

6 Monobloc directional control valves HDM25



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6.1 General Specifications

Technical specification		
Max flow rate	l/min U.S.G.P.M.	100 25
Max continuous operating pressure supply port P	bar PSI	250 3600
Max intermittent peak pressure Work port A/B	bar PSI	320 4600
Max back pressure tank port T	bar PSI	30 430
Oil temperature	°C °F	-10 to 80 14 to 180
Oil viscosity	mm ² /s	16 to 75
Oil filtration	μ	≤30

Spool leakage at 100 bar (1450 PSI), Temp. 50° C (120° F), viscosity 27 mm ² /s		
Maximum	cm ³ /min Cu. In./min	16 0.854
Average	cm ³ /min Cu. In./min	8 0.427
Lower values on demand (to be agreed with our Sales Dpt.)		

Number of spools	1
Adjustable direct operated relief valve (tamper-proof seal available on request)	RV
Load hold check valve in each section	LC

6.1.1 Weight

Version	kg	lb
HDM25/1	5.9	13

6.1.2 Material specification:

Body: High strength cast-iron.
Spool: Hardened steel and chrome plated
Seals: Buna "N".

6.1.3 Standard features:

- 1) Internal load holding check valves (prevent reverse flow through valve when two spools are operated)
- 2) Parallel circuit
- 3) Balanced interchangeable spools (provides minimum leakage, smooth operation)
- 4) Wide selection inlets, work ports, and outlets threaded ports.
- 5) Negative overlapping of the spool.

6.1.4 Optional features available:

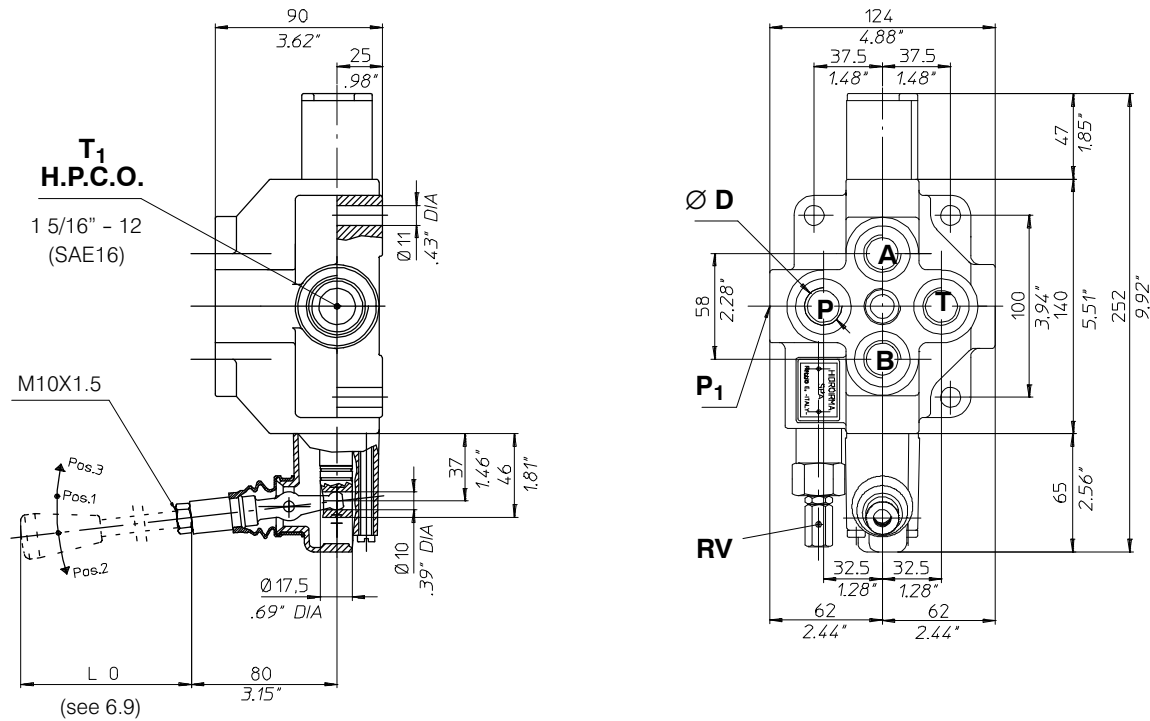
- 1) Open or closed centre positions, 3 or 4 way operations, 3 or 4 position (float position), full open centre (motor spool) and other spool options.
- 2) Carry over.
- 3) Series connection and tandem
- 4) Complete lever assembly

6.1.5 Symbols:

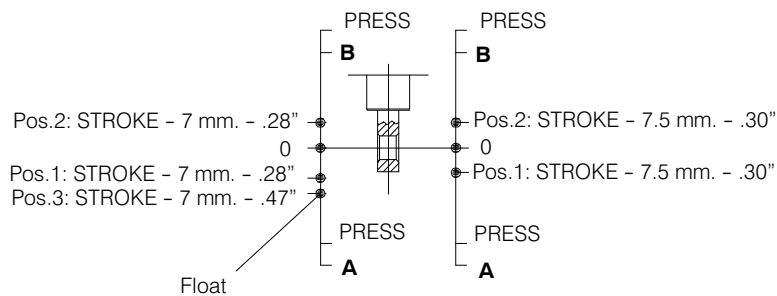
P: inlet port
T: outlet port
A/B: work ports
H.P.C.O.: carry-over
RV: relief valve
P₁T₁: side inlet and outlet ports
 3.1.0.2: spool position
P: pressure line
T: exhaust line
E: centre line (by pass).

