	4.3I.12.06
14	4.3I.8.07	4.3I.12.07
16	4.3I.8.08	4.3I.12.08
18	4.3I.8.09	4.3I.12.09
20	4.3I.8.10	4.3I.12.10

Overall dimensions





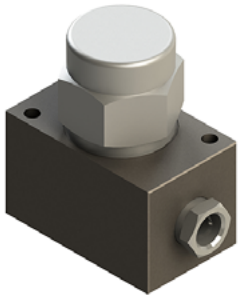
Outlets	A[mm]
6	60
8	75
10	90
12	105
14	120
16	135
18	150
20	165

BANJO Fittings — 03.355.5/ 03.355.6

Banjo fittings are installed at the inlet or outlet of the progressive distributor to allow the use of a manual or pneumatic pump in case the main pump fails.

Code	Thread
03.355.5	1/8" BSP (inlet)
03.355.6	M10 x 1 (outlet)

Inlet Filter — 07.261.1/07.261.3



These filters are installed to prevent impurities from entering the lubricant lines.

Connections **1/4" BSP (Female)**

Code	Grado di filtrazione
07.261.1	300 µ
07.260.3	125 µ

70 µ Inlet Filter — 07.270.5

These filters are installed to prevent impurities from entering the lubricant lines.

Filtration grade: **70 µ**
Connections: **1/4" BSP (F)**

ORDER CODE: 07.270.5

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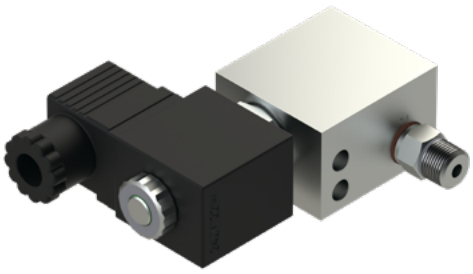
Shut-Off EV-2

