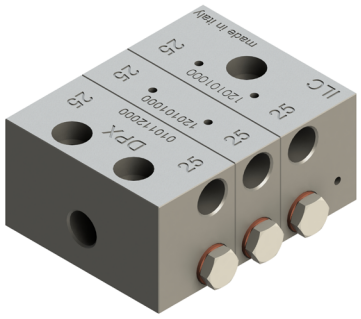
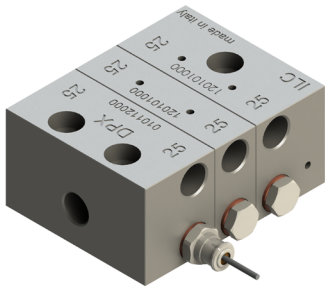
LUBRICATION SYSTEMS

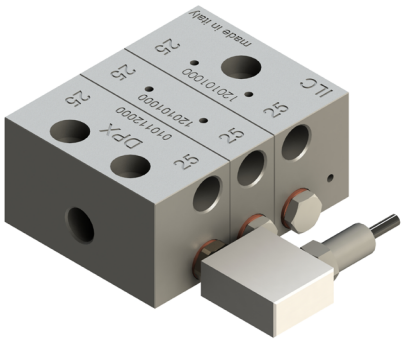
DPX

Progressive dividers

High quality and **High tolerance**
Unbeatable combination of performance and convenience







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SMEERTECHNIEK ROTTERDAM

INHOUDSOPGAVE

Features and general description

The DPX system doses lubricant with a progressive piston movement. Every piston controls the following one in a sequence obtained through a single delivery flow.

This system is highly qualified for dosing oil and grease to one or more journals or bearing. Each piston is in series with the component before or the one after it and therefore malfunctioning of one of these causes stopping of the sequence and consequently inhibiting of the system.

This inhibition occurs also during any external clogging or when unused outlet are plugged.

In order to check the entire distribution process, it is enough to apply a single visual or electrical control.

The pump flowrate is fractionable when the doser blocks are arranged in cascade. A master block can supply one or more progressive doser. Those doser can, in turn, supply another block of dosers.

It is recommended to have no more then two cascades after the master for compressibility and aerations reasons. Any further addition can cause irregular flow, especially using grease or low flow rates.

DPX benefits

Positive discharge of measured quantity of lubricant guaranteed

Suitable for system functioning control

Long operational life assured by a careful selection of high grade material and strict quality control.

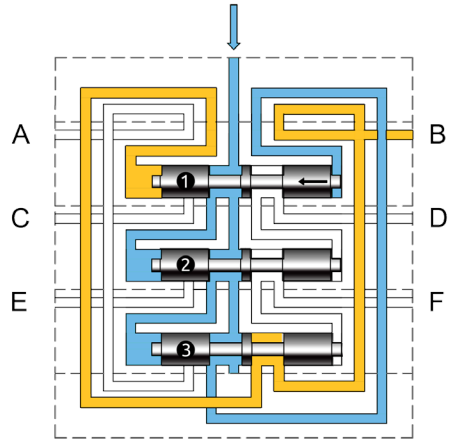
Operation monitor with indicators and/or contact plugs

system design flexibility due to large range and combination of sizes

Data sheet

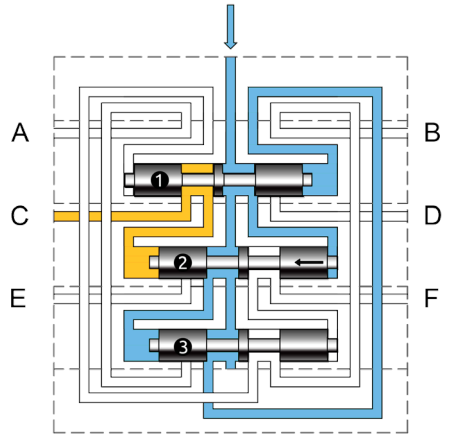
Discharge / Stroke for each outlet	25 mm ³ - 45 mm ³ - 75 mm ³ - 105 mm ³
Number of Elements	3 - 12
Operating pressure	15 - 300 Bar
Operating temperature	-20°C up to + 100° C
Body distributor	gegalvaniseerd staal Zi-Ni (vrij van Cr-V)
Number of cycles/minute	Max 300/min
Inlet	1/8" BSP
Outlets	M10 x 1
Mounting screws	M5 x 30
Lubricants	mineral oil 46 cSt - Grease Max NLGI-2
Control elements	Visueel en elektrisch voor indicatiestift en overdruk
Main lines	Leiding Ø 8-6
Secondary lines	Leiding Ø 6-4

Functioning



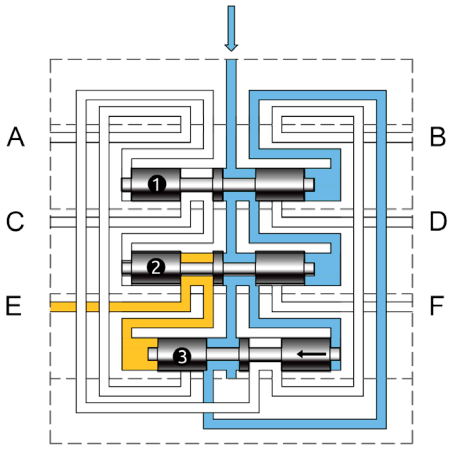
A

Lubricant flow pressure (blue) moves piston **1** to the left allowing lubricant discharge (yellow) from **B**.