6.2 Dimensional Data

HDM25/1

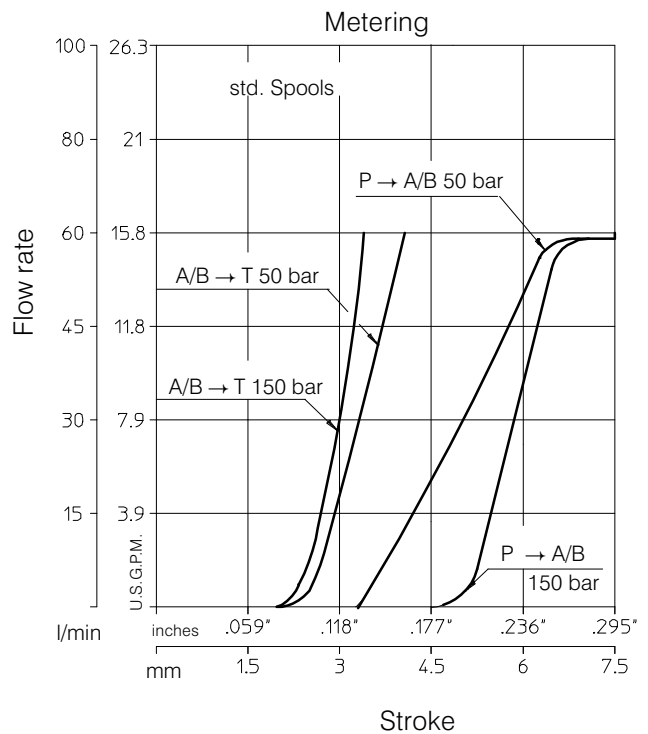
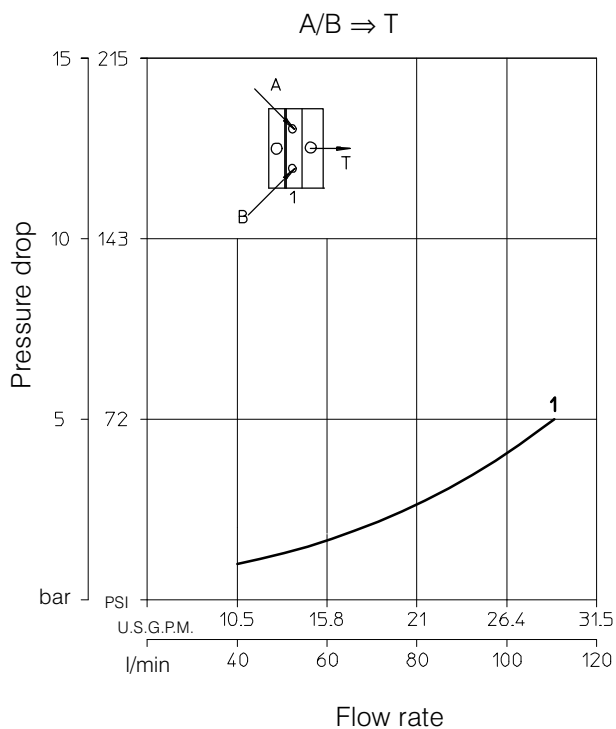
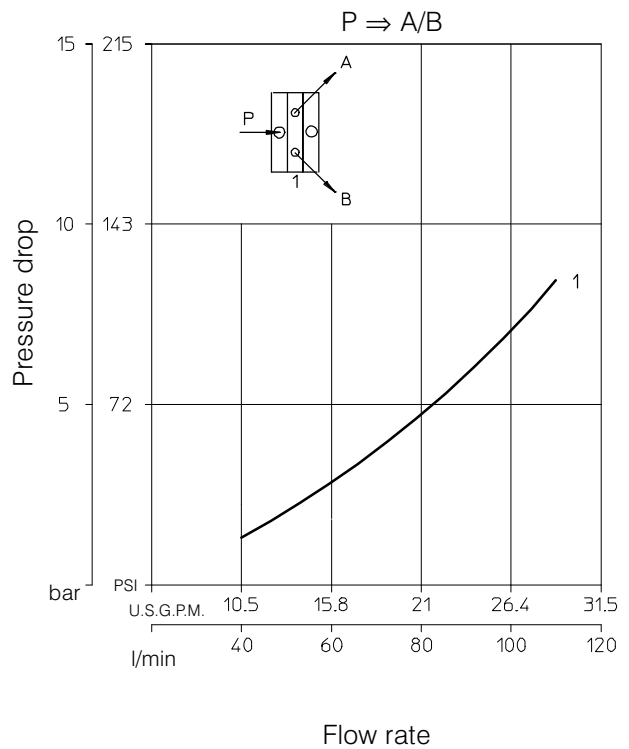
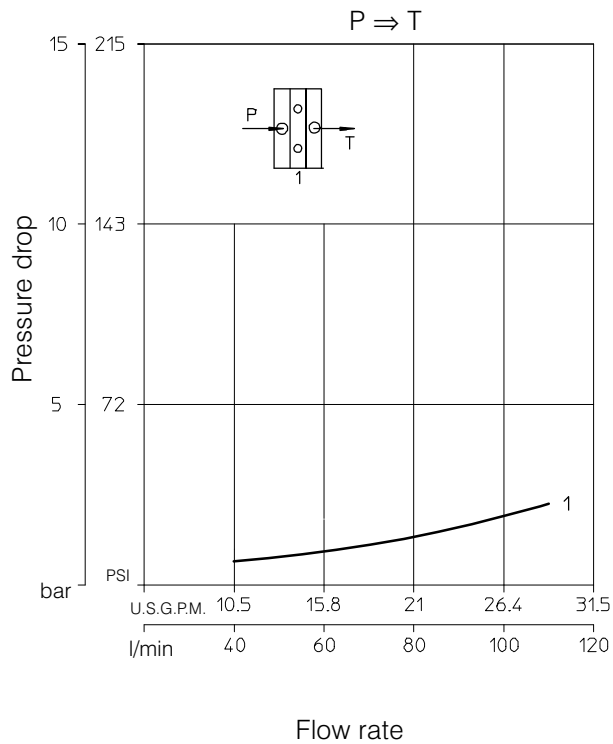