A70.093688/.115/.230

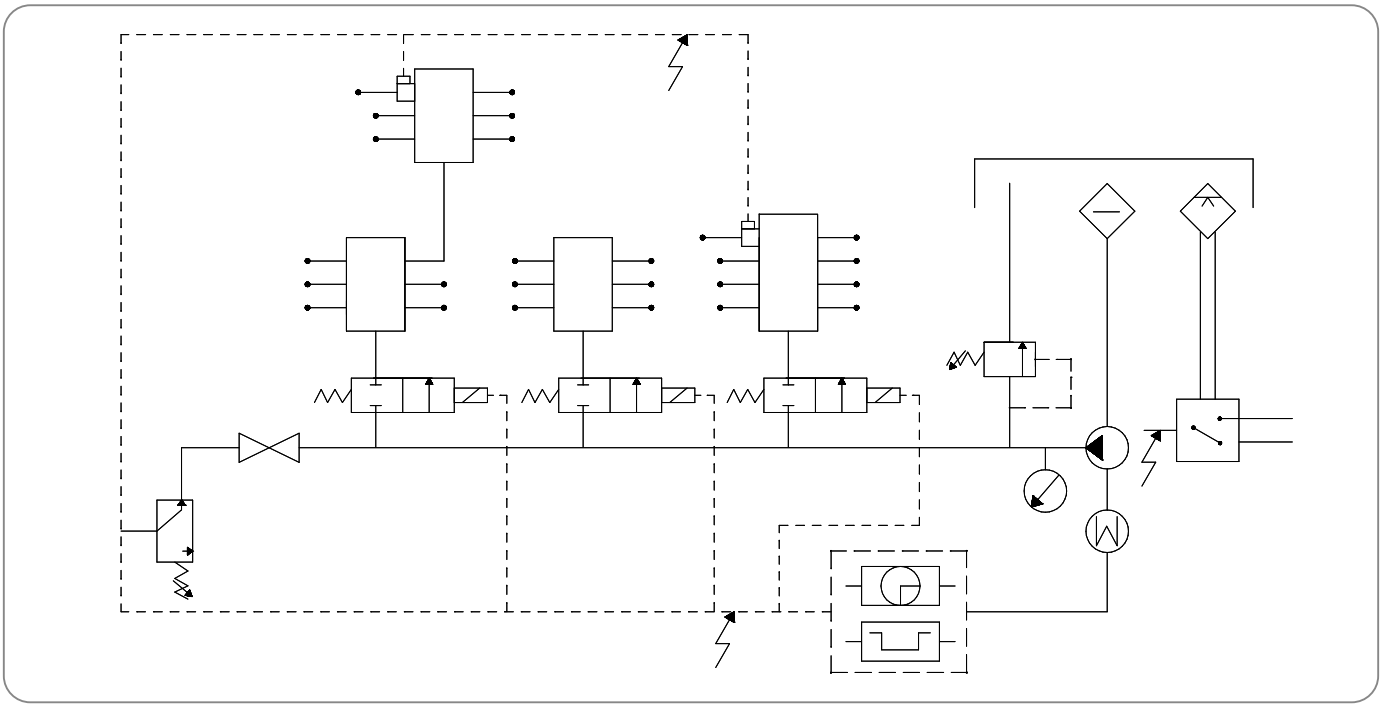


SHUT-OFF EV-2 valves consist of a 2-way "**NC**" solenoid valve and a base that is applied directly to the inlet of the progressive distributors.

The **EV-2** valve is an essential element to convert a standard progressive system into a sectionalized plant.

Code	**Voltage**
A70.093687	24 V DC
A70.093687.115	115 V AC
A70.093687.230	230 V AC

Technical Data	
Pressure	Max 300 Bar
Lubricant	Oils (minimum viscosity 32 cSt)
Grease max	NLGI-1
Temperature	From -20 °C to +80 °C
Voltage	24 V DC, 115 - 230 V AC 50/60 Hz
Power	35 W (DC), 8 VA (AC)
Protection rating	IP54
Inlet thread	1/8" BSP



Visual cycle indicator

The visual cycle indicators allow visual checking of piston movement and therefore of the system's operation.

Inductive cycle control

This control consists of an inductive sensor enclosed within a small block.

The piston moving in its working seat opens and closes the sensor contact. They can be used not only for intermittent services but also in circulating systems. They can count up to 300 movements per minute.

Electrical data

Electrical model	DC PNP NO
Voltage	10 - 30 V DC
Load current	≤ 200 mA
No-load consumption	≤ 10mA
Operating temperature	from -25 °C to +70 °C
Protection rating	IP 67 (EN60529)
Sensor body	Nickel-plated brass
Sensor block	Pet-G
Connection	M8x1 or M12x1

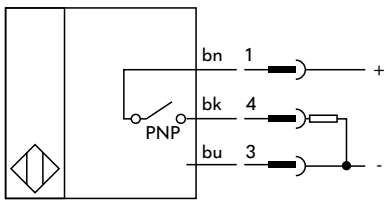
Connection cable codes

Length	M8x1 Straight	M12x1 90°	M12x1 Straight
5 m	A91.111227	A91.111316	A91.111349
10 m	A91.111348	A91.111317	A91.111296
15 m	A91.111393	A91.111318	A91.111350

Sensor kit codes

M8x1	49.053.1
M12x1	49.053.2

Electrical connections



M8x1

M12x1

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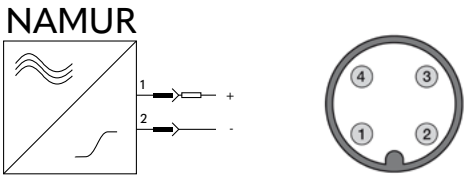
Group II Category 1D-1G/2G

Order code

49.053.2.ATX.1GD

Electrical connections



Electrical data

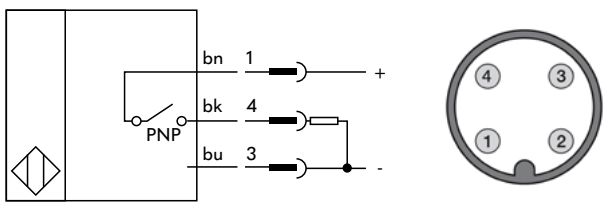
Electrical model	Connection to intrinsically safe certified electrical circuits with maximum values Ui = 15 V / Ii = 50 mA / Pi = 120 mW
Nominal voltage [V]	8.2 DC; (1kΩ)
Supply voltage	7.7...9 V DC
Min. current consumption (not attenuated)	2.1 mA
Max. current consumption (attenuated)	1 mA
Output function	NC
Ambient temperature [°C]	-20...70
Protection rating	IP 67
Explosion protection	BVS 05 ATEX E 162 X; IECEx BVS 11.0021.X; II 1 D Ex ia IIIC T90°C Da Ta: -20 °C to +70 °C; II 1G Ex ia IIC T6 Ga Ta: -20 °C to +70 °C
Sensor body	Brass
Sensor block	Aluminium
Connection	M12x1

Group II Category 3G-3D

Order code

Inductive control	49.053.2.ATX

Electrical connections



Electrical data

Electrical model	DC PNP NO
ATEX Certification	II 3G Ex nA IIC T5; II 3D Ex tD A22 IP67 T90°C
Voltage	10 - 30 V DC
Load current	≤ 200 mA
No-load current consumption	≤ 10 mA
Operating temperature	from -25 °C to +70 °C
Protection rating	IP 67 (EN60529)
Sensor body	Nickel-plated brass
Sensor block	Pet-G
Connection	M12x1

Visual pin with memory

09.710.2...7

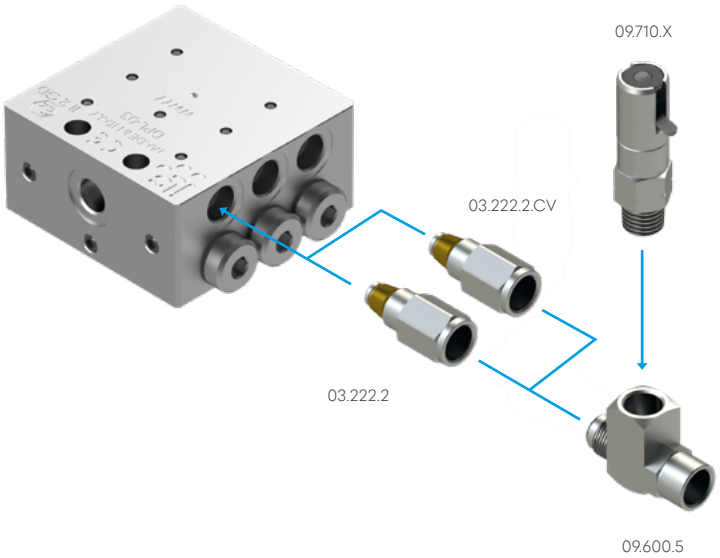
These indicators are generally used for overpressure control in primary and secondary lines.

If the pressure exceeds the set value, the indicator pin pops out. It remains in position until the release lever is manually operated.

It is recommended to identify the cause and location of the fault before operating the lever.

Order Codes

Part. n°	Pressure	Part. n°	Pressure
09.710.2	50 Bar	09.710.5	150 Bar
09.710.3	75 Bar	09.710.6	200 Bar
09.710.4	100 Bar	09.710.7	250 Bar



To connect a pressure sensor, an adapter 03.222.2 or 03.222.2.CV and a T-fitting (09.600.5) are required.

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Inlet Connections

DIN 2353 1/8 G/R



Straight G 1/8	Straight R 1/8	90° R 1/8	Ø Tube
TW.100504	FH.040001	FH.040101	6 mm
TW.100525	03.00.5	TW.102025	8 mm
TW.100528	----------	TW.102028	10 mm

PUSH-IN 1/8


Straight 1/8 (Push-in)	90° 1/8 (Push-in)	Ø Tube
03.256.0	03.256.6	6 mm

Check valve 1/8 R



M10x1	1/8	1/4
14.050.4	14.050.3	14.050.5

Outlet Connections

DIN 2353


Straight M10x1	Check Valve	Ø Tube
03.222.1.04	14.052.0	6 mm
03.222.1.06	----------	8 mm

PUSH-IN



Straight M10x1	90° M10x1	Check Valve	Ø Tube
03.255.3.N	03.255.8.N	----------	4 mm
03.256.3.N	03.256.7.N	03.256.3.NCV	6 mm

M10x1 outlet plug

Plug
05.026.1

M10x1 M/F adapters


Standard	Check Valve
03.222.2	03.222.2.CV

Male fitting for cutting ring


Male Fitting	Cutting Ring	Ø Tube
04.016.0	06.016.0	6 mm

Inlets

Any type of fitting can be installed on the 1/8 BSP inlet thread..

Outlets

The M10x1 outlet thread only accepts ILC fittings with sealing cone.

To use standard fittings, adapters 03.222.2 or 03.222.2.CV are required.

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