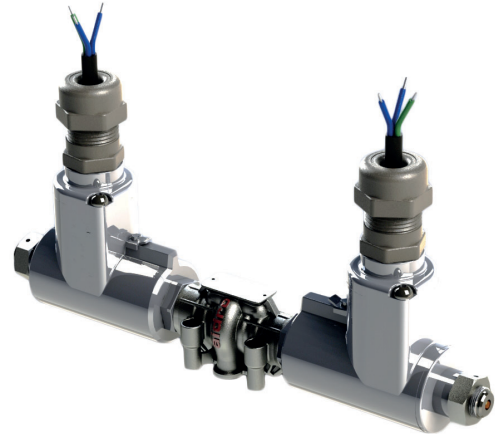


STAINLESS STEEL DIRECTIONAL CONTROL VALVES– CETOP 03 proof II 2 GD, Ex db IIC T5 Gb, Ex tb IIIC T100 C Db IP66/67
HD3-AMEX/30
50 l/min 35 MPa (350 bar)

1 DESCRIPTION

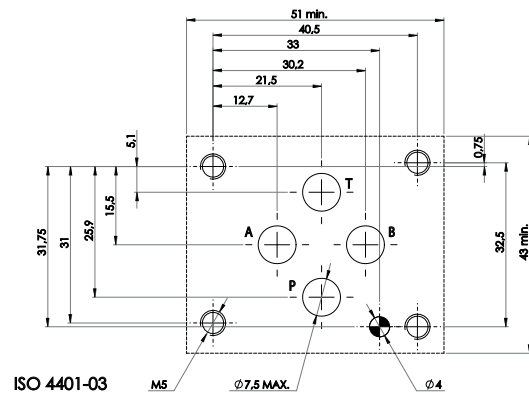
Valves HD3-AMEX/30 are ATEX directional control valve solenoid operated with subplate mounting interface acc. to ISO 4401, DIN 24340 (CETOP 03) with stainless steel body .
 The design of the body is optimized with metal 3D printing process.
 The valve is available with ATEX metallic DC and AC solenoids.



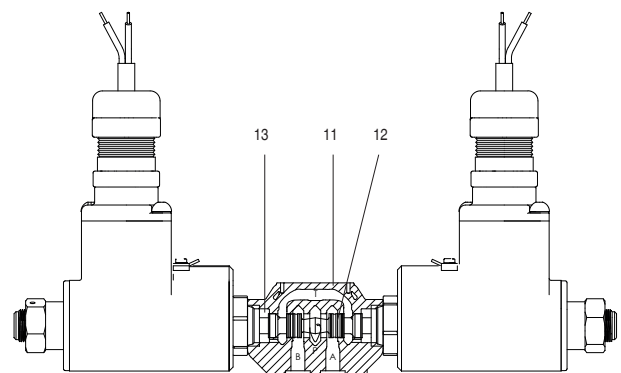
2 ORDERING CODE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HD3	- AMEX	-	-	-	-	-	-	/ 30

- (1) HD3 : 4-way directional valve Cetop 03 – Pressure 35 MPa (350 bar)
- (2) AMEX : electrically controlled, Ex-proof solenoid, stainless steel body
- (3) Spool type body (see 4):
 - number is the main spool type
 - letter is the solenoid or spring arrangement:
 - C : 2 solenoids spool is spring centered (3 position)
 - N : 2 solenoids spool is detented (2 position) see 9
 - LL : 1 solenoid (a), spool is spring offset (2 position, end to end)
 - ML: 1 solenoid (a), spool is spring offset (2 position, middle to end)
 - LM: 1 solenoid (a), spool is spring offset (2 position, end to middle)
- (4) b: only for LL, ML, LM sol. b installed (instead of sol. a)



- (5) Code reserved for option and variants
 - 3S-**: calibrated orifice on P port, see 10
- (6) Cable and cable gland options:
 - No designation: with cable and cable gland
- (7) Electric voltage and solenoid coils
 - 012C: coil(s) for V12DC
 - 024C: coil(s) for V24DC
 - 110A: coil(s) for V110/50 – V115/60 AC
 - 230A: coil(s) for V220/50 – V230/60 AC
- (8) Cable length options:
 - no designation: 3m (standard)
 - 6: 6m
 - 10: 10m
 - 16: 16m
 - 20: 20m
 - 25: 25m
- (9) Design number of the valves ATEX solenoid for G and D

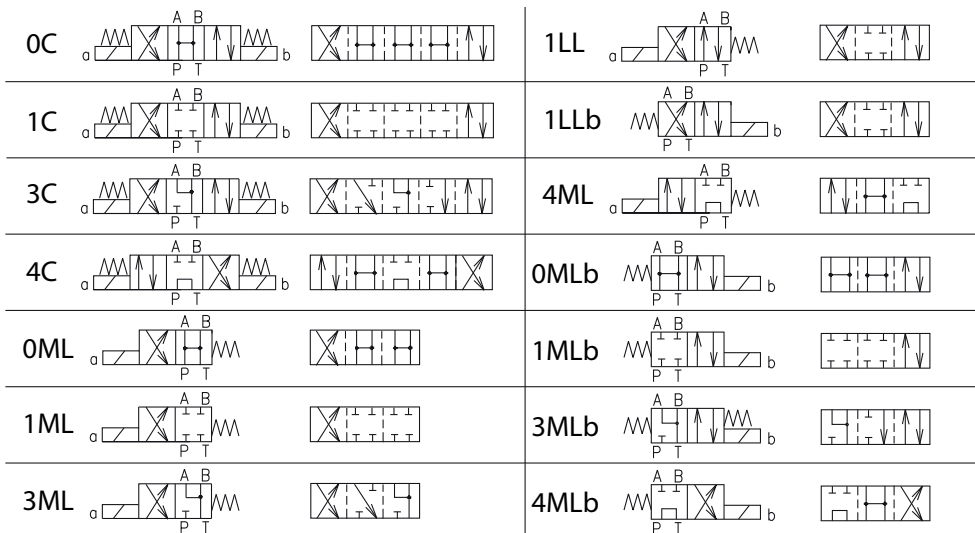


The spool 12 shifts into the valve body 11 subject to the action of springs 13 and solenoids 2. Spool 12, depending from its shape and its position in the valve body, opens and/ or closes passages between P, A, B and T ports, thus controlling the direction of the hydraulic flow.

3 TECHNICAL DATA

Nominal flow	32 l/min	Electric Characteristics: Valves type HD3-EX-* are operated by solenoid that are energized: <ul style="list-style-type: none"> • directly from a D.C. voltage supply: <ul style="list-style-type: none"> V 12 DC = 012 C V 24 DC = 024 C • by the use of coils that incorporate a full wave bridge rectifier, from A.C. voltage supply: <ul style="list-style-type: none"> V 110/50-V 115/60 = 110 A V 220/50-V 230/60 = 230 A Other voltages are available. Permissible supply voltage variation: + 5%. Ex-proof solenoid according to ATEX 2014/34/EU, Ex II 2GD , class Ex db IIC T5 Gb, Ex tb IIIC T100 °C Db IP66/67- see 7 Power consumption: max 11 w. Currents are, at nominal voltage and at 25°C: V12DC = 0,92A V115AC = approx 0,1A V24DC = 0,46A V230AC = approx 0,05A Ex db IIC T5 Gb and Ex tb IIIC T100 C Db
Maximum rec. flow rate	50 l/min	
Maximum nominal pressure (P,A,B)	35 MPa (350 bar)	
Maximum pressure at T port	35 MPa (350 bar)	
Pressure drops	See 5	
Protection to DIN 40050	IP 67	
Duty cycle	100%	
Service life	$\geq 10^7$ cycles	
Dimensions and Installation	see 6	
Mass	Approx 2,6 / 3,7 kg	

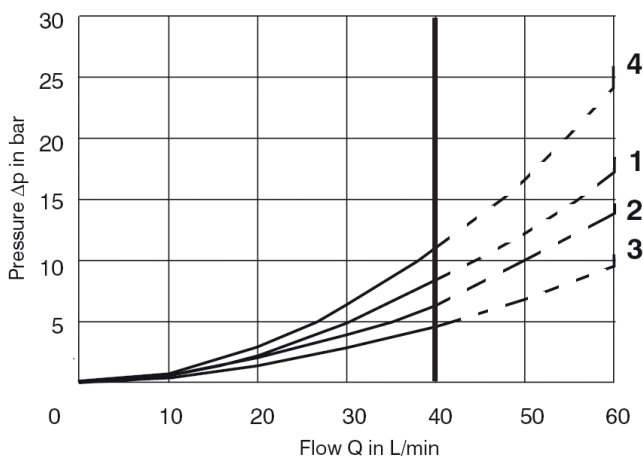
4 SPOOL IDENTIFICATION AND INTERMEDIATE POSITION TRANSITORIES



Spools, springs and solenoids combination permit to obtain almost every type of ports (P, A, B, T) connection and sequence. For almost all types of solenoids/springs combination and for all type of spools (with the exceptions of spool 4), when solenoid "a" is energized, hydraulic connections are P-> B and A ->T; to obtain P-> A and B-> T solenoid "b" must be energized. The hydraulic connections that are obtained in the "central" (neutral) position when solenoids are not energized is the characteristic mark of the spool shape and from it derives its identification number:

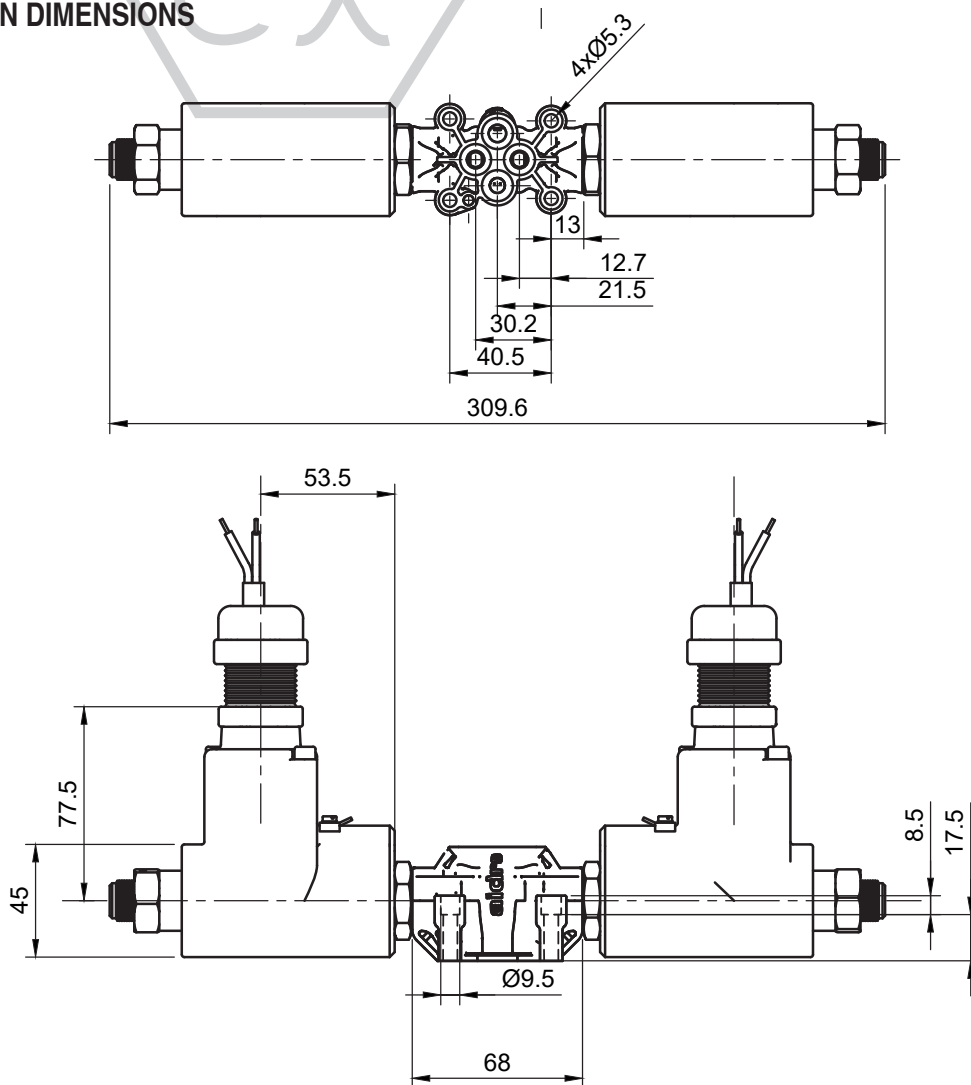
- 0 = P, A, B, T connected
- 1 = P, A, B, T closed
- 3 = P closed, A, B, T, connected.

5 TYPICAL DIAGRAMS

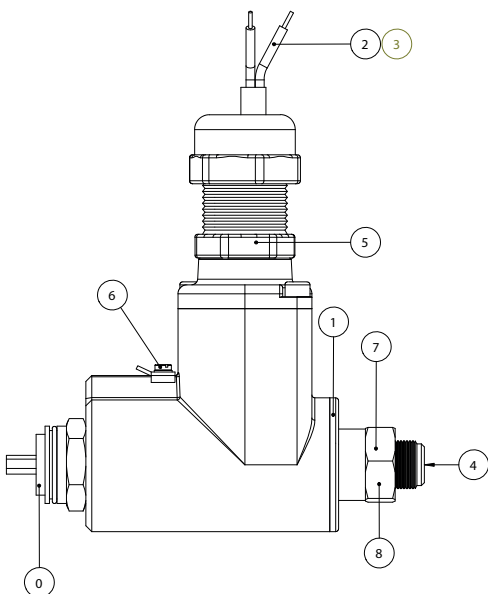


	P-A	P-B	A-T	B-T	P-T
1C	2	2	2	2	-
4C	4	4	4	4	2
0C	2	2	3	3	2
3C	2	2	3	3	-
1LL	3	3	4	4	-
1LLb	3	3	4	4	-
1ML	-	2	2	-	-
4ML	4	-	-	4	2
0ML	2	-	-	3	2
3ML	2	-	-	2	-

6 INSTALLATION DIMENSIONS



7 EXPLOSION PROOF SOLENOID SERIES 455 GD



- 0: Ex proof solenoid according to ATEX 2014/34/EU. II 2GD Ex db IIC T5 Gb, Ex tb IIIC T100 °C Db IP66/67. Solenoid outside surfaces are zinc-nickel plated, with 7 µm minimum thickness
- 1: Solenoid label indicates supply voltage, protection class Ex d, certification number by INERIS and maximum absorbed power.
- 2: 3-wires cable, according to CEI 20-22, of standard length of 1,5 m, is fastened to the coil and locked by cable gland.
- 3: Wires have 1,5 mm² section; earth connection wire is green-yellow. Electric connection must be in accordance with Ex-proof norm ATEX.
- 4: Manual override operation is by pushing the extended pin.
- 5: Normalised cable gland –torque 8 Nm + 1 – device has threaded attachment ½” conical – ISO 7/1
- 6: Earth connection screw
- 7: Threaded plug (socket hexagon 1,5 mm)to lock the retaining coil nut □
- 8: Nut for retaining the coil –torque 6 Nm + 1 – hexagon 24 mm.

Conformity of unit to the norms is not granted if coil is used separately from its electromagnetic tube.

Atex Certificates :
EUROFINS EPT 17 ATEX 2768X