B

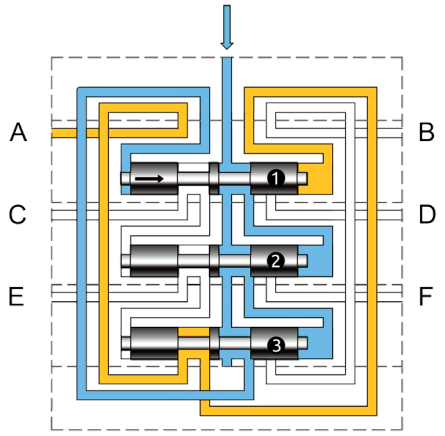
When piston **1** reaches its limit, lubricant flow pressure (blue) operates on piston **2**. Lubricant volume (yellow) discharge from **C**.



C

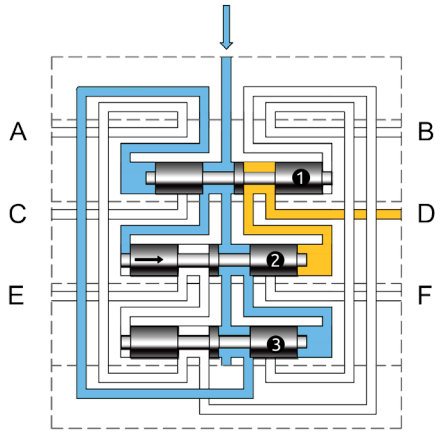
When piston **2** reaches its limit, lubricant flow pressure (blue) operates on piston **3**. Lubricant volume (yellow) discharge from **E**.

Functioning



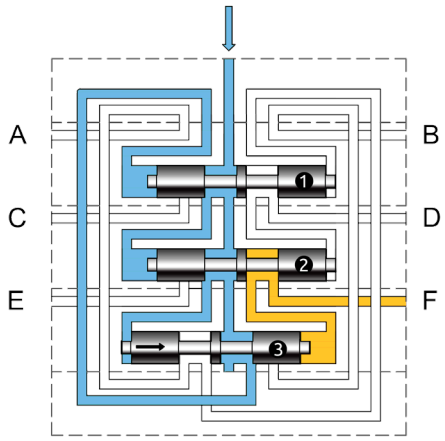
D

When piston **3** reaches its limit, lubricant flow pressure (blue) operates on piston **1**. Lubricant volume (yellow) discharge from **A**.



E

When piston **1** reaches its limit, lubricant flow pressure (blue) operates on piston **2**. Lubricant volume (yellow) discharge from **D**.



F

When piston **2** reaches its limit, lubricant flow pressure (blue) operates on piston **3**. Lubricant volume (yellow) discharge from **F**. The system is ready for a new cycle.

Outlets

Each divider piston is arranged in order to feed 1 or 2 outlets.

When the separation dowel is inserted (see Fig.1), the discharge is carried out in both sides.

When the dowel is not inserted (see Fig. 2), the double discharge is carried out in one of the two available outlets.

If it is necessary to use a single outlet, extract the ball (A92.089005), besides the separation dowel (UNI5925-M4X6) and insert a plug (A73.087010 + A92.127006) in the outlet no more used.

The dividers are supplied with the separation dowel inserted and the two outlets open as standard.

Outlets union/separation

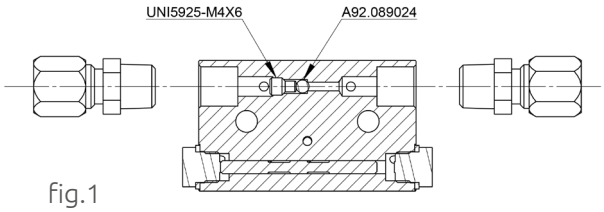


fig.1

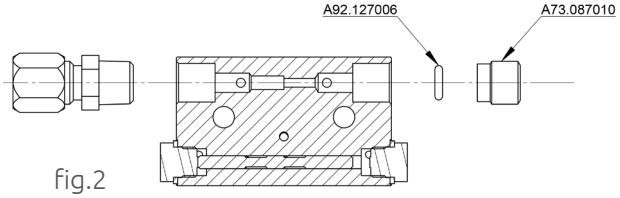
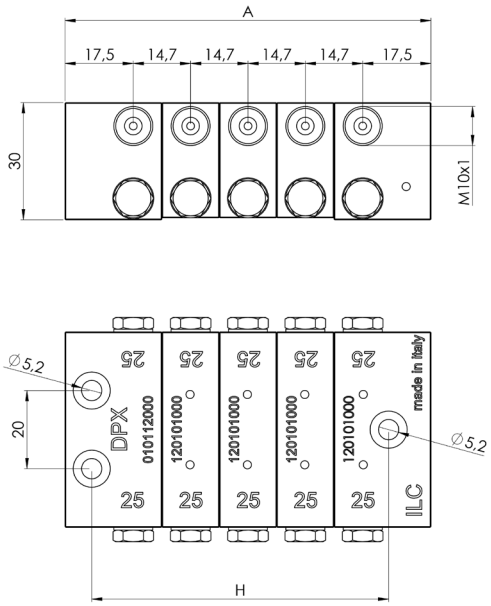


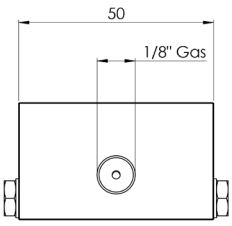
fig.2

Important!

It is not possible to shut both outlets of a piston. All the operations explained have to be made in a clean environment.

Dimensions

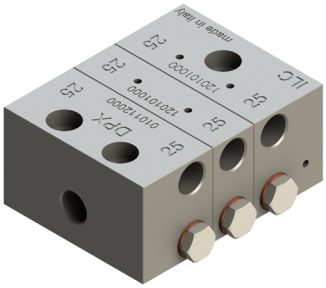


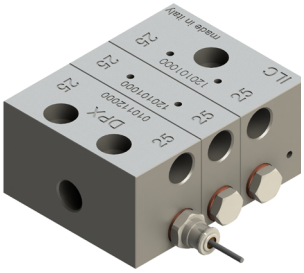


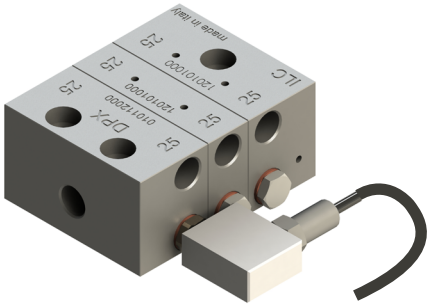
Outlets	A [mm]	H [mm]
6	64,4	46,7
8	79,1	61,4
10	93,8	76,1
12	108,5	90,8
14	123,2	105,5
16	137,9	120,2
18	152,6	134,9
20	167,3	149,6
22	182,0	164,3
24	196,7	179

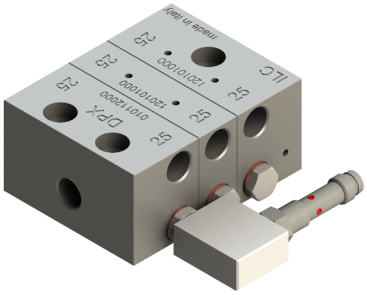
Blocks ordering codes

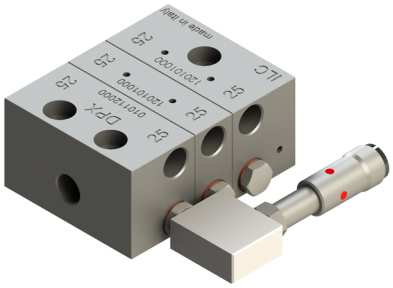
Pistons	Standard	With visual pin	With inductive sensor (cabled)	With inductive sensor M8	With inductive sensor M12	With Micro switch
3	2.1N.03	2.2V.03	2.3I.03	2.3I.03.M8	2.3I.03.M12	2.4M.03
4	2.1N.04	2.2V.04	2.3I.04	2.3I.04.M8	2.3I.04.M12	2.4M.04
5	2.1N.05	2.2V.05	2.3I.05	2.3I.05.M8	2.3I.05.M12	2.4M.05
6	2.1N.06	2.2V.06	2.3I.06	2.3I.06.M8	2.3I.06.M12	2.4M.06
7	2.1N.07	2.2V.07	2.3I.07	2.3I.07.M8	2.3I.07.M12	2.4M.07
8	2.1N.08	2.2V.08	2.3I.08	2.3I.08.M8	2.3I.08.M12	2.4M.08
9	2.1N.09	2.2V.09	2.3I.09	2.3I.09.M8	2.3I.09.M12	2.4M.09
10	2.1N.10	2.2V.10	2.3I.10	2.3I.10.M8	2.3I.10.M12	2.4M.10
11	2.1N.11	2.2V.11	2.3I.11	2.3I.11.M8	2.3I.11.M12	2.4M.11
12	2.1N.12	2.2V.12	2.3I.12	2.3I.12.M8	2.3I.12.M12	2.4M.12

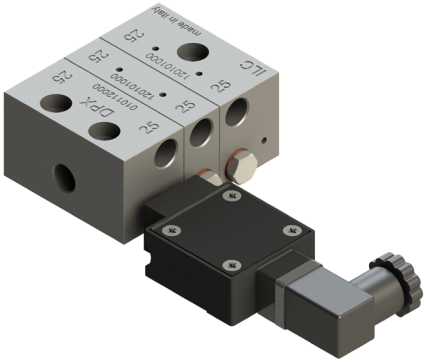












Standard



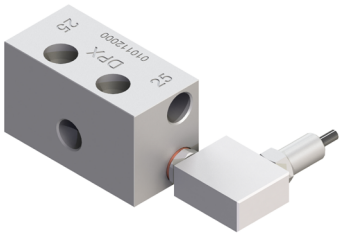
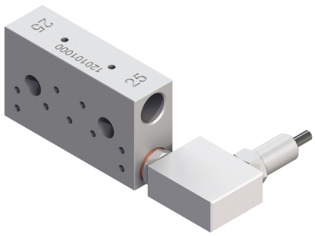
Discharge	Inlet valve section	Valve section	End valve section
25 mm³	2.A.025.D.1N	2.B.025.D.1N	2.C.025.D.1N
45 mm³	2.A.045.D.1N	2.B.045.D.1N	2.C.045.D.1N
75 mm³	2.A.075.D.1N	2.B.075.D.1N	2.C.075.D.1N
105 mm³	2.A.105.D.1N	2.B.105.D.1N	2.C.105.D.1N

With visual pin



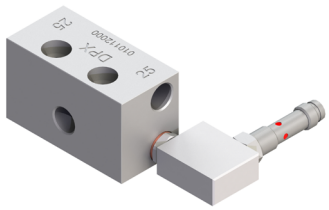
Discharge	Inlet valve section	Valve section	End valve section
45 mm³	2.A.045.D.2V	2.B.045.D.2V	2.C.045.D.2V
75 mm³	2.A.075.D.2V	2.B.075.D.2V	2.C.075.D.2V
105 mm³	2.A.105.D.2V	2.B.105.D.2V	2.C.105.D.2V

With inductive sensor (cabled)

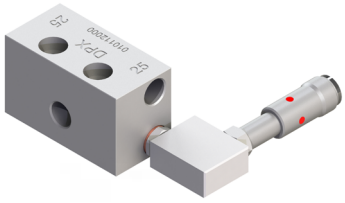

Discharge	Inlet valve section	Valve section	End valve section
45 mm³	2.A.045.D.3I	2.B.045.D.3I	2.C.045.D.3I
75 mm³	2.A.075.D.3I	2.B.075.D.3I	2.C.075.D.3I
105 mm³	2.A.105.D.3I	2.B.105.D.3I	2.C.105.D.3I

With induvtive sensor M8



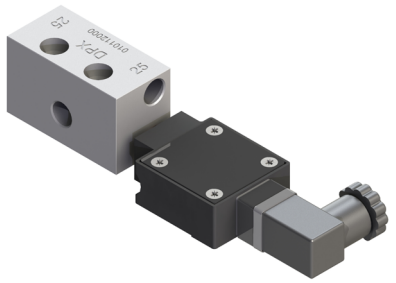
Discharge	Inlet valve section	Valve section	End valve section
45 mm³	2.A.045.D.3I.M8	2.B.045.D.3I.M8	2.C.045.D.3I.M8
75 mm³	2.A.075.D.3I.M8	2.B.075.D.3I.M8	2.C.075.D.3I.M8
105 mm³	2.A.105.D.3I.M8	2.B.105.D.3I.M8	2.C.105.D.3I.M8

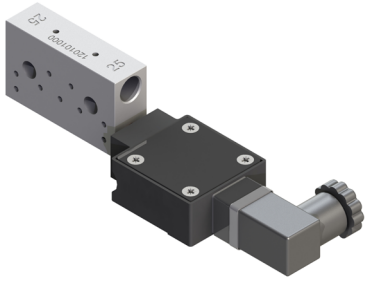
With inductive sensor M12

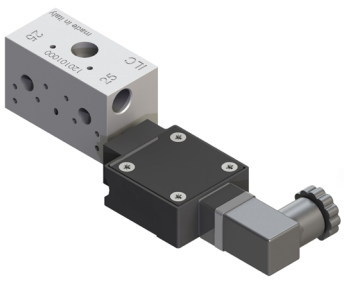


Discharge	Inlet valve section	Valve section	End valve section
45 mm³	2.A.045.D.3I.M12	2.B.045.D.3I.M12	2.C.045.D.3I.M12
75 mm³	2.A.075.D.3I.M12	2.B.075.D.3I.M12	2.C.075.D.3I.M12
105 mm³	2.A.105.D.3I.M12	2.B.105.D.3I.M12	2.C.105.D.3I.M12

With Micro switch



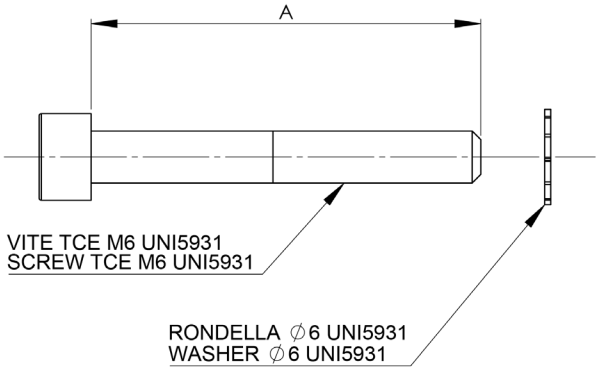




Discharge	Inlet valve section	Valve section	End valve section
45 mm³	2.A.045.D.4M	2.B.045.D.4M	2.C.045.D.4M
75 mm³	2.A.075.D.4M	2.B.075.D.4M	2.C.075.D.4M
105 mm³	2.A.105.D.4M	2.B.105.D.4M	2.C.105.D.4M

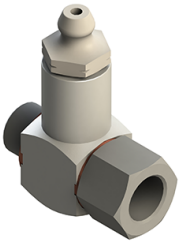
Tie-rods ordering codes

Elements	A[mm]	Code
3	45	2.TR.03
4	60	2.TR.04
5	75	2.TR.05
6	90	2.TR.06
7	105	2.TR.07
8	120	2.TR.08
9	135	2.TR.09
10	150	2.TR.10
11	165	2.TR.11
12	180	2.TR.12



Banjo with grease nipple

03.355.5/03.355.6

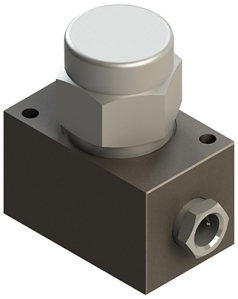


Banjo junctions are placed on a progressive distributor inlet. Their job is to let us use a manual or hydraulic pump when the main pump does not work.

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

Inlet filter

07.261.1/07.260.3



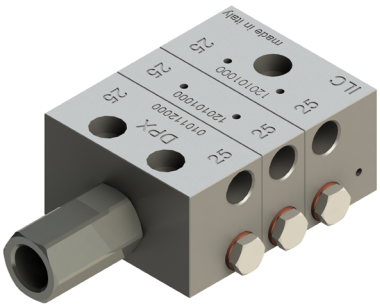
This strainer prevents the lubricant lines from being obstructed by impurities.

Supply joints included.
Plug **1/4" BSP (F)**

Code	Filtration rate
07.261.1	300 µ
07.260.3	125 µ

Inset filter 70 µ

07.270.5



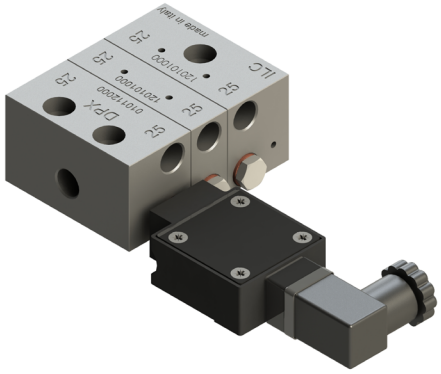
This strainer prevents the lubricant lines from being obstructed by impurities.

Filtration rate **70 µ**
Plug **1/4" BSP (F)**

Ordering code 07.270.5

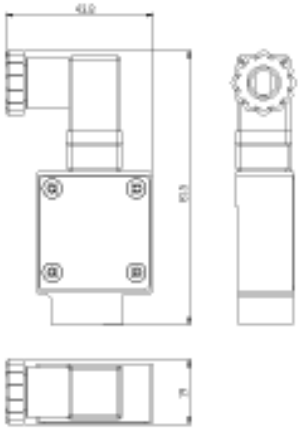
Micro switch

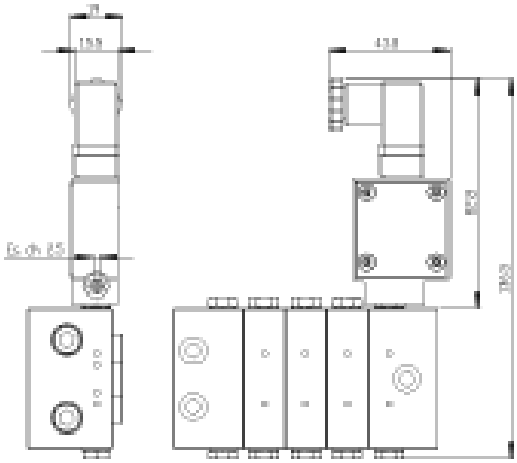
49.050.2



Features

Micro switch	5 A - 250 V AC 0.4 A - 125 DC
Connections	3P
Enclosure	IP-65
temperature	-25°C to +85° C

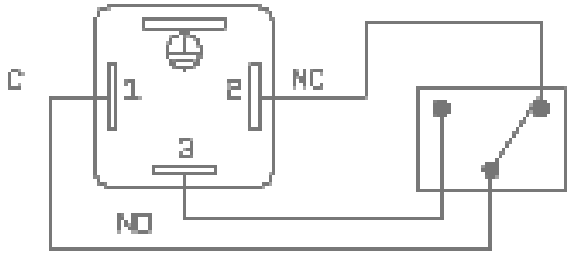




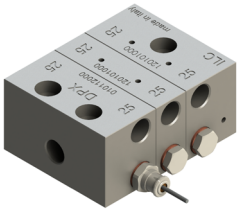
Ordering codes

Pistons	Code	Pistons	Code
3	2.4M.03	8	2.4M.08
4	2.4M.04	9	2.4M.09
5	2.4M.05	10	2.4M.10
6	2.4M.06	11	2.4M.11
7	2.4M.07	12	2.4M.12

Electrical connection

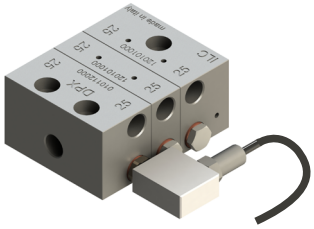


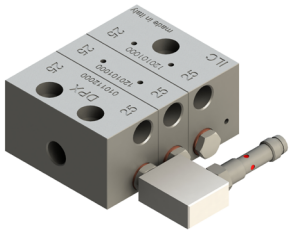
Visual pin

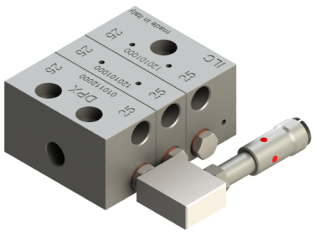


The visual pin shows the piston movement, monitoring the proper operation of the entire system.

Inductive control







In this control a proximity switch is housed in a composite block.

The piston opens and closes the contact as it moves into its operational seat.

They are usually used in cycle control systems where they can count up to 300 movement per minute.

Electrical data

Voltage	6-30 V DC
Outlet current	Max 200 mA
Current	< 22 mA
Operating temperature	from - 25 °C to +70 °C
Protection	IP 67
Sensor housing	Stainless steel
Sensor block	Pet-G
Connection	M8x1 - M12x1

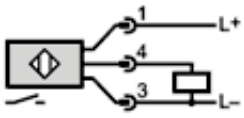
Connection cable codes

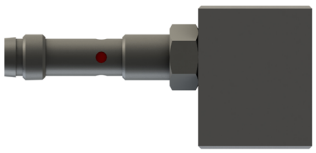
Length	M8x1 Stright	M12x1 90°	M12x1 Stright
5 m	A91.111227	A91.111316	A91.111349
10 m	A91.111348	A91.111317	A91.111296
15 m	A91.111393	A91.111318	A91.111350

Sensor kit codes (PNP NA)

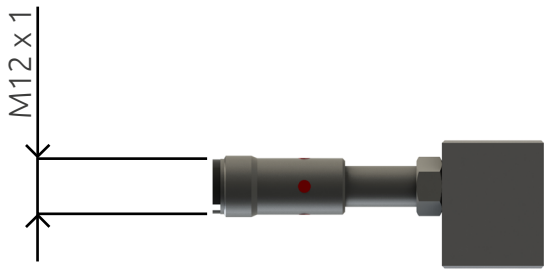
With cable	49.052.5
M8 x 1	49.052.7
M12 x 1	49.052.9

Electrical connection





Group II Category 1D-1G/2G



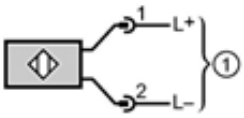
Electrical data

Electrical Model	Certified intrinsically safe circuits with maximum values U= 15 V / I = 50 mA/ P = 120 mW
Nominal voltage	8,2 DC; (1kΩ)
Voltage	V 7,5...30 DC; to be used outside potentially explosive areas
Current	< 1 blocker; (> 2,1 mA geleider)
Contact	NC
Current capacity	< 30mA; to be used outside potentially explosive areas
Temperature	-20°C to +70°C
Protection	IP 67

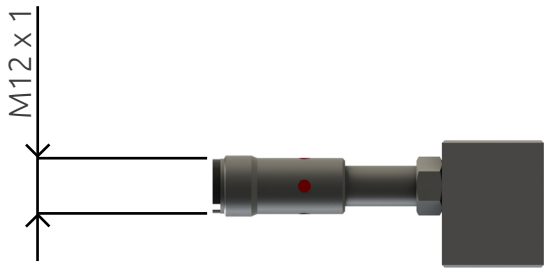
Ordering codes

Inductive control	49.052.9.ATX.1GD

Electrical connection



Group II Category 3G-3D



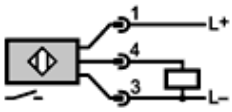
Electrical data

Electrical Model	DC PNP
Nominal voltage	10-36 V DC
Outlet current	MAX 200 mA
Current	< 20 Ma
Temperature	-40°C to +70 °C
Protection	IP 67
Sensor housing	Stainless steel
Contact	NO

Ordering codes

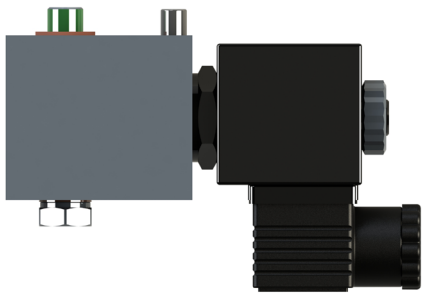
Inductive control	49.052.9.ATX

Electrical connection



Shut-Off EV-2

A70.093606/.115/.230



SHUT OFF valves EV-2 are made of a special **"NC"** 2-ways solenoid valve and of a modular base that can be directly assembled on the DPX inlet.

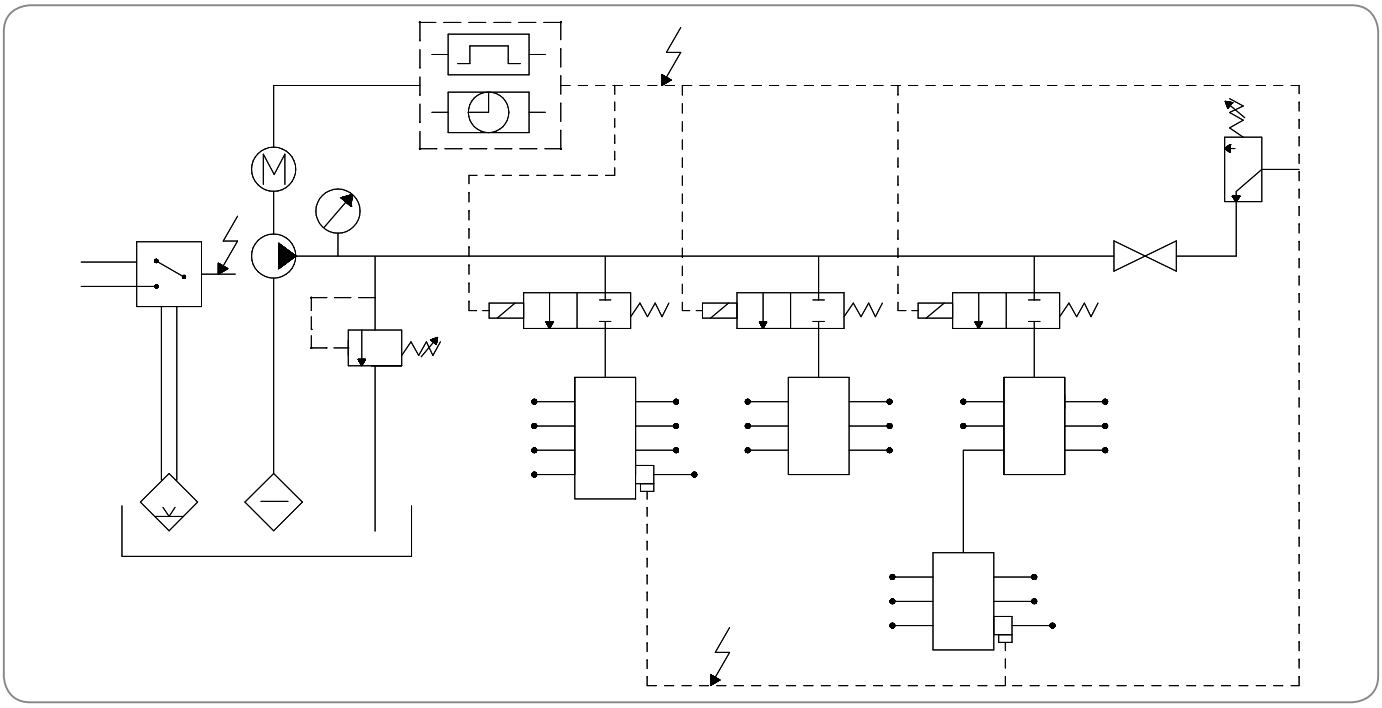
EV-2 valve is the essential element in order to transform a standard progressive system into a **sectioned system.**

Ordering codes

Code	Voltage
A70.093606	24 V DC
A70.093606.115	115 V AC
A70.093606.230	230 V AC

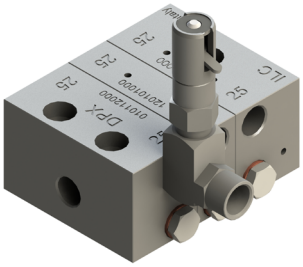
Technical data

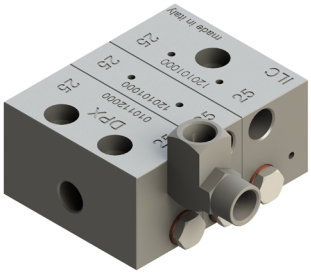
Pressure	Max 300 Bar
Lubricant	Oil viscosity min 32 cSt) Grease max NLGI-1
Temperature	-20°C to +80 °C
Voltage	24 V DC, 115 - 230 V AC 50/60 Hz.
Power	35 W (DC) 8 VA (AC)
Protection	IP54
Inlet thread	1/8" BSP

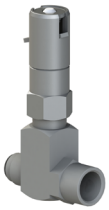


Pressure sensor with memory

09.710.2...7







These indicator are usually for overpressure control on primary and secondary lines.

In the eventuality of a pressure higher then expected, the pin indicator moves out. It remains in position until the release lever is manually actuaded.

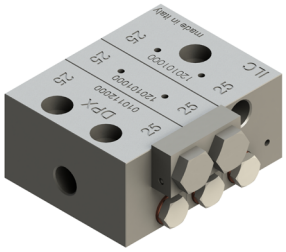
We suggest to discover the reason and the location of the fault before actuating the lever.

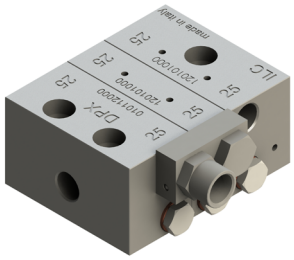
Ordering codes

Code	Pressure	Code	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

In order to connect the pressure sensor we need a T-junction (**09.600.5**).

Bridge junction





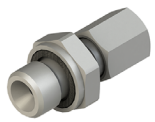
Bridge junction are used when we want to discharge two outlets from one single point.

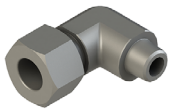
Ordering codes

Bridge without outlet	09.600.3
Bridge with outlet	09.600.4

Inlet connections

DIN 2353	Pressure	Thread
	500 bar	1/8" BSP

Stright	Code	Ø Tube
	ZZZ.106-004	6 mm
	TW.100525	8 mm
	TW.100528	10 mm

90°	Code	Ø Tube
	ZZZ.106-104	6 mm
	TW.102025	8 mm
	TW.102028	10 mm

PUSH-IN	Pressure	Thread
	250 bar	1/8" BSP

Straight	Code	Ø Tube
	03.256.0	6 mm

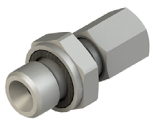
90° angled	Code	Ø Tube
	03.256.6	6 mm

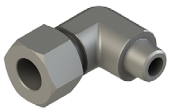
Restraint valve	Thread M	Thread F
	1/8" BSP	M10 x 1

DPX inlet	Code
	14.050.4

Outlet connections

DIN 2353	Pressure	Thread
	500 bar	M10 x 1

Stright	Code	Ø Tube
	ZZZ.104-003	4 mm
	ZZZ.106-003	6 mm

90°	Code	Ø Tube
	ZZZ.104.103	4 mm
	ZZZ.106-103	6 mm

90° outlet junction requires tie-rods to be completely removed and the elements to be completely separated.

PUSH-IN	Pressure	Thread
	250 bar	M10 x 1

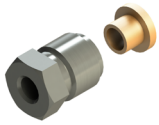
Straight	Code	Ø Tube
	03.255.3	4 mm
	03.256.3	6 mm

90° angled	Code	Ø Tube
	03.255.8	4 mm
	03.256.7	6 mm

Restraint valve	Thread M	Thread F
	M10 x 1	M10 x 1

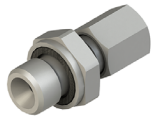
DPX outlet	Code
	14.050.8

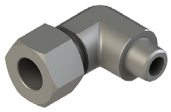
Ring	Pressure	Thread
	250 bar	M10 x 1

Straight	Code	Ø Tube
	04.051.0 06.051.0	4 mm
	04.052.0 06.052.0	6 mm

Inlet connections

DIN 2353	Pressure	Thread
	500 bar	1/8" BSP

Straight	Code	Ø Tube
	ZZZ.106-004	6 mm
	TW.100525	8 mm
	TW.100528	10 mm

90° angled	Code	Ø Tube
	ZZZ.106-104	6 mm
	TW.102025	8 mm
	TW.102028	10 mm

PUSH-IN	Pressure	Thread
	250 bar	1/8" BSP

Straight	Code	Ø Tube
	03.256.0	6 mm

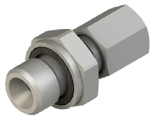
90° angled	Code	Ø Tube
	03.256.6	6 mm

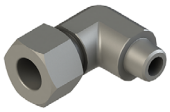
Restraint valve	Thread M	Thread F
	1/8" BSP	M10 x 1

DPX inlet	Code
	14.050.4

Outlet connections

DIN 2353	Pressure	Thread
	500 bar	M10 x 1

Straight	Code	Ø Tube
	ZZZ.104-003	4 mm
	ZZZ.106-003	6 mm

90° angled	Code	Ø Tube
	ZZZ.104.103	4 mm
	ZZZ.106-103	6 mm

PUSH-IN	Pressure	Thread
	250 bar	M10 x 1

Straight	Code	Ø Tube
	03.255.3	4 mm
	03.256.3	6 mm

90° angled	Code	Ø Tube
	03.255.8	4 mm
	03.256.7	6 mm

Restraint valve	Thread M	Thread F
	M10 x 1	M10 x 1

DPX outlet	Code
	14.050.8

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