Dimensional data shown in mm and inches. Ex.: 62 = mm
2.44" = inches



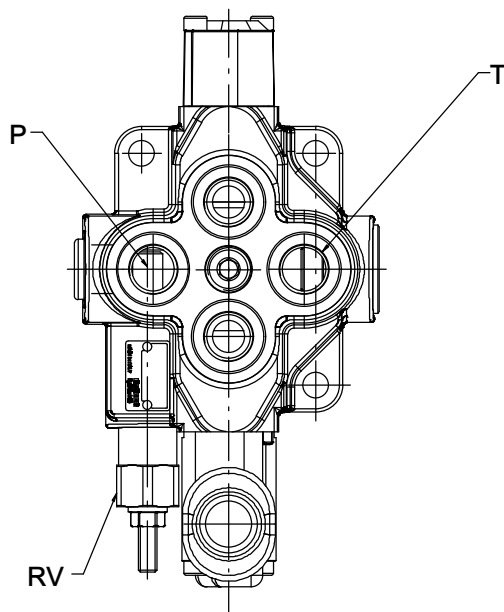
6.3 Performance curves

Oil: Shell Tellus T37
Temperature: 50° C (120° F)
Viscosity: 27 mm²/s

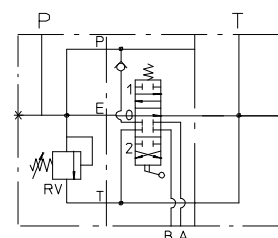


6.4 Monobloc bodies

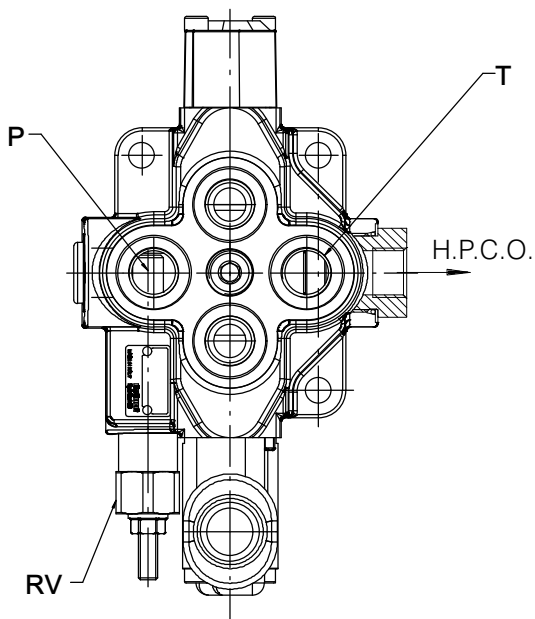
6.4.1 Open centre with P - T - RV (Standard circuits: parallel)



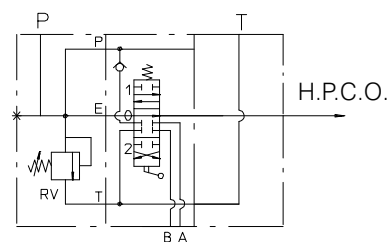
Ø D	Code
	HDM25/1
M18X1.5	K01
1/2" BSP Std.	K02 200.9441.3001.0
3/4" BSP	K03 200.9441.4001.0
SAE10	K04
SAE12	K05



6.4.2 Power beyond with P - T - RV - H.P.C.O. (Standard circuits: parallel)

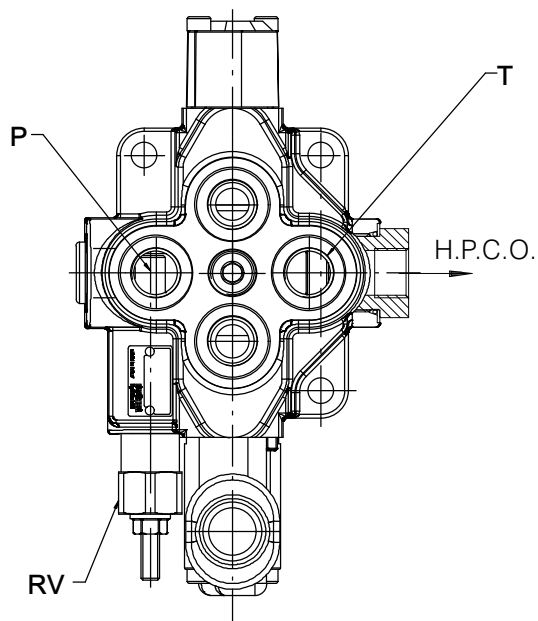


Ø D	Type/Code
	HDM25/1
M18X1.5	K21
1/2" BSP Std.	K22 200.9441.3002.0
3/4" BSP	K23 200.9441.4003.0
SAE10	K24
SAE12	K25

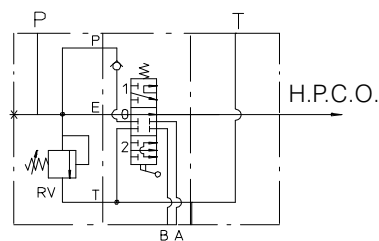


Note: Body codes consist of: machined casting, seals, plugs and check valve only. Not to be used for complete valve order.
For availability of -K- bodies without code please contact our Sales Department.

6.4.3 Power beyond with P - T - RV - H.P.C.O.
(Optional circuits: series and tandem)

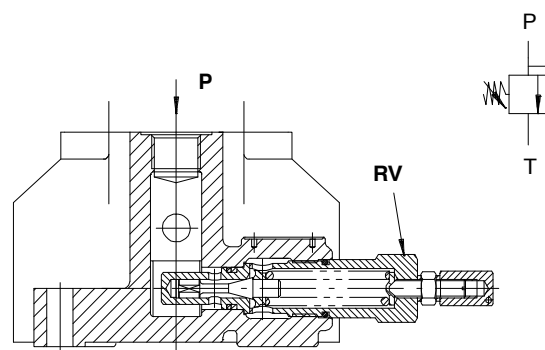
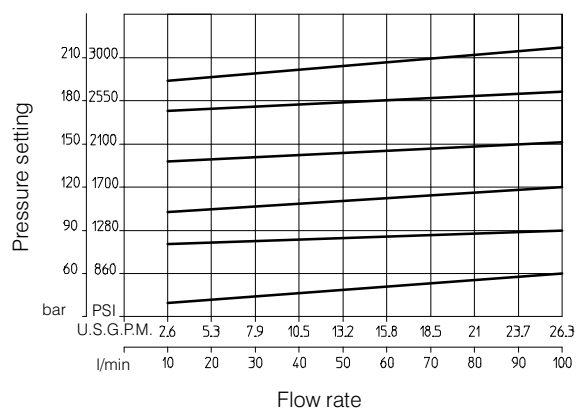


Ø D	Type/Code
	Standard
M18X1.5	K51
1/2" BSP std.	K52
3/4" BSP	K53
SAE10	K54
SAE12	K55

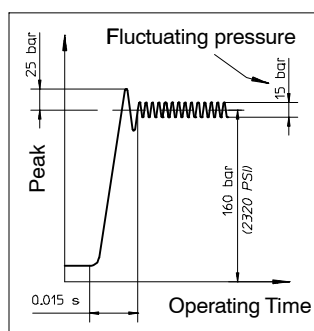


Note: Body codes consist of: machined casting, seals, plugs and check valve only. Not to be used for complete valve order.
For availability of -K- bodies without code please contact our Sales Department.

6.5 Adjustable direct acting Relief Valve RV



Relief valve set at 30 l/min (8 U.S.G.P.M.)



Pressure set range bar (PSI)	Std. setting bar (PSI)	Setting Code	Spring colour
30 - 95 (400 - 1300)	60 (860)	06	Yellow (YE)
96 - 210 (1300 - 3000)	150 (2100)	15	Green (GR)
* 211 - 300 (3000 - 4200)	260 (3700)	26	Blue (BL)
* 301 - 400 (4200 - 5700)	320 (4600)	32	Red (RD)

* The maximum operating pressure for each valve series is indicated in the "Technical specification" at the first page of each valve section.

6.6 Spool charts

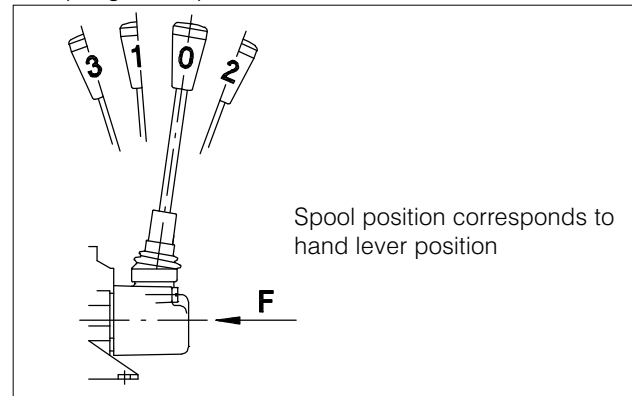
Spool scheme	Spool features	Type
	4 way - 3 position A/B: blocked E: open by pass	A As*
	4 way - 3 position A/B: blocked E: closed	B
	4 way - 3 position A/B to tank in neutral E: open by pass	C *Cs
	3 way - 3 position B: blocked E: open by pass	G *Gs
	4 way - 3 position B: blocked A: to tank in neutral	L

	4 way - 3 position with differential spool in 2 nd position	**R
	3 way - 3 position A: blocked E: open by pass	S *Ss
	4 way - 3 position series connection	X
	4 way - 3 position A: to tank in neutral	Xc
	4 way - 4 position 4 th float position	Z
** : special body required		
* : Hight metering spool (max. flow suggested 50 l/min)		

6.7 Spool positioners

Spool position				Stroke	Type	Code
3	1	0	2	mm		
	○	✱	○	7.5	01	200.9686.1002.0
	●	●	○	7.5	02	200.9686.3002.0
	●	●	●	7.5	03	200.9686.2002.0
		●	●	7.5	05	200.9686.2004.0
	✱		○	15	06	200.9686.1004.0
	●	●		7.5	07	200.9686.2007.0
	○	✱		7.5	09	200.9686.1011.0
	●		●	15	11	200.9686.2009.0
	○	●	●	7.5	19	200.9686.3008.0
	○	✱	○	7.5	24	200.9686.5013.0
	○	✱	○	7.5	31	200.9686.1054.0
	○	✱	○	7.5	46	200.9686.1076.0
	○	✱	○	7.5	47	200.9686.1078.0
	○	✱	○	7.5	50	200.9686.5020.0
	○	✱	○	7.5	56	200.9686.1086.0
	○	✱	○	7.5	83	200.9686.1096.0
●	○	✱	○	5 - 7 - 7	128	200.9686.4009.0

- * Initial hand lever position
- Hand lever in detent position
- Spring return position of hand lever

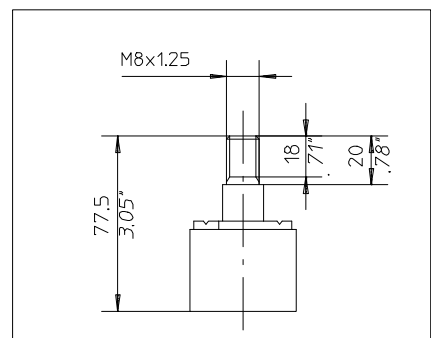
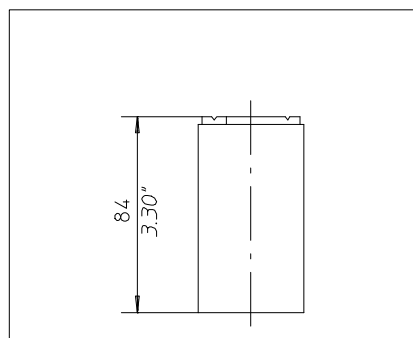
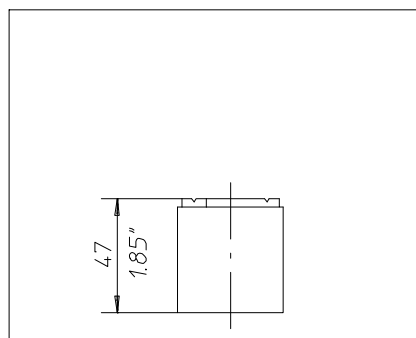


Force (F) for spool movement

F (N)	Spool position control
350	01 (standard)
280	56

Note: consult factory for different configurations.

6.8 Spool positioner dimensions

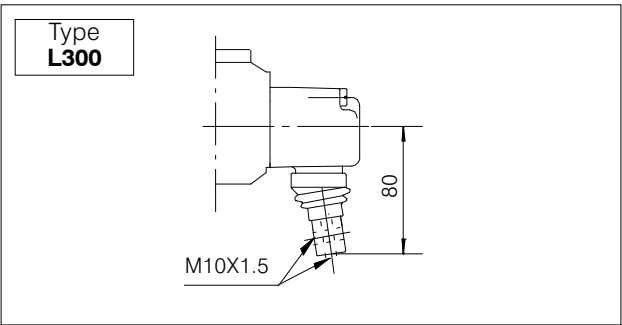
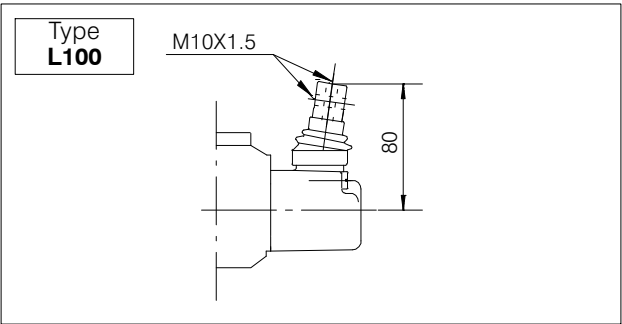
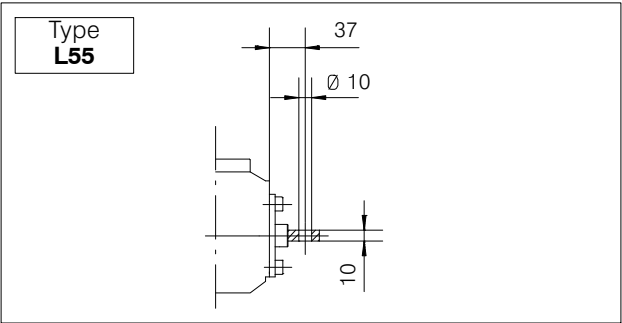


Spool positioners 01 – 02 – 03 – 05 – 06 07 – 09 – 11 – 19 – 56	Spool positioner (Z spool type) 128	Spool positioner 83
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Microswitch control

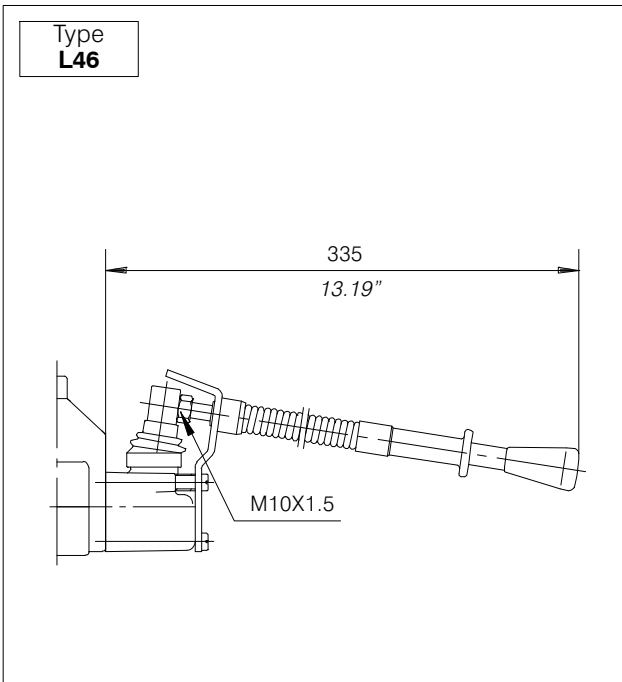
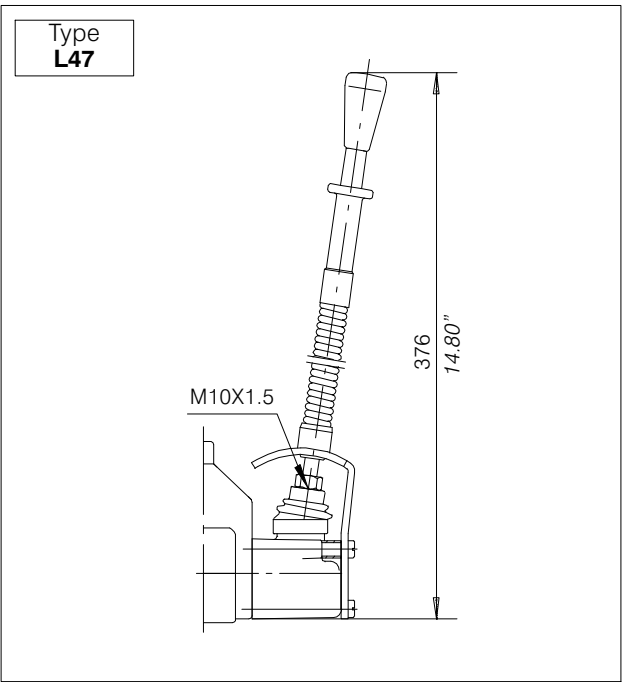
31	Microswitch is operated when the spool is in pos.1		
46	Microswitch is operated when the spool is in pos.2		
47	Microswitch is operated when the spool is in pos.1 and 2		

6.9 Lever styles

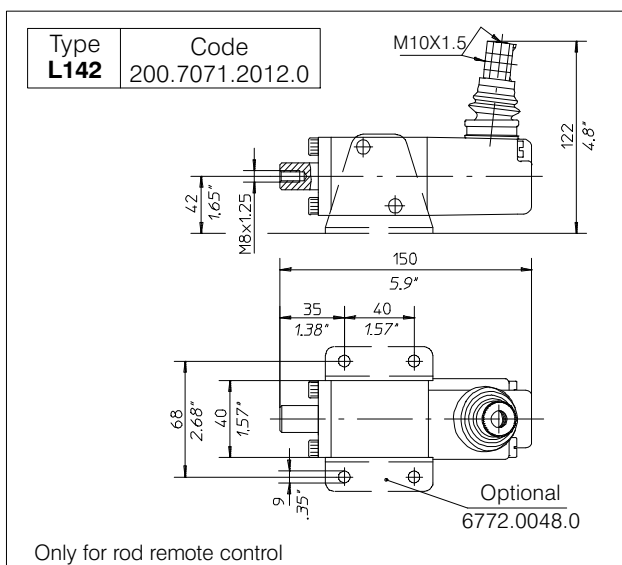
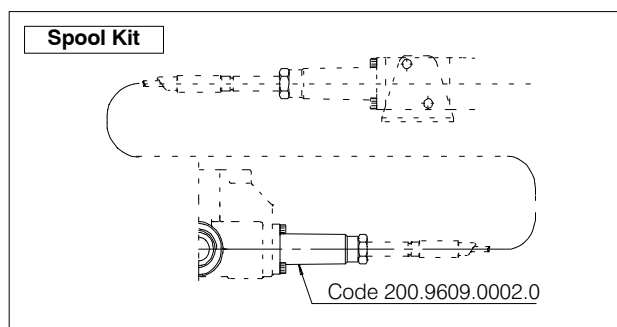
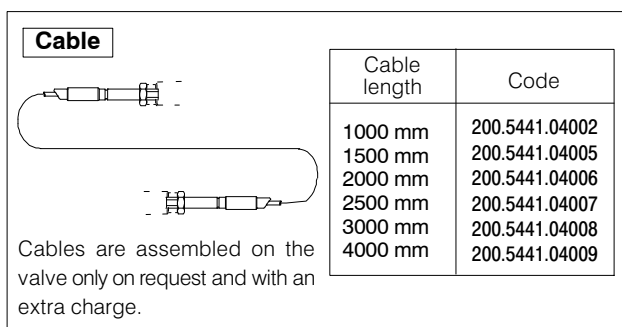
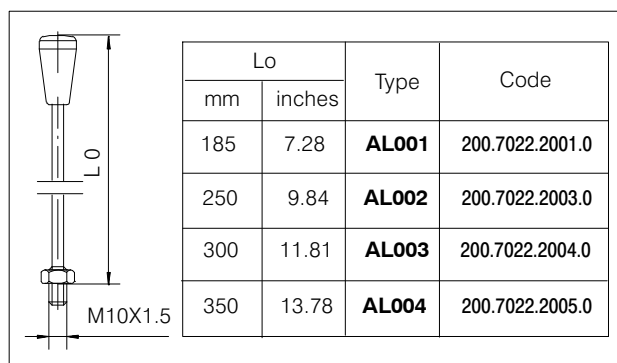
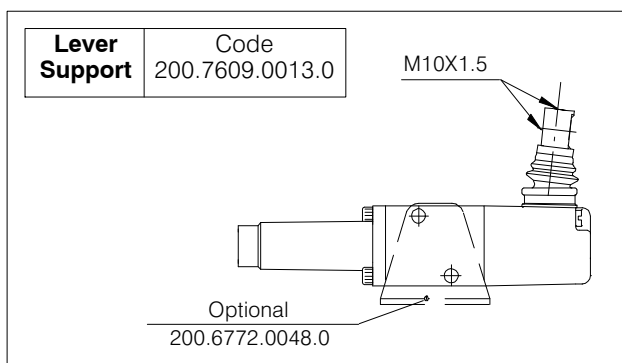


Lo		AL	Code
inches	mm		
7.28	185	001	200.7022.2001.0
9.84	250	002	200.7022.2003.0
11.81	300	003	200.7022.2004.0
13.78	350	004	200.7022.2005.0

6.9.1 Safety levers



6.9.2 Remote cable control



6.10 Hydraulic-Pneumatic controls ON-OFF

Type	Code
HP 24	200.9686.5013.0

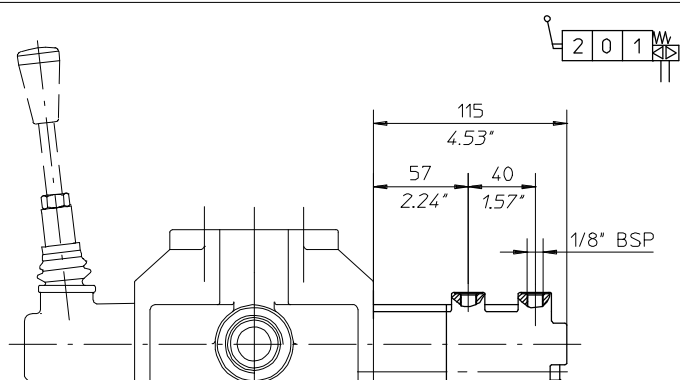
Operating conditions

Hydraulic

Pressure range (bar): Min. 6 - Max. 15
(PSI): Min. 85 - Max. 215

Pneumatic

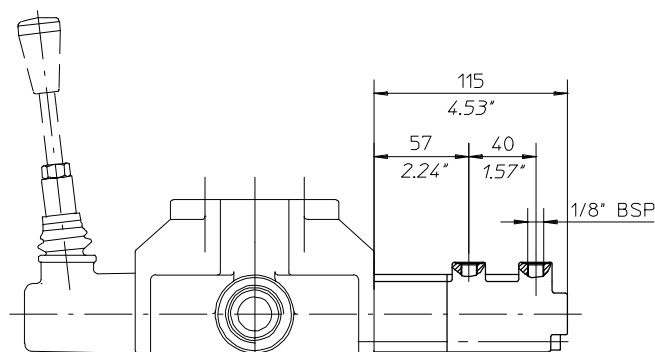
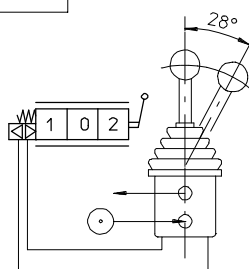
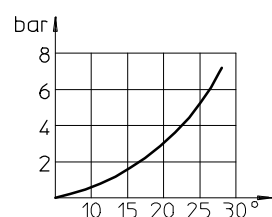
Pressure range (bar): Min. 6 - Max. 10
(PSI): Min. 85 - Max. 145



6.11 Pneumatic controls

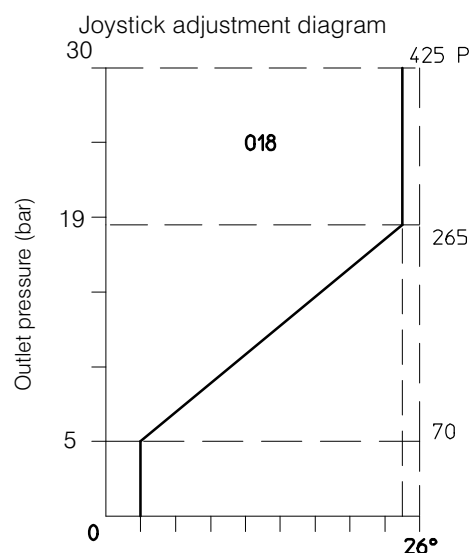
6.11.1 Pneumatic proportional control

Type	Code
PP 151	200.9686.5010.0

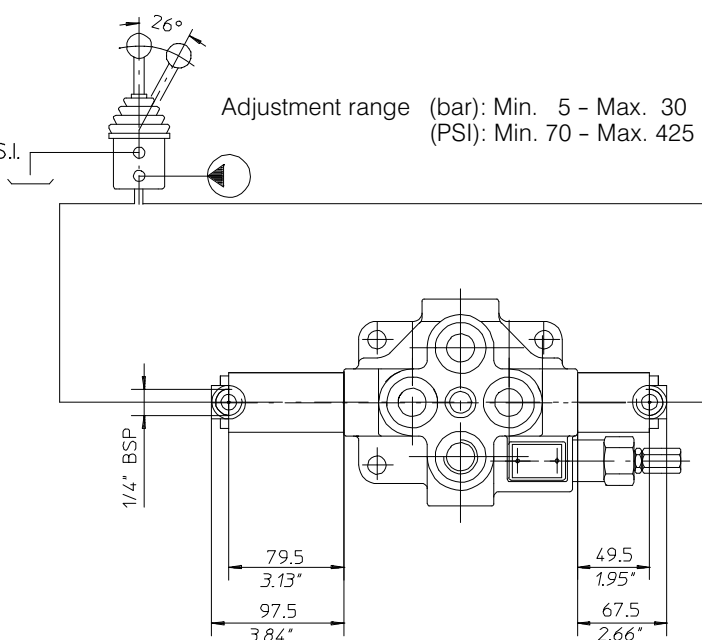


6.12 Hydraulic proportional control

Type	Code
HP 50	200.9686.5020.0

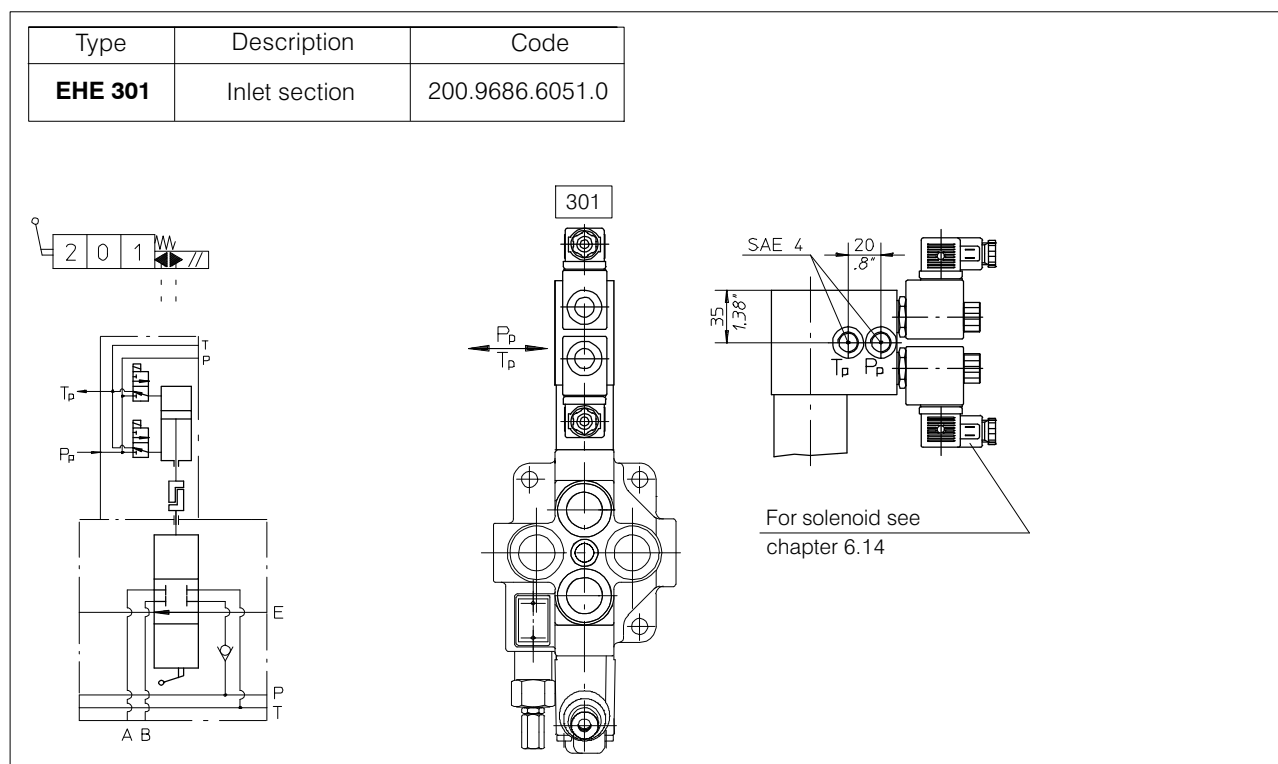


Adjustment range (bar): Min. 5 - Max. 30
(PSI): Min. 70 - Max. 425

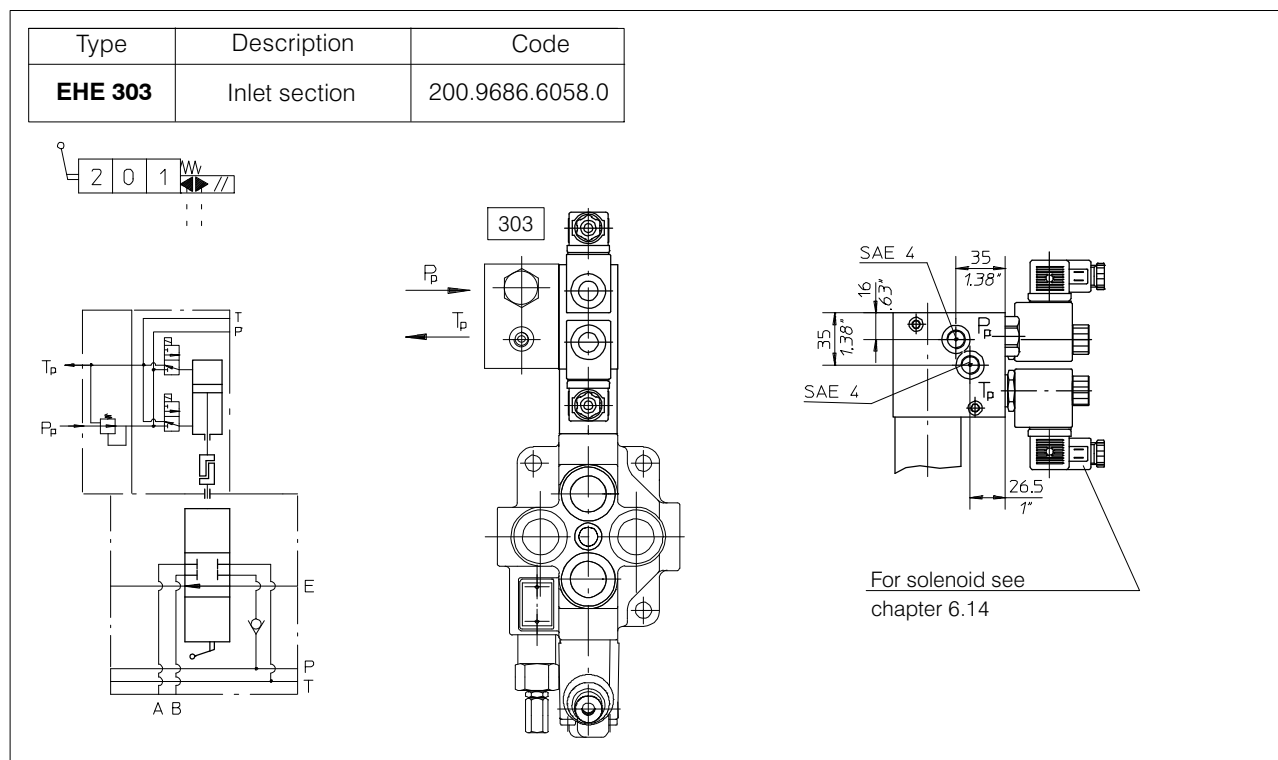


6.13 Electro-hydraulic controls

6.13.1 Electro-hydraulic control external pilot version ON-OFF



6.13.2 Electro-hydraulic control external pilot version ON-OFF with pressure reducing valve on inlet manifold



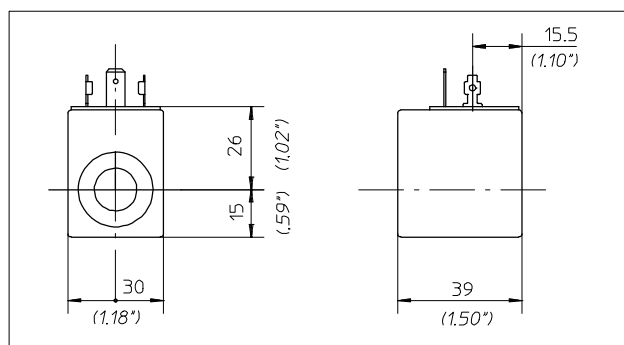
Mechanical and hydraulic features

Pilot pressure with pressure
reducing valve 12 bar (175 PSI)
Pilot flow to each working section: . 1 l/min (0.26 USGPM)
Min. suggested filtration 25 micron
200-P-991210-EN-04/01.2022

Operating oil temperature min. -30°C - max. 90°C
min. -22°F - max 194°F

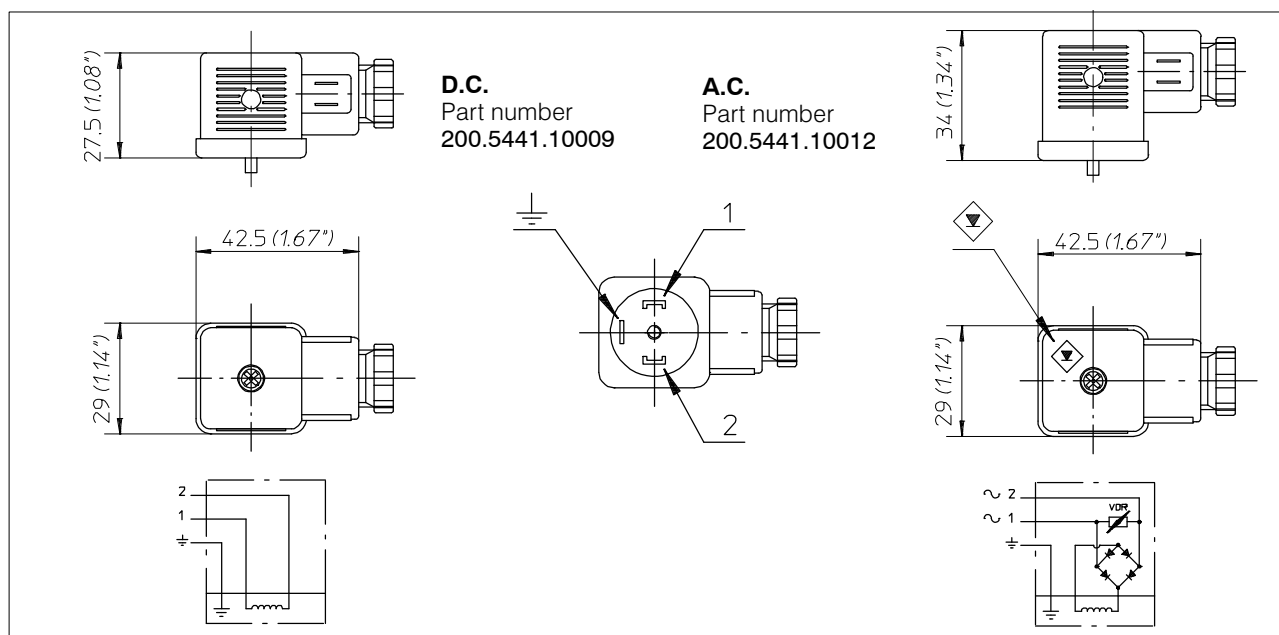
Leakage of pressure reducing
valve (in neutral pos.) 100 ml/min (6.1 in³/min)

6.14 Solenoids for pilot electrovalves EHE



Wire class	F (VDE 0580)
Coil insulation	IP65 (DIN 40050)
Duty rating	ED 100%
Stabilized temperature	70 °C
Voltage tolerance	± 10%

Supply Voltage	Nominal coