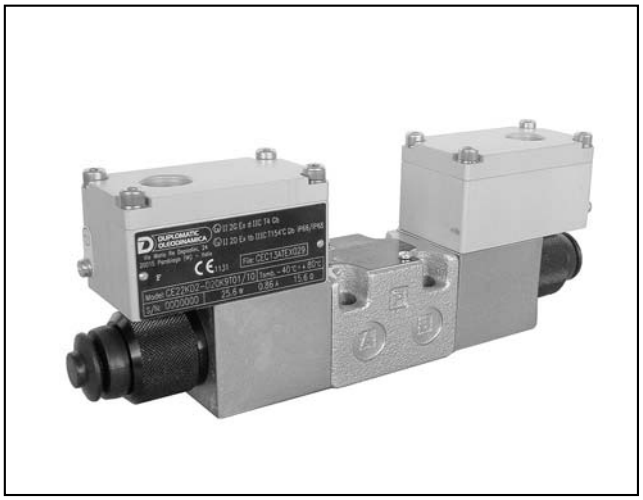


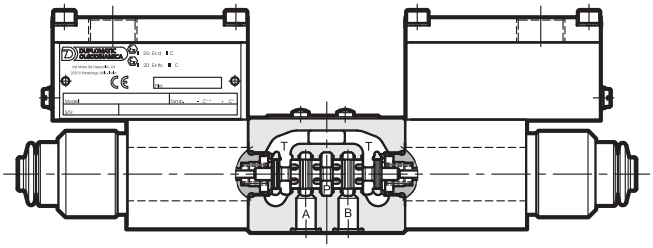
DS(P)E*KD2

EXPLOSION-PROOF VERSION DIRECTIONAL VALVES WITH PROPORTIONAL CONTROL in compliance with ATEX 94/9/EC

DSE3KD2 ISO 4401-03 (CETOP 03)

DSPE5KD2 CETOP P05
DSPE5RKD2 ISO 4401-05 (CETOP R05)
DSPE7KD2 ISO 4401-07 (CETOP 07)
DSPE8KD2 ISO 4401-08 (CETOP 08)
DSPE10KD2 ISO 4401-10 (CETOP 10)

OPERATING PRINCIPLE



TYPE EXAMINATION CERTIFICATE No: 1131-CEC 13 ATEX 030

— The explosion-proof directional valves with proportional control are in compliance with ATEX 94/9/EC standards and are suitable for the use in potentially explosive atmospheres, that fall within the ATEX II 2GD either for gas or for dust classification. See par. 4 for ATEX classification, operating temperatures and electrical characteristics.

— These valves are direct operated type, ISO 4401-03 (CETOP 03) size and pilot operated type, CETOP P05, ISO 4401-05 (CETOP R05), ISO 4401-07 (CETOP 07), ISO 4401-08 (CETOP 08) and ISO 4401-10 (CETOP 10).

— With the valve and the distributor the statement of conformity to the up mentioned standards is always supplied.

— The DSE3KD2 valves are supplied with a finishing surface treatment (zinc-nickel) suitable to ensure a salt spray resistance up to 370 h (test operated according to UNI EN ISO 9227 standards and test evaluation operated according to UNI EN ISO 10289 standards); for DSPE*KD2 valves, this treatment is available upon request.

PERFORMANCES (obtained with viscosity of 36 cSt at 50°C with the relative electronic control units)		**DSE3KD2**	**DSPE5KD2 DSPE5RKD2**	**DSPE7KD2**	**DSPE8KD2**	**DSPE10KD2**
Max operating pressure: P - A - B ports T ports	bar	350 210	350 see par. 8			
Controlled flow rate with Δp 10 bar P-T	l/min	see par. 2	see par. 7			
Step response		see par. 10				
Hysteresis	% of Q_{max}	<6%(PWM 200Hz)	< 4% (PWM 100Hz)			
Repeatability	% of Q_{max}	< ±1,5%	< ±2%			
Electrical characteristics		see par. 4.4				
Ambient temperature range	°C	-20 / +80 (NBR and FPM) -40 / +80 (NL)				
Fluid temperature range	°C	-20 / +80 (NBR and FPM) -40 / +80 (NL)				
Fluid viscosity range	cSt	10 ÷ 400				
Fluid contamination degree		According to ISO 4406:1999 class 18/16/13				
Recommended viscosity	cSt	25				
Mass single solenoid valve double solenoid valve	kg	1,9 2,8	7,5 8,3	9,9 10,7	16,1 16,9	52,8 53,5

1 - IDENTIFICATION OF DIRECT OPERATED SOLENOID VALVES DSE3KD2

1.1 - Identification code

D	S	E	3	KD2	-				/	10		-		K9		/	

Direct operated solenoid valve

Electric proportional control

Size: ISO 4401-03 (CETOP 03)

Explosion-proof version, according to ATEX - II 2GD for gas or for dust (protection type of the coil: “d”)

Spool type:
C = closed centers
A = open centers

Spool nominal flow rate (see table par. 1.2)

Solenoid position
(omit for double solenoid version):
SA = 1 solenoid for cross configuration
SB = 1 solenoid for parallel configuration

Series No.: (the overall and mounting dimensions remain unchanged from 10 to 19)

Seals:

For temperature range -20 / +80 °C
N = NBR seals for mineral oil (**standard**)
V = FPM seals for special fluids

For temperature range -40 / +80 °C
NL = seal for low temperatures (for mineral oil)

NOTE: zinc-nickel standard finishing surface treatment.

Manual override:
CM = manual override, boot protected (**standard for both N and V seals** - not available for NL seals)
CB = blind ring nut (**standard for NL seals** - available upon request for both N and V seals)
CH = lever manual override
For dimension details of CB and CH versions, see paragraph 18

Connection type for cable gland
Available for upper connection:
T01 = M20x1.5 - ISO 261
T02 = Gk 1/2 - UNI EN 10226-2
T03 = 1/2” NPT - ANSI B1.20.1 (ex ANSI B2.1)
Available for side connection:
S04 = M16x1.5 - ISO 261 (only for power supply D24)
S01 = M20x1.5 - ISO 261 (available upon request only)

Coil electrical connection:
electrical connection by terminal block

D12 = Nominal solenoid voltage 12V DC
D24 = Nominal solenoid voltage 24V DC

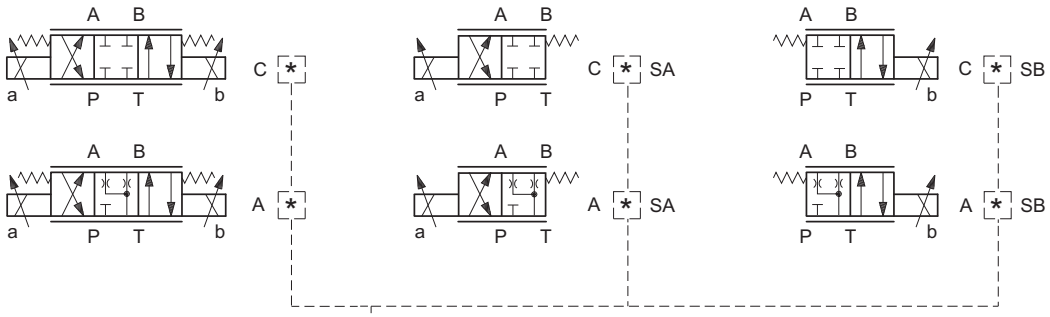
1.2 - Available spools

Valve configuration depends on the combination of the following elements:
number of proportional solenoids, spool type, nominal flow rate.

2 solenoids configuration:
3 positions with spring centering

“**SA**” configuration: 1 solenoid on side A.
2 positions (central + external) with spring centering

“**SB**” configuration: 1 solenoid on side B.
2 positions (central + external) with spring centering



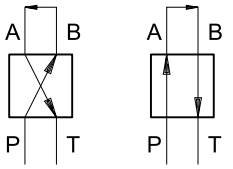
*	Controlled flow with Δp10 bar P-T
01	1,3 l/min (**NOTE**)
04	4 l/min
08	8 l/min
16	16 l/min
16/08	16 (P-A) / 08 (B-T) l/min
26	26 l/min
26/13	26 (P-A) / 13 (B-T) l/min

NOTE: the 01 spool is available in version **C** (closed center) only.

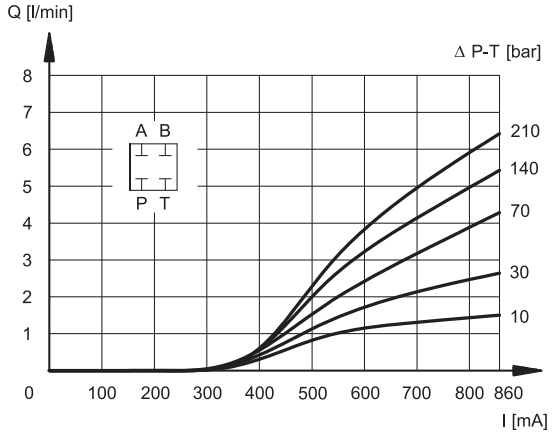
2 - CHARACTERISTIC CURVES OF DIRECT OPERATED SOLENOID VALVES

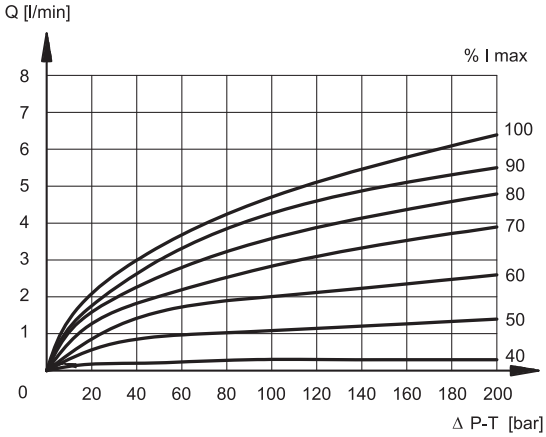
(values measured with viscosity of 36 cSt at 50°C with valves connected to the relative electronic control units)

Typical constant flow rate control curves at Δp according to current supply to solenoid (D24 version, maximum current 860 mA), measured for the various spool types available.
The reference Δp values are measured between ports P and T on the valve.

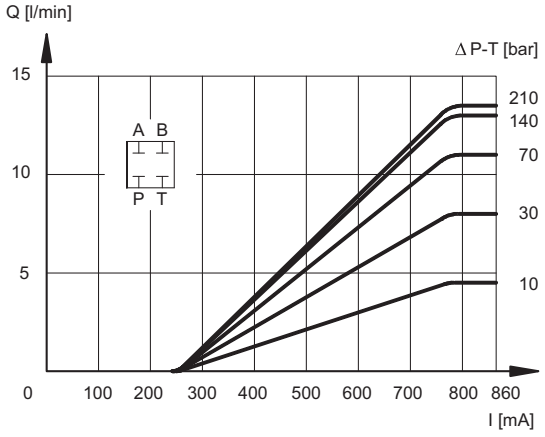


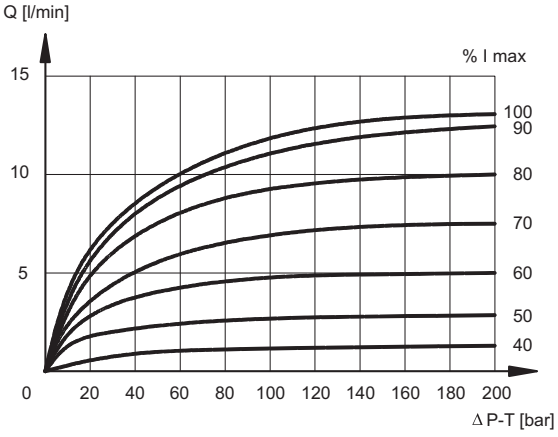
SPOOL TYPE C01



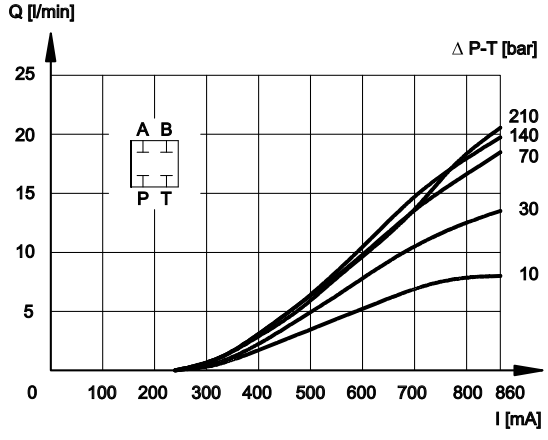


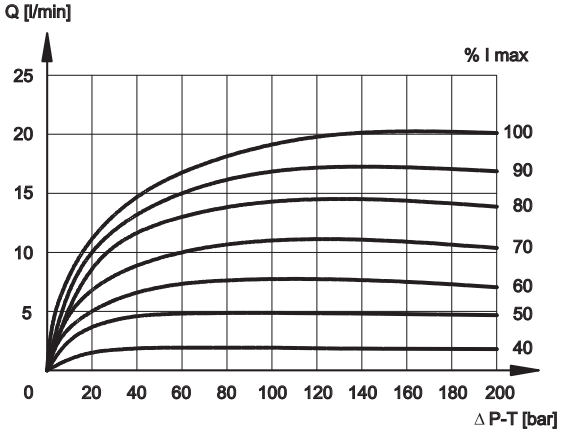
SPOOL TYPE C04



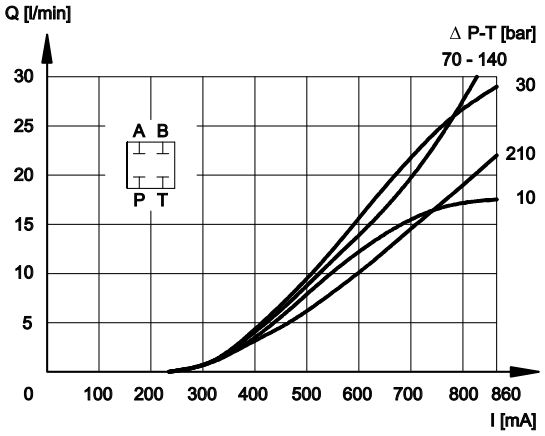


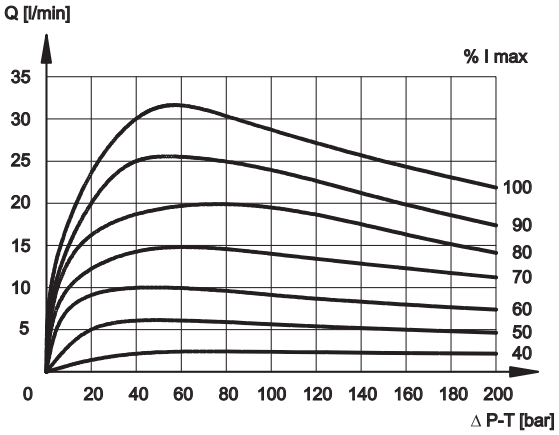
SPOOL TYPE C08



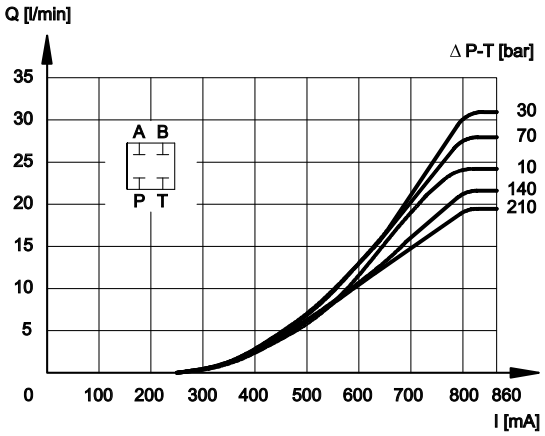


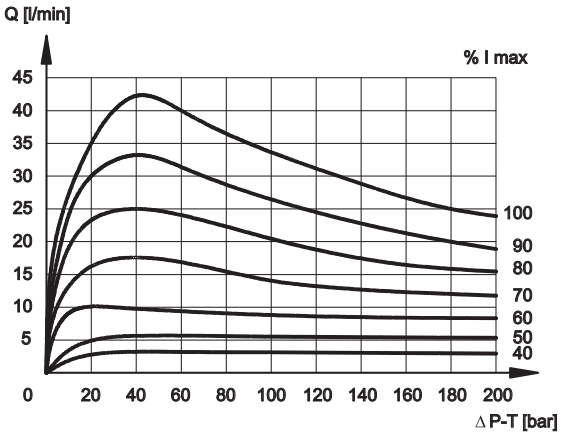
SPOOL TYPE C16



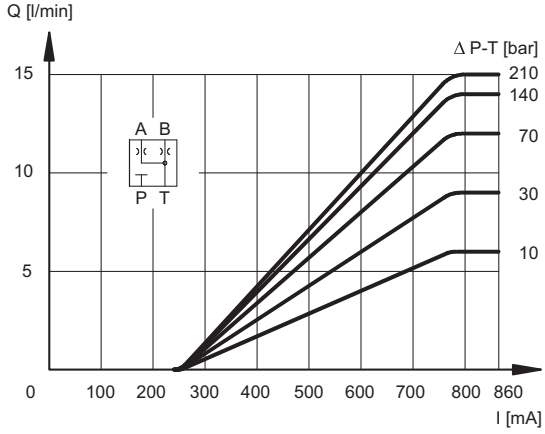


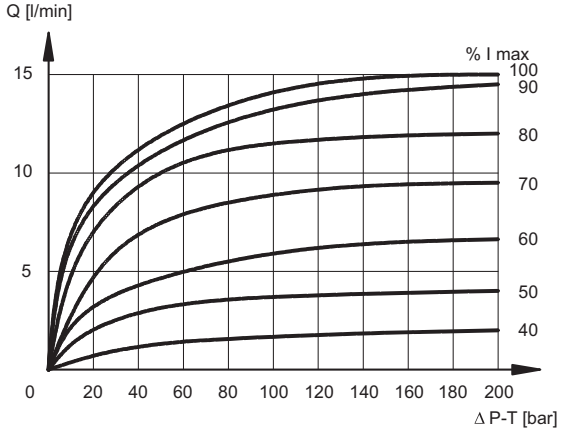
SPOOL TYPE C26



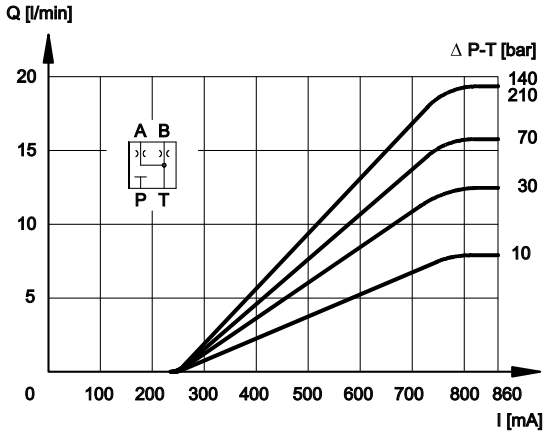


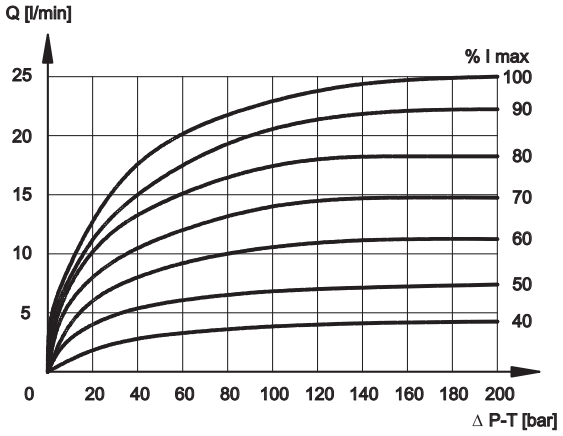
SPOOL TYPE A04



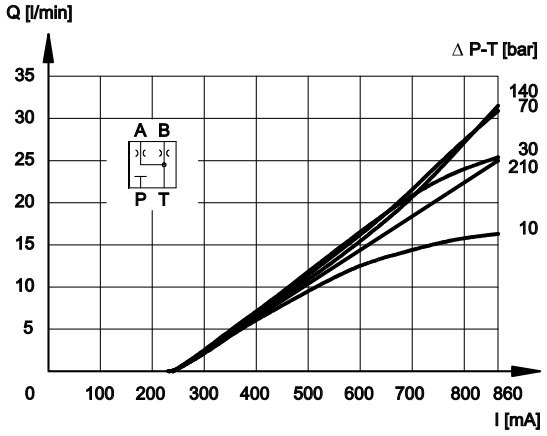


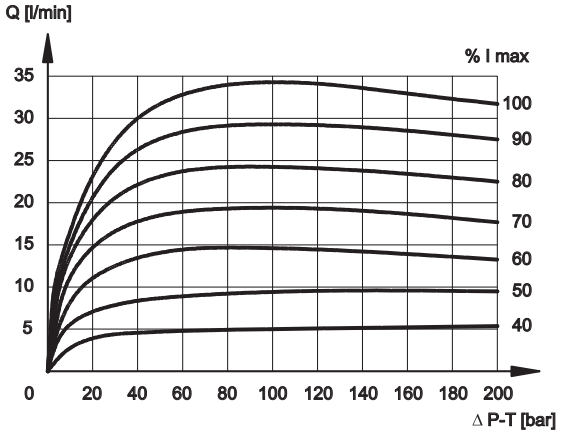
SPOOL TYPE A08



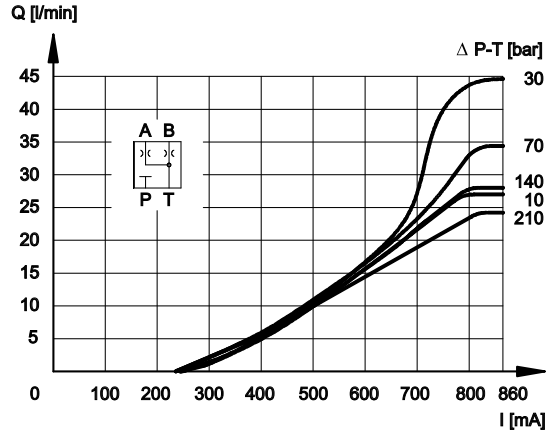


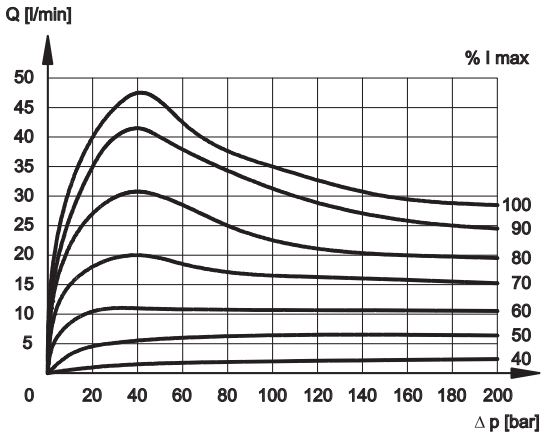
SPOOL TYPE A16





SPOOL TYPE A26

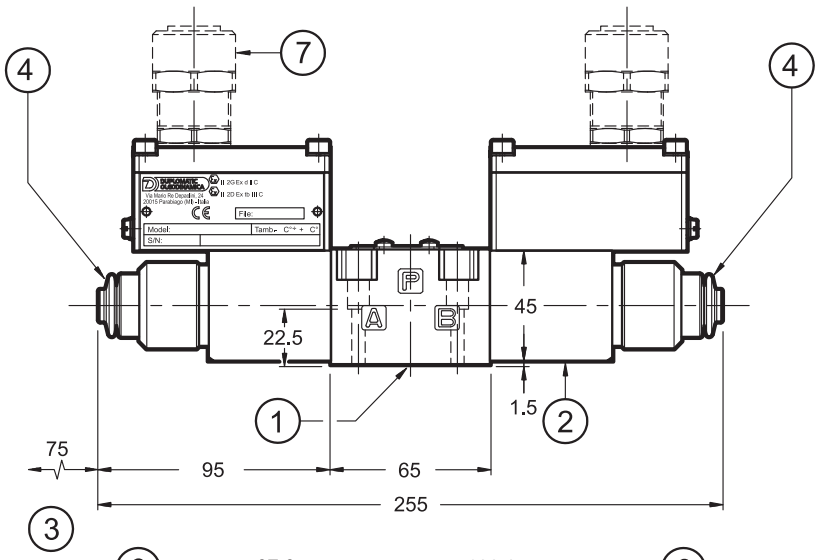


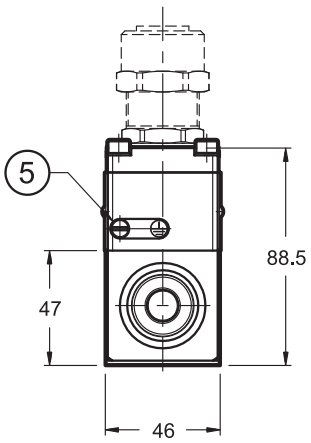


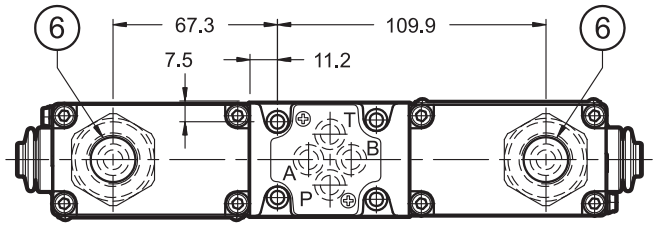
3 - DSE3KD2 OVERALL AND MOUNTING DIMENSIONS

DSE3KD2-A*/10*-*K9T*/CM
DSE3KD2-C*/10*-*K9T*/CM

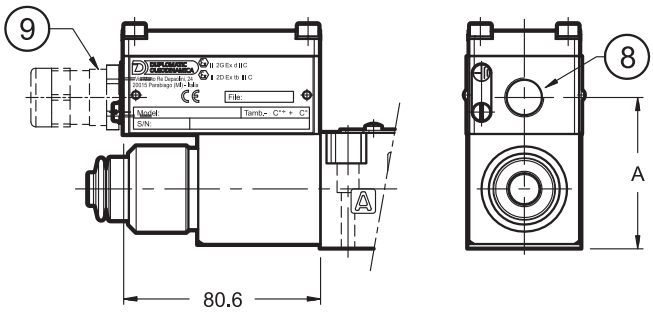
dimensions in mm



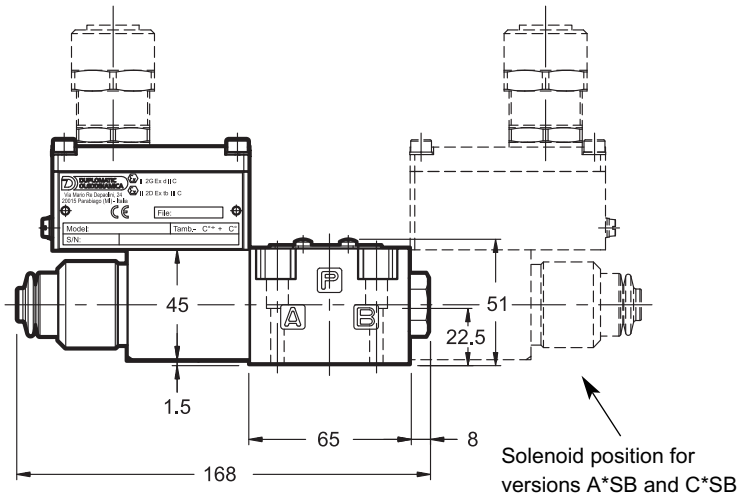




DSE3KD2-*/10*-*K9S*/CM



DSE3KD2-A*SA/10*-*K9T*/CM
DSE3KD2-C*SA/10*-*K9T*/CM



Solenoid position for versions A*SB and C*SB

Side port type	Dimension A
S01	60.5
S04	61.5

1	Mounting surface with sealing rings
2	Explosion-proof coil
3	Coil removal space
4	Manual override, boot protected (**standard for both N and V seals**) - for blind ring nut dimensions (standard for NL seals) see par. 18
5	Terminal for supplementary earth connection
6	Upper port for cable gland
7	Cable gland (upper port shown). To be ordered separately, see paragraph 19
8	Side port for cable gland
9	Cable gland (side port shown). To be ordered separately, see paragraph 19

Fastening of single valve: 4 SHC screws ISO 4762 M5x30
Tightening torque: 5 Nm (A8.8 screws)
Threads of mounting holes: M5x10
Sealing rings: 4 OR type 2037 (9.25x1.78) - 90 Shore

4 - ATEX CLASSIFICATION, OPERATING TEMPERATURES AND ELECTRICAL CHARACTERISTICS

For valves suitable for application and installation in potentially explosive atmospheres, according to ATEX directive prescriptions, Duplomatic certificated the combination valve-coil; **the supply always includes the declaration of conformity to the directive and the operating and maintenance manual, that contains all the informations needed for a correct use of the valve in potentially explosive environments.**

Coils assembled on these valves have been separately certified according to ATEX directive and so they are suitable for use in potentially explosive atmospheres.

4.1 - Valve ATEX classification

The valves can be used for applications and installations in potentially explosive atmospheres that fall within either the ATEX II 2G or the ATEX II 2D classification, with the follow marking:

MARKING FOR GASES, VAPOURS, MISTS

Ⓔx II 2G IIC T4 Gb (-20°C Ta +80°C) for both N and V seals

Ⓔx II 2G IIC T4 Gb (-40°C Ta +80°C) for NL seals

EX: Specific marking of explosion protection as ATEX 94/9/EC directive and related technical specification requests.

II: Group II for surface plants

2: Category 2 high protection, eligible for zone 1 (therefore also eligible for category 3 zone 2)

G: Type of atmosphere with gases, vapours, mists

IIC: Gas group (therefore also eligible for group IIA and IIB)

T4: Temperature class (max surface temperature)

Gb: EPL protection level for electrical devices

-20°C Ta +80°C: Ambient temperature range for valves with both N and V seals

-40°C Ta +80°C: Ambient temperature range for valves with NL seals

MARKING FOR DUSTS

Ⓔx II 2D IIIC T154°C Db (-20°C Ta +80°C) for both N and V seals

Ⓔx II 2D IIIC T154°C Db (-40°C Ta +80°C) for NL seals

EX: Specific marking of explosion protection as ATEX 94/9/EC directive and related technical specification requests.

II: Group II for surface plants

2: Category 2 high protection, eligible for zone 21 (therefore also eligible for category 3 zone 22)

D: Type of atmosphere with dusts

IIIC: Dusts group (therefore also eligible for group IIIA and IIIB)

T154°C: Temperature class (max surface temperature)

Db: EPL protection level for electrical devices

-20°C Ta +80°C: Ambient temperature range for valves with both N and V seals

-40°C Ta +80°C: Ambient temperature range for valves with NL seals

4.2 - Coils ATEX classification

The coil of the explosion-proof valves is identified with its own tag, which carries the relative ATEX marking. **The mechanical construction of the coil housing is made in order to ensure its resistance to possible internal explosion and to avoid any explosion propagation to the outside environment, matching an "Ex d" type protection (explosion-proof coil).**

Moreover, the solenoid is designed to maintain its surface temperature below the limits specified to the relevant class.

The R* coils (for alternating current supply) contain a built-in rectifier bridge.

Here below you find the coils marking:

MARKING FOR GASES, VAPOURS, MISTS

Ⓔx II 2G Ex d IIC T4 Gb (-40°C Ta +80°C)

EX: Specific marking of explosion protection as ATEX 94/9/EC directive and related technical specification requests.

II: Group II for surface plants

2: Category 2 high protection, eligible for zone 1 (therefore also eligible for category 3 zone 2)

G: Type of atmosphere with gases, vapours, mists

Ex d: "d" protection type, explosion-proof case

IIC: Gas group (therefore also eligible for group IIA and IIB)

T4: Temperature class (max surface temperature)

Gb: EPL protection level for electrical devices

-40°C Ta +80°C: Ambient temperature range

MARKING FOR DUSTS

Ⓔx II 2D Ex tb IIIC T154°C Db IP66/IP68 (-40°C Ta +80°C)

EX: Specific marking of explosion protection as ATEX 94/9/EC directive and related technical specification requests.

II: Group II for surface plants

2: Category 2 high protection, eligible for zone 21 (therefore also eligible for category 3 zone 22)

D: Type of atmosphere with dusts

Ex tb : 'tb' protection type

IIIC: Dusts group (therefore also eligible for group IIIA and IIIB)

T154°C: Temperature class (max surface temperature)

Db: EPL protection level for electrical devices

IP66/IP68: Valve IP degree

-40°C Ta +80°C: Ambient temperature range

4.3 - Operating temperatures

The operating ambient temperature must be between -20 / +80 °C, for valves with both N and V seals and -40°C / +80°C, for valves with NL seals.

The fluid temperature must be between -20 / +80 °C, for valves with both N and V seals and -40°C / +80°C, for valves with NL seals.

The valves are classified in T4 temperature class (T154° C), therefore they are eligible for operation also at higher class temperature (T3, T2, T1 for gas and T200° C for dust).

4.4 - Electrical characteristics (values ± 5%)

NOMINAL VOLTAGE	V DC	**12**	**24**
RESISTANCE (AT 20°C)	Ω	3,4	15,6
NOMINAL CURRENT	A	1,88	0,86

DUTY CYCLE	100%
EXPLOSION-PROOF VERSION	According to ATEX 94/9/CE
ELECTROMAGNETIC COMPATIBILITY (EMC) (NOTE)	According to 2004/108/CE
CLASS OF PROTECTION: Atmospheric agents Coil insulation (VDE 0580)	 IP66 / IP68 class H

5 - ELECTRICAL CONNECTION

5.1 - Wiring

In order to realise the electrical connection of the coil, it is necessary to access the terminal block (1) unscrewing the 4 screws (2) that fasten the cover (3) with the box (4) that contains the terminal block.

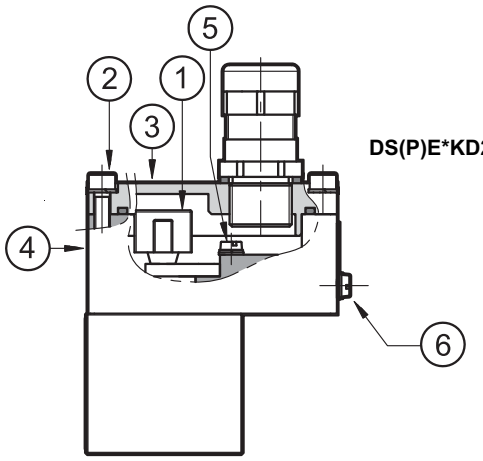
The electrical connection is polarity-independent.

By doing electrical connection it is important to connect also the grounding point (5) in the terminal block box (M4 screws), through suitable conductors with the general grounding line of the system.

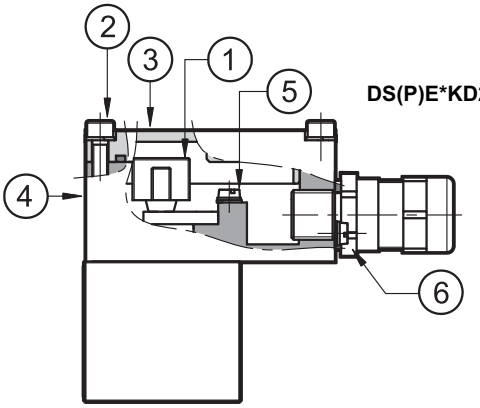
On the external body of the coil there is a grounding point (6) (M4 screw) that allow to ensure equipotentiality between the valve and the general grounding line of the system; connecting this point the regulation of the EN 13463-1 standard, that impose to verify the equipotentiality of the elements included in a potentially explosive environment (the maximum resistance between the elements must be 100 Ω), is guaranteed.

At the end of the electrical wiring, it is necessary to reassemble the cover (3) on the box (4), checking the correct positioning of the seal located in the cover seat and fastening the 4 M5 screws with a torque of 4.9÷6 Nm.

Electrical wiring must be done following the instructions of the rules in compliance with ATEX standards.



DS(P)E*KD2-*/10*-*K9T*/*



DS(P)E*KD2-*/10*-*K9S*/*

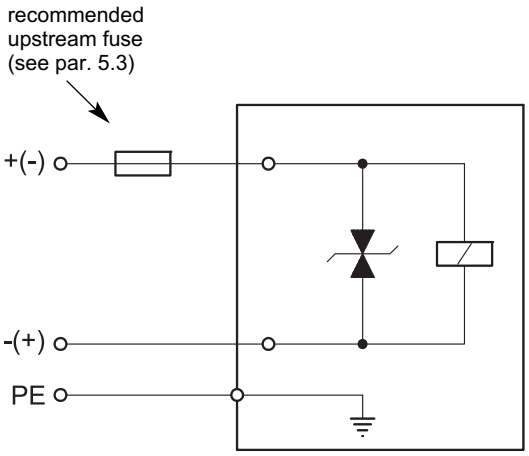
Characteristics of the cables connectable for wiring are indicated in the table below:

Function	Cable section
Operating voltage cables connection	max 2.5 mm²
Connection for internal grounding point	max 2.5 mm²
Connection for external equipotential grounding point	max 6 mm²

Cables for wiring must be non-armoured cables, with external covering sheath and must be suitable for use in environments with temperatures from - 20 °C to +110 °C (for valves either with N or V seals) or from - 40 °C to +110 °C (for valves with NL seals).

Cable glands (which must be ordered separately, see paragraph 19) allow to use cables with external diameter between 8 and 10 mm.

5.2 - Electrical diagrams



5.3 - Overcurrent fuse and switch-off voltage peak

Upstream of each valve, an appropriate fuse (max 3 x In according to IEC 60127) or a protective motor switch with short-circuit and thermal instantaneous tripping, as short-circuit protection, must be connected. The cut-off power of the fuse must correspond or exceed the short circuit current of the supply source. The fuse or the protective motor must be placed outside the dangerous area or they must be protected with an explosion-proof covering.

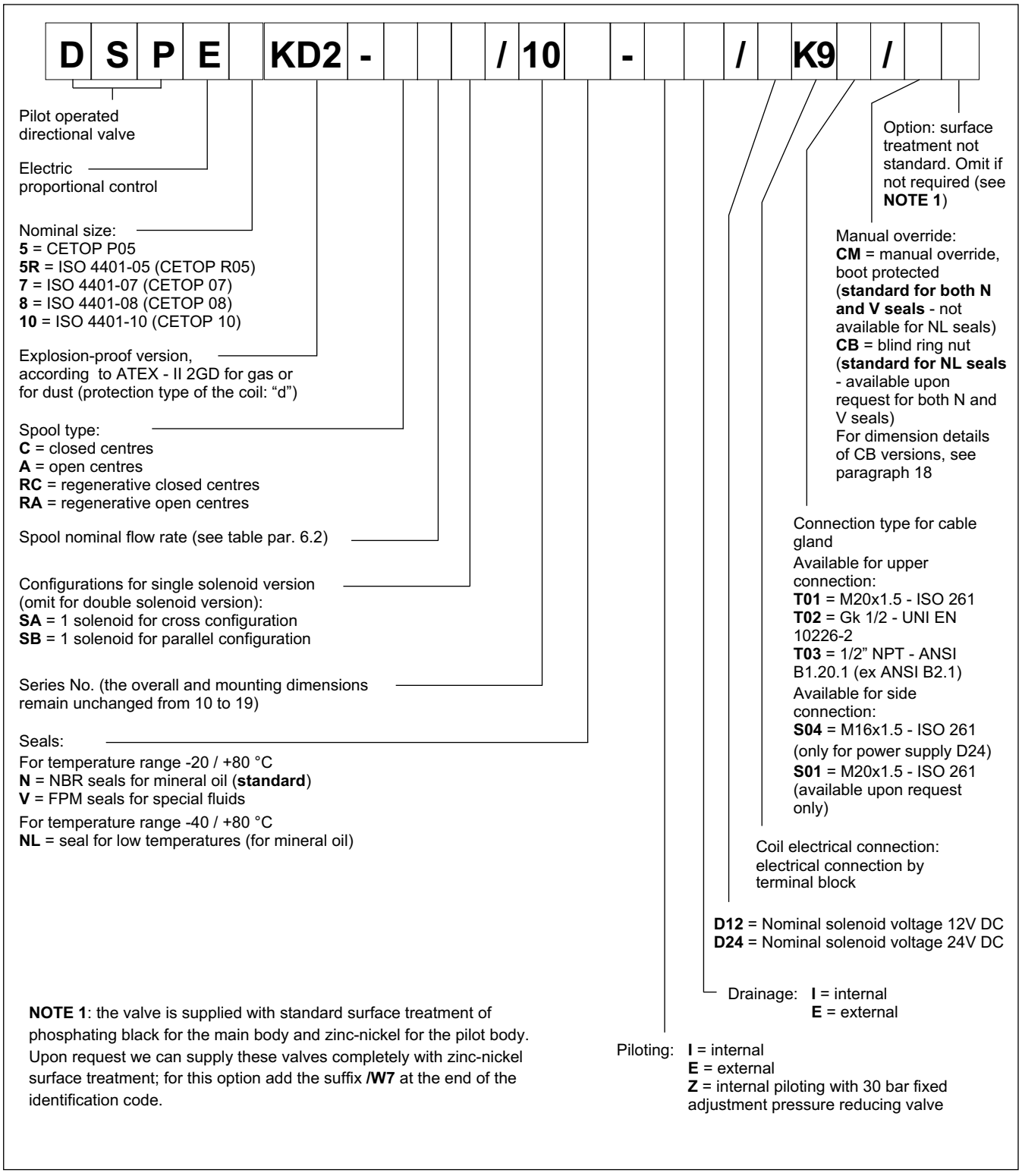
In order to safeguard the electronic device to which the valve is connected, there is a protection circuit in the coil, that reduces voltage peaks, which can occur when inductances are switched off.

The table shows the type of fuse recommended according to the nominal voltage of the valve and to the value of the voltage peaks reduction.

Coil type	Nominal voltage [V]	Rated current [A]	**Recommended pre-fuse characteristics medium time-lag according to DIN 41571 [A]**	Maximum voltage value upon switch off [V]	Suppressor circuit
D12	12	1,88	2,5	- 49	Transient voltage suppressor bidirectional
D24	24	0,86	1,25	- 49	

6 - IDENTIFICATION OF PILOT OPERATED SOLENOID VALVES DSPE*KD2

6.1 - Identification code



NOTE 1: the valve is supplied with standard surface treatment of phosphating black for the main body and zinc-nickel for the pilot body. Upon request we can supply these valves completely with zinc-nickel surface treatment; for this option add the suffix **/W7** at the end of the identification code.

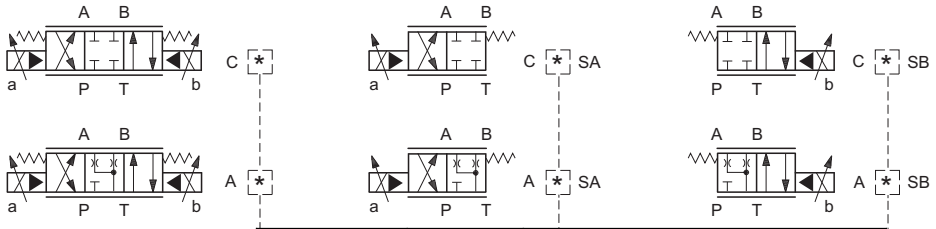
6.2 - Configurations

The valve configuration depends on the combination of the following elements: number of proportional solenoids, spool type, rated flow.

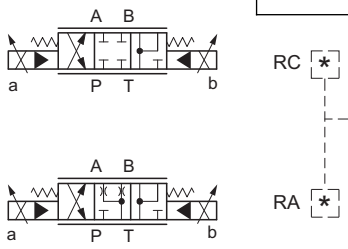
Configuration 2 solenoids:
3 positions with spring centering

1 solenoid for cross configuration "**SA**":
2 positions (central + external)
with spring centering

1 solenoid for parallel configuration "**SB**":
2 positions (central + external)
with spring centering



valve type	*	nominal flow rate with Δp 10 bar P-T
DSPE5KD2	**80**	80 l/min
DSPE5RKD2	**80/40**	80 (P-A) / 40 (B-T) l/min
DSPE7KD2	**100**	100 l/min
	150	150 l/min
	150/75	150 (P-A) / 75 (B-T) l/min
DSPE8KD2	**200**	200 l/min
	300	300 l/min
	300/150	300 (P-A) / 150 (B-T) l/min
DSPE10KD2	**350**	350 l/min
	500	500 l/min
	500/250	500 (P-A) / 250 (B-T) l/min

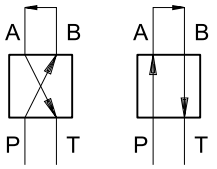


valve type	*	nominal flow rate with Δp 10 bar P-T
DSPE7KD2	**150/75**	150 (P-A) / 75 (B-T) l/min
DSPE8KD2	**300/150**	300 (P-A) / 150 (B-T) l/min
DSPE10KD2	**500/250**	500 (P-A) / 250 (B-T) l/min

7 - CHARACTERISTIC CURVES OF PILOT OPERATED SOLENOID VALVES

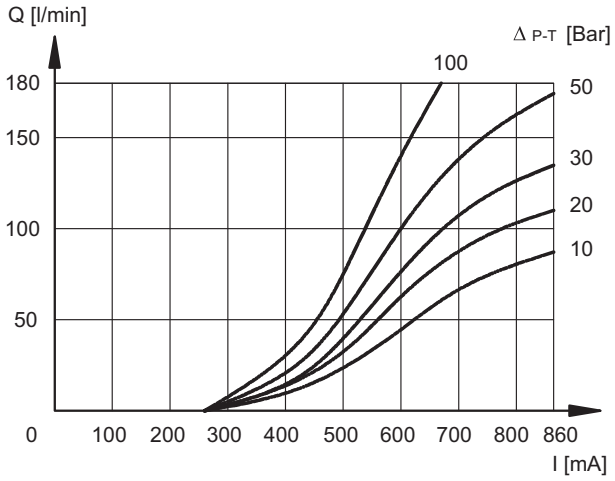
(values measured with viscosity of 36 cSt at 50°C with valves in conjunction with the relative electronic control units)

Typical flow rate control curves at constant Δp according to current supply to the solenoid (D24 version, 860 mA max current), measured for the available spool types.
The reference Δp values are measured between valve ports P and T.



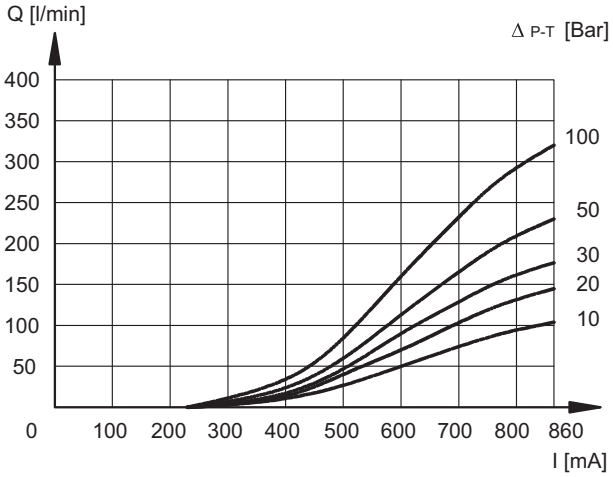
7.1 - Characteristic curves DSPE5KD2 and DSPE5RKD2

SPOOL C80 - A80

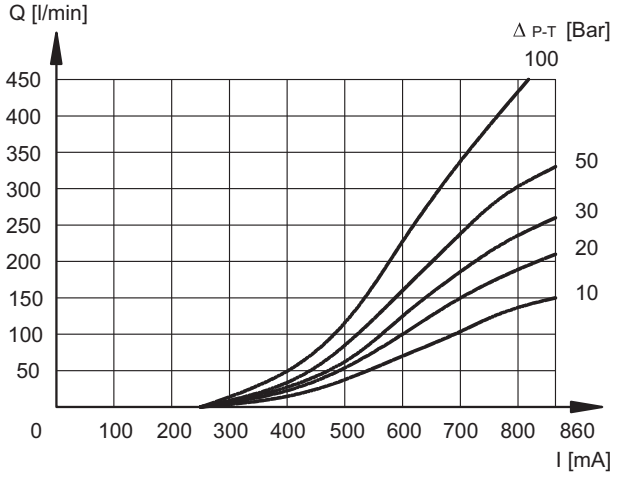


7.2 - Characteristic curves DSPE7KD2

SPOOL C100 - A100

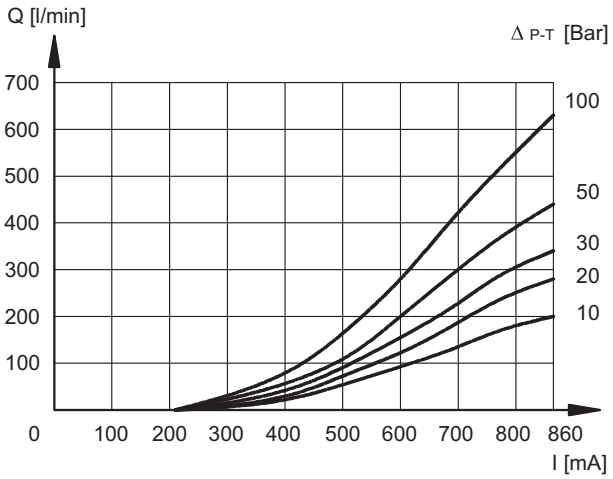


SPOOL C150 - A150

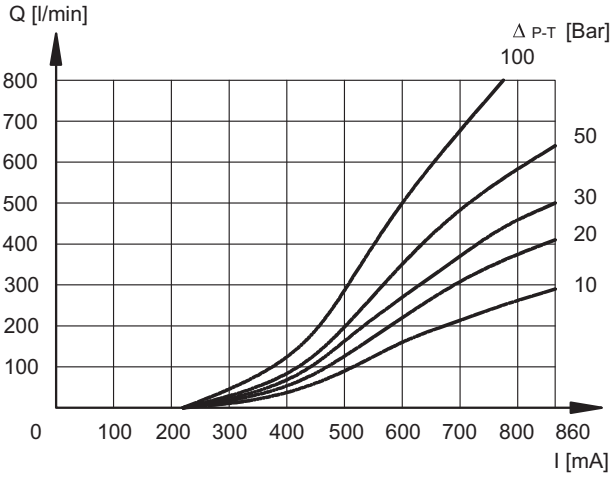


7.3 - Characteristic curves DSPE8KD2

SPOOL C200 - A200

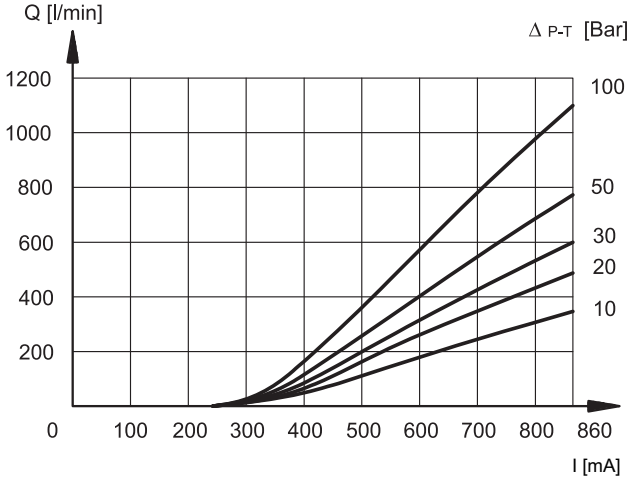


SPOOL C300 - A300

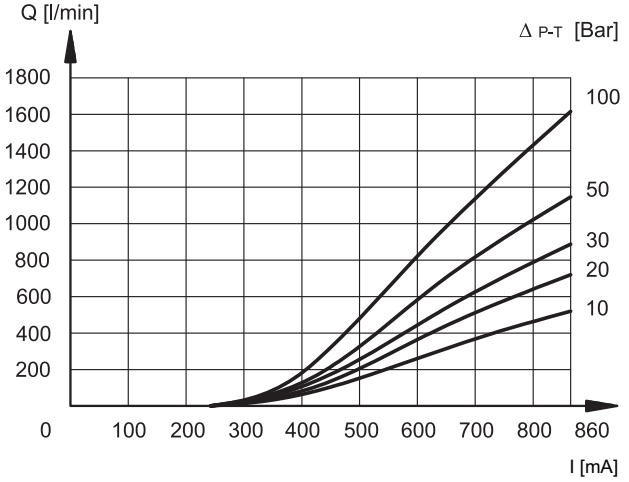


7.4 - Characteristic curves DSPE10KD2

SPOOL C350 - A350



SPOOL C500 - A500



8 - PRESSURES

Pressure	MIN	MAX
Piloting pressure on X port	30	210 (**NOTE**)
Pressure on T port with interal drain	–	10
Pressure on T port with external drain	–	250

NOTE: if the valve operates with higher pressures it is necessary to use the version with external pilot and reduced pressure. Otherwise, the valve with internal pilot and pressure reducing valve with 30 bar fixed adjustment can be ordered. Add the letter Z to the identification code to order this option (see par. 6.1). Consider that, by adding the pressure reducing valve, the overall dimensions increase 40 mm in height.

9 - HYDRAULIC CHARACTERISTICS (values measured with viscosity of 36 cSt at 50°C with valves in conjunction with the relative electronic control units)

		DSPE5KD2 DSPER5KD2	**DSPE7KD2**	**DSPE8KD2**	**DSPE10KD2**
Max flow rate	l/min	180	450	800	1600
Piloting flow requested with operation 0 →100%	l/min	3	5	9	13
Piloting volume requested with operation 0 →100%	cm^3	1,7	3,2	9,1	21,6

10 - STEP RESPONSE (measured with mineral oil with viscosity of 36 cSt at 50°C in conjunction with the relative electronic control units)

Step response is the time taken for the valve to reach 90% of the set pressure value following a step change of reference signal.

The table shows the typical step response tested with static pressure 100 bar.

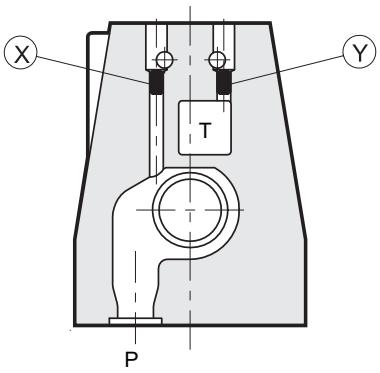
REFERENCE SIGNAL	0 → 100%	100 → 0%
	Step response [ms]	
DSPE5KD2 and DSPE5RKD2	50	40
DSPE7KD2	80	50
DSPE8KD2	100	70
DSPE10KD2	200	120

11 - PILOTING AND DRAINAGE

DSPE*KD2 valves are available with piloting and drainage, both internal and external.
The version with external drainage allows for a higher back pressure on the outlet.

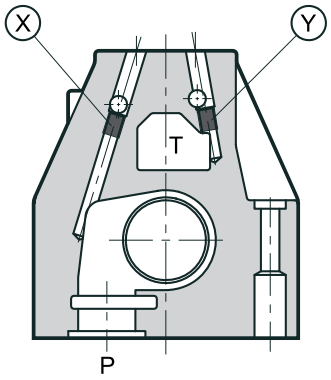
TYPE OF VALVE		Plug assembly	
		X	Y
IE	INTERNAL PILOT AND EXTERNAL DRAIN	NO	YES
II	INTERNAL PILOT AND INTERNAL DRAIN	NO	NO
EE	EXTERNAL PILOT AND EXTERNAL DRAIN	YES	YES
EI	EXTERNAL PILOT AND INTERNAL DRAIN	YES	NO

X: plug M5x6 for external pilot
Y: plug M5x6 for external drain



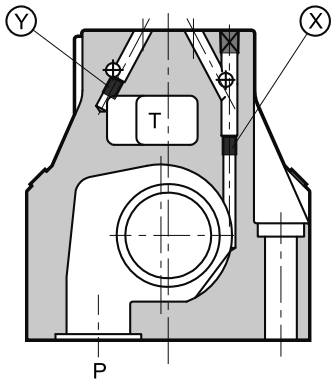
DSPE5KD2
DSPE5RKD2

X: plug M6x8 for external pilot
Y: plug M6x8 for external drain



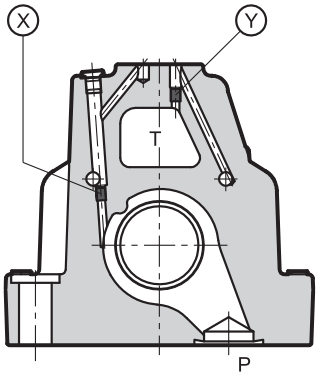
DSPE7KD2

X: plug M6x8 for external pilot
Y: plug M6x8 for external drain



DSPE8KD2

X: plug M6x8 for external pilot
Y: plug M6x8 for external drain

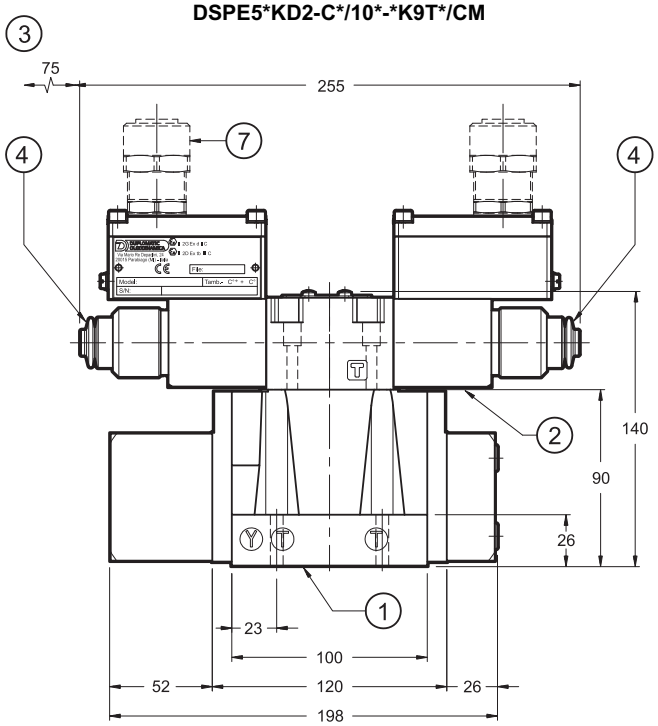


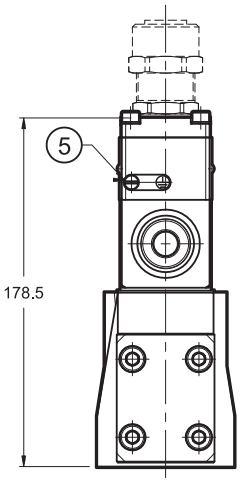
DSPE10KD2

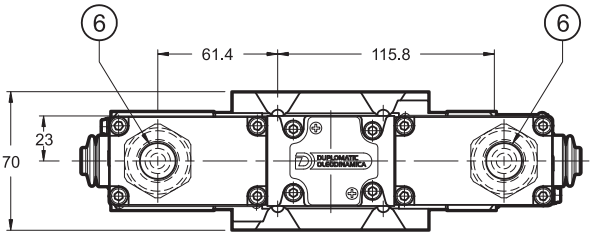
12 - DSPE5KD2 and DSPE5RKD2 OVERALL AND MOUNTING DIMENSIONS

dimensions in mm

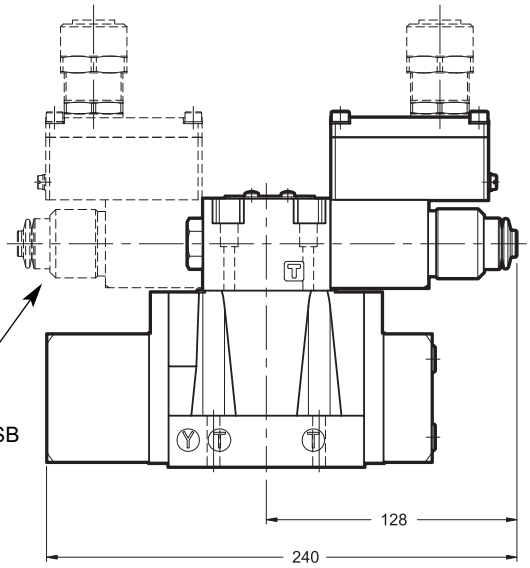
DSPE5*KD2-A*/10*-*K9T*/CM
DSPE5*KD2-C*/10*-*K9T*/CM







DSPE5*KD2-A*SA/10*-*K9T*/CM
DSPE5*KD2-C*SA/10*-*K9T*/CM



Solenoid position for versions A*SB and C*SB

NOTE 1: for overall dimensions with Z option (fixed adjustment pressure reducing valve) consider an increase of 40 mm in height.
NOTE 2: for side port cable gland see paragraph 16

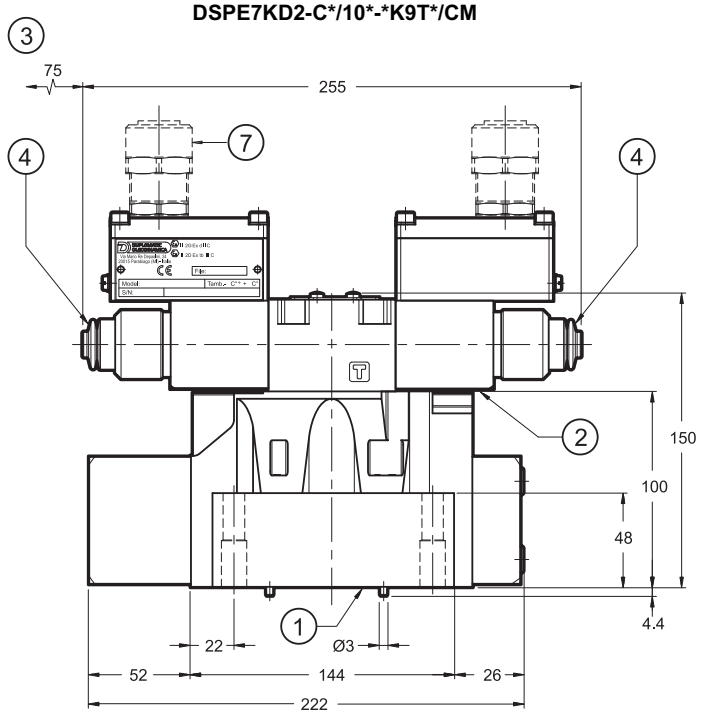
1	Mounting surface with sealing rings
2	Explosion-proof coil
3	Coil removal space
4	Manual override, boot protected (**standard for both N and V seals**) - for blind ring nut dimensions (standard for NL seals) see par. 18
5	Terminal for supplementary earth connection
6	Upper port for cable gland
7	Cable gland (upper port shown). To be ordered separately, see paragraph 19

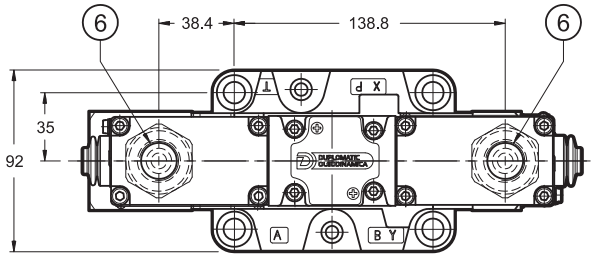
Fastening of single valve: 4 SHC ISO 4762 screws M6x35
Tightening torque: 8 Nm (A8.8 screws)
Threads of mounting holes: M6x10
Sealing rings: 5 OR type 2050 (12.42x1.78) - 90 Shore 2 OR type 2037 (9.25x1.78) - 90 Shore

13 - DSPE7KD2 OVERALL AND MOUNTING DIMENSIONS

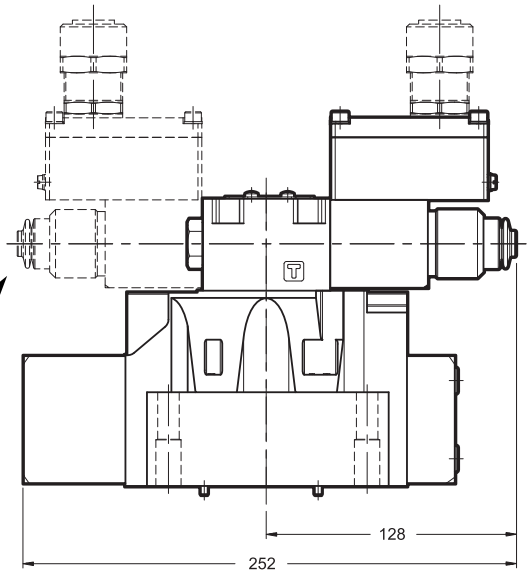
dimensions in mm

DSPE7KD2-A*/10*-*K9T*/CM
DSPE7KD2-C*/10*-*K9T*/CM





DSPE7KD2-A*SA/10*-*K9T*/CM
DSPE7KD2-C*SA/10*-*K9T*/CM



Solenoid position for versions A*SB and C*SB

NOTE 1: for overall dimensions with Z option (fixed adjustment pressure reducing valve) consider an increase of 40 mm in height.
NOTE 2: for side port cable gland see paragraph 16

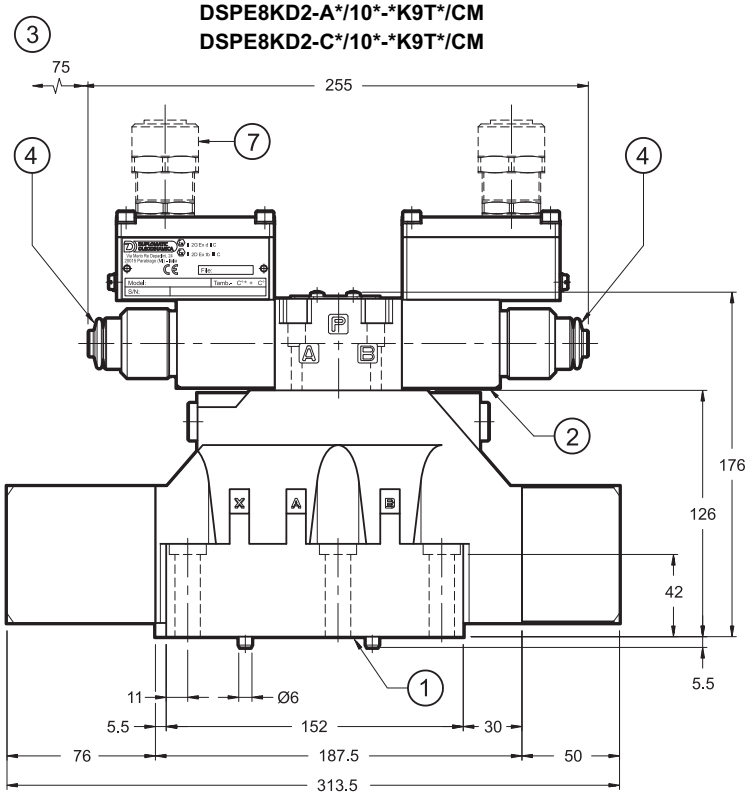
1	Mounting surface with sealing rings
2	Explosion-proof coil
3	Coil removal space
4	Manual override, boot protected (**standard for both N and V seals**) - for blind ring nut dimensions (standard for NL seals) see par. 18
5	Terminal for supplementary earth connection
6	Upper port for cable gland
7	Cable gland (upper port shown). To be ordered separately, see paragraph 19

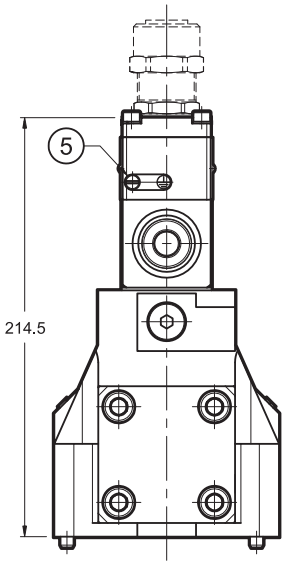
Fastening of single valve: 4 SHC screws ISO 4762 M10x60 2 SHC screws ISO 4762 M6x60
Tightening torque: M10x60: 40 Nm (A8.8 screws) M6x60: 8 Nm (A8.8 screws)
Threads of mounting holes: M6x18; M10x18
Sealing rings: 4 OR type 130 (22.22X2.62) - 90 Shore 2 OR type 2043 (10.82x1.78) - 90 Shore

14 - DSPE8KD2 OVERALL AND MOUNTING DIMENSIONS

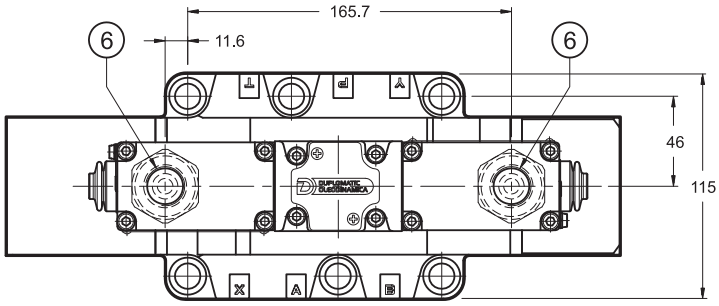
dimensions in mm

DSPE8KD2-A*/10*-*K9T*/CM
DSPE8KD2-C*/10*-*K9T*/CM

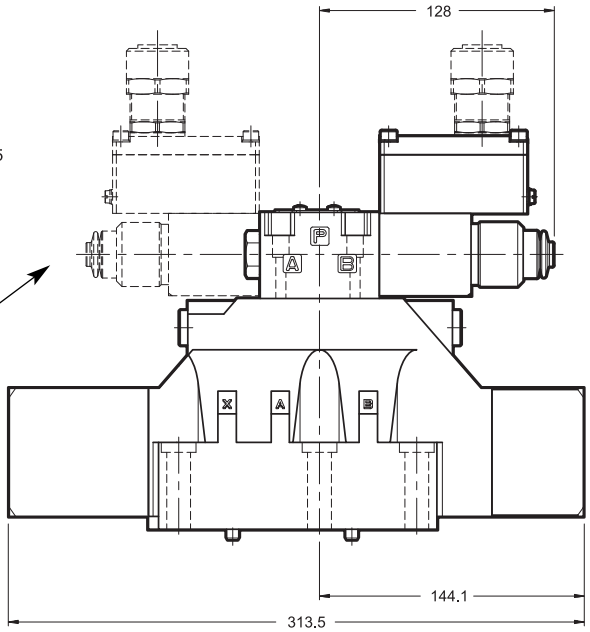




DSPE5KD2-A*SA/10*-*K9T*/CM
DSPE5KD2-C*SA/10*-*K9T*/CM



Solenoid position for versions A*SB and C*SB



NOTE 1: for overall dimensions with Z option (fixed adjustment pressure reducing valve) consider an increase of 40 mm in height.
NOTE 2: for side port cable gland see paragraph 16

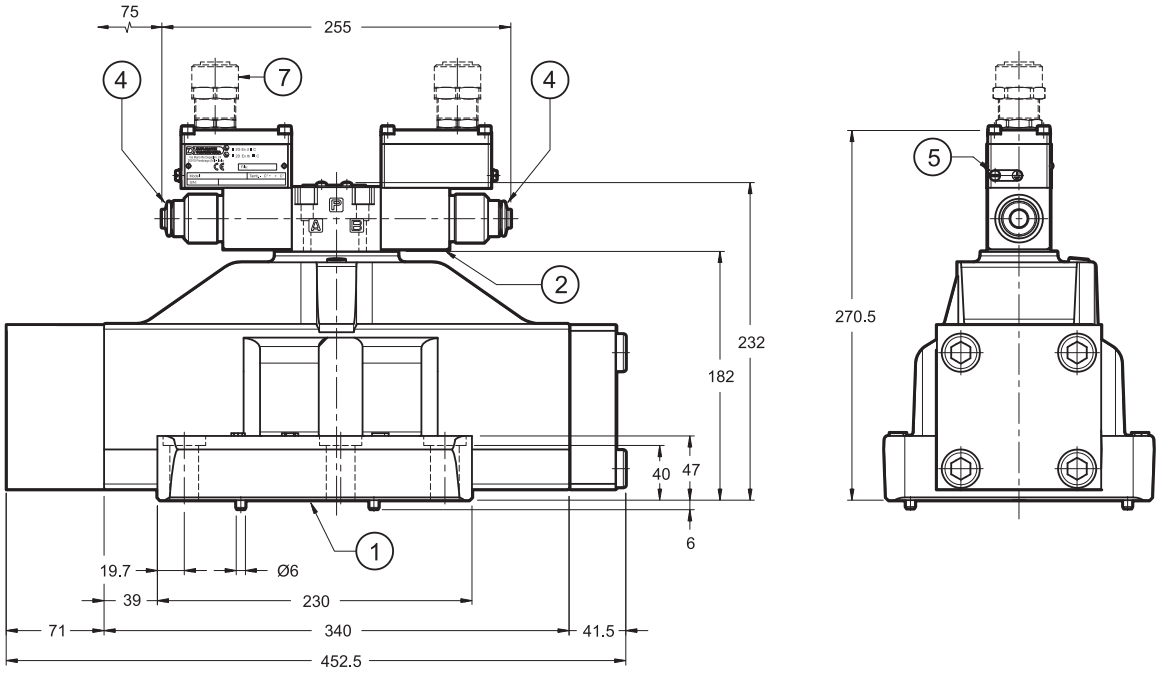
1	Mounting surface with sealing rings
2	Explosion-proof coil
3	Coil removal space
4	Manual override, boot protected (**standard for both N and V seals**) - for blind ring nut dimensions (standard for NL seals) see par. 18
5	Terminal for supplementary earth connection
6	Upper port for cable gland
7	Cable gland (upper port shown). To be ordered separately, see paragraph 19

Fastening of single valve: 6 SHC ISO 4762 screws M12x60
Tightening torque: 69 Nm (A8.8 screws)
Threads of mounting holes: M12x20
Sealing rings: 4 OR type 3118 (29.82x2.62) - 90 Shore 2 OR type 3081 (20.24x2.62) - 90 Shore

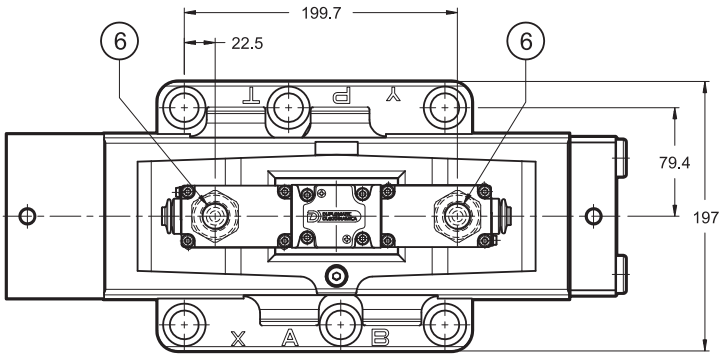
15 - DSPE10KD2 OVERALL AND MOUNTING DIMENSIONS

dimensions in mm

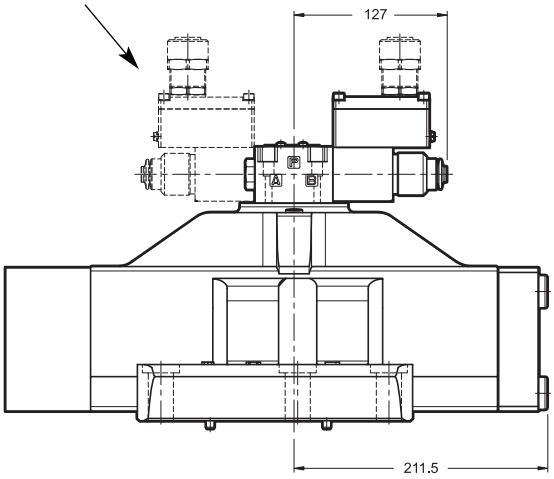
DSPE10KD2-A*/10*-*K9T*/CM
DSPE10KD2-C*/10*-*K9T*/CM



DSPE10KD2-A*SA/10*-*K9T*/CM
DSPE10KD2-C*SA/10*-*K9T*/CM



Solenoid position for versions A*SB and C*SB



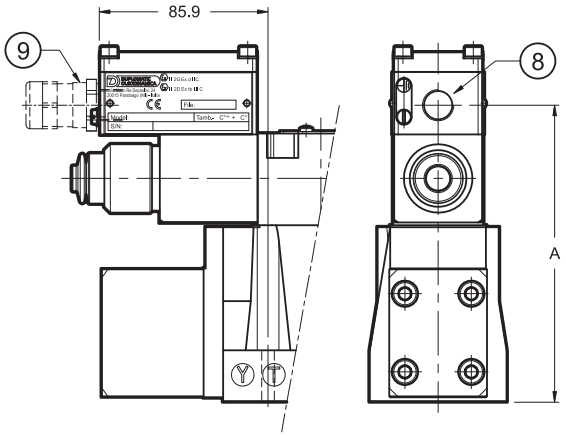
NOTE 1: for overall dimensions with Z option (fixed adjustment pressure reducing valve) consider an increase of 40 mm in height.
NOTE 2: for side port cable gland see paragraph 16

1	Mounting surface with sealing rings
2	Explosion-proof coil
3	Coil removal space
4	Manual override, boot protected (**standard for both N and V seals**) - for blind ring nut dimensions (standard for NL seals) see par. 18
5	Terminal for supplementary earth connection
6	Upper port for cable gland
7	Cable gland (upper port shown). To be ordered separately, see paragraph 19

Fastening of single valve: 6 SHC screws ISO 4762 M20x70
Tightening torque: 330 Nm (A8.8 screws)
Threads of mounting holes: M20x40
Sealing rings: 4 OR type 4150 (37.59x3.53) - 90 shore 2 OR type 3081 (20.24x2.62) - 90 shore

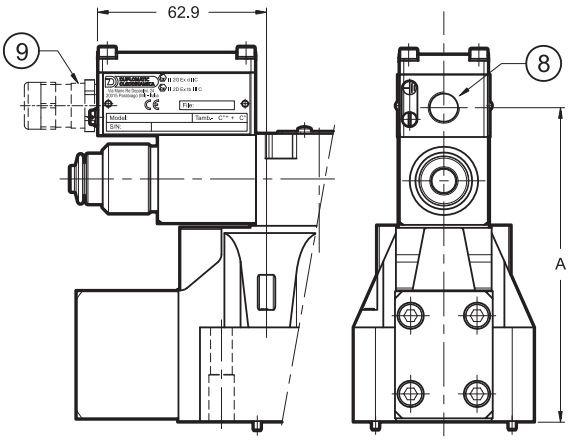
16 - DSPE*KD2-*/10*-*K9S*/* (SIDE CONNECTION) OVERALL AND MOUNTING DIMENSIONS

DSPE5KD2-*/10*-*K9S*/*
DSPE5RKD2-*/10*-*K9S*/*



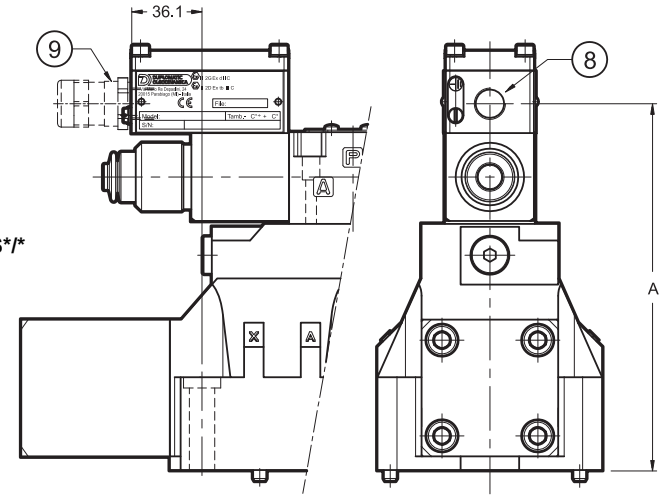
Side port type	Dimension A
S01	150.5
S04	151.5

DSPE7KD2-*/10*-*K9S*/*



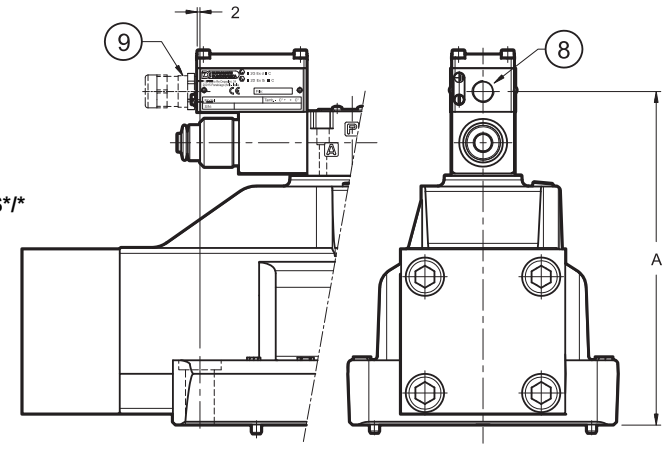
Side port type	Dimension A
S01	157.5
S04	158.5

DSPE8KD2-*/10*-*K9S*/*



Side port type	Dimension A
S01	186.5
S04	187.5

DSPE10KD2-*/10*-*K9S*/*



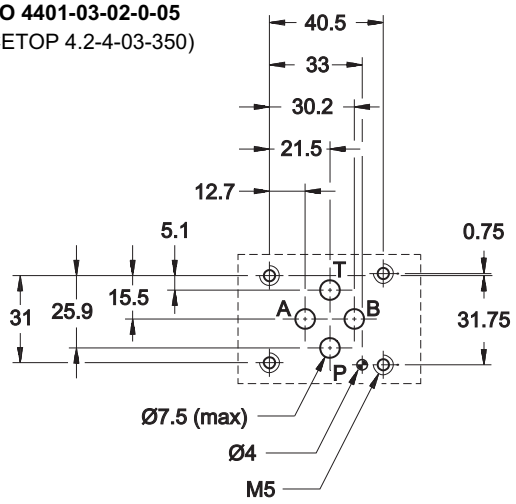
Side port type	Dimension A
S01	242.5
S04	243.5

dimensions in mm

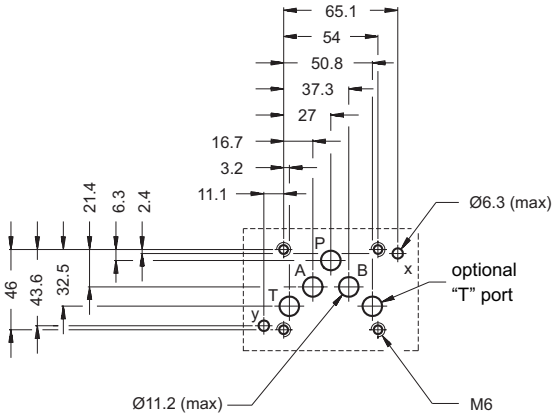
8	Side port for cable gland
9	Cable gland (side port shown). To be ordered separately, see par. 19

17 - MOUNTING SURFACES

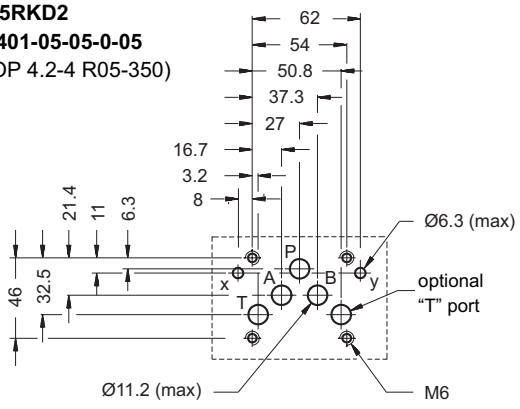
DSE3KD2
ISO 4401-03-02-0-05
(CETOP 4.2-4-03-350)



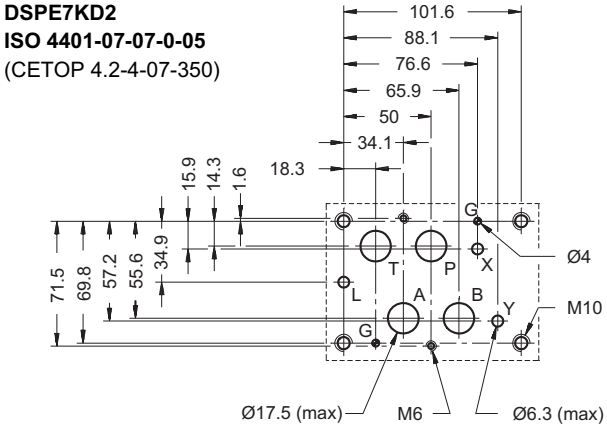
DSPE5KD2
CETOP 4.2-4 P05-350



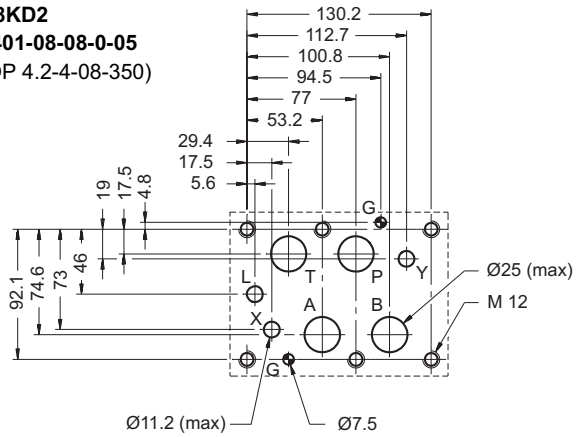
DSPE5RKD2
ISO 4401-05-05-0-05
(CETOP 4.2-4 R05-350)



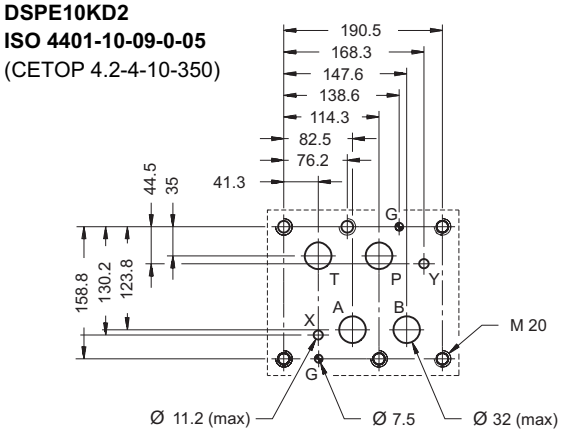
DSPE7KD2
ISO 4401-07-07-0-05
(CETOP 4.2-4-07-350)



DSPE8KD2
ISO 4401-08-08-0-05
(CETOP 4.2-4-08-350)

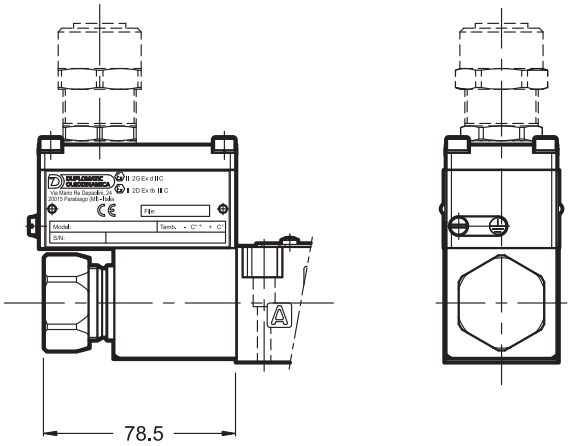


DSPE10KD2
ISO 4401-10-09-0-05
(CETOP 4.2-4-10-350)

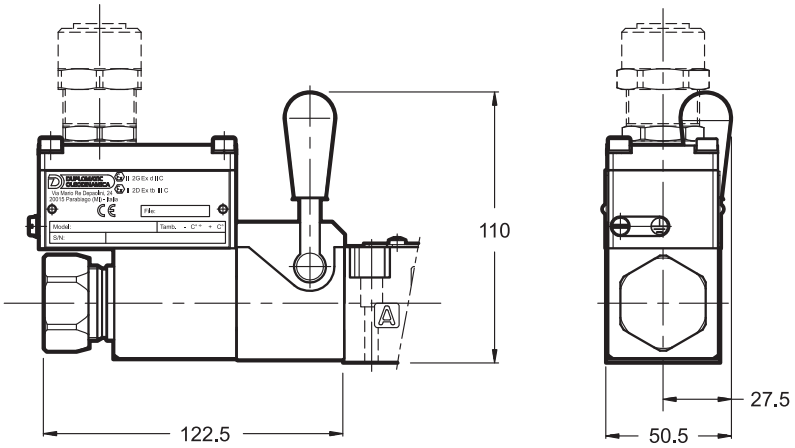


18 - MANUAL OVERRIDE

18.1 - CB - Blind ring nut

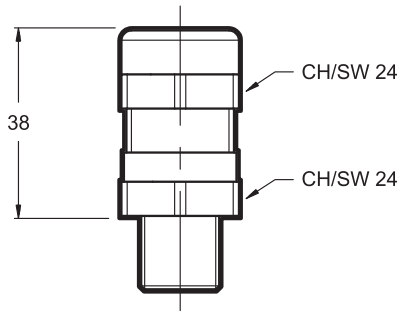


18.2 - CH - Lever manual override



19 - CABLE GLANDS

Cable glands must be ordered separately; Duplomatic offers some types of cable glands with the following features:
- version for non-armoured cable, external seal on the cable (suitable for Ø8÷10 mm cables);
- according to ATEX II 2GD directive certified
- cable gland material: nickel brass
- rubber tip material: silicone
- ambient temperature range: -70ºC ÷ +220ºC
- protection degree: IP66 / IP68



For the request of the version needed, indicate the description and the code mentioned here below:

Description: CGK2/NB-01/10

Code: 3908108001

Version with M20x1.5 - ISO 261 male thread, suitable for coils with T01 and S01 connection types; it is supplied equipped with silicone seal, that must be assembled between the cable gland and the coil cover, so as to ensure IP66 / IP68 protection degree.

Description: CGK2/NB-02/10

Code: 3908108002

Version with Gk 1/2 - UNI EN 10226-2 male thread, suitable for coils with T02 connection type; in order to ensure IP66 / IP68 protection degree, the customer must apply LOCTITE® 243™ threadlocker or similar between the cable gland connection thread and the coil cover.

Description: CGK2/NB-03/10

Code: 3908108003

Version with 1/2” NPT - ANSI B1.20.1 (ex ANSI B2.1), suitable for coils with T03 connection type; in order to ensure IP66 / IP68 protection degree, the customer must apply LOCTITE® 243™ threadlocker or similar between the cable gland connection thread and the coil cover.

Description: CGK2/NB-04/10

Code: 3908108004

Version with M16x1.5 - ISO 261 male thread, suitable for coils with S04 connection type; it is supplied equipped with silicone seal, that must be assembled between the cable gland and the coil cover, so as to ensure IP66 / IP68 protection degree.

20 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other fluid types such as HFA, HFB, HFC, please consult our technical department.

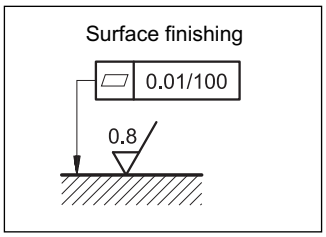
Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

21 - INSTALLATION

The valves can be installed in any position without impairing correct operation.

Valve fastening takes place by means of screws or tie rods, laying the valve on a lapped surface, with values of planarity and smoothness that are equal to or better than those indicated in the drawing.

If the minimum values of planarity or smoothness are not met, fluid leakages between valve and mounting surface can easily occur.



22 - SUBPLATES (see catalogue 51 000)

	DSE3KD2	DSPE5KD2	DSPE7KD2	DSPE8KD2
Type with rear ports	PMMD-AI3G	PME4-AI5G	PME07-AI6G	
Type with side ports	PMMD-AL3G	PME4-AL5G	PME07-AL6G	PME5-AL8G
P, T, A, B ports dimensions	3/8” BSP	3/4” BSP	1” BSP	1 ½” BSP
X, Y ports dimensions	-	1/4” BSP	1/4” BSP	1/4” BSP

NOTE: Subplates (to be ordered separately) do not contain neither aluminium nor magnesium at a higher rate than the value allowed by norms according to ATEX directive for category 2GD.

The user must take care and make a complete assessment of the ignition risk, that can occur from the relative use in potentially explosive environments.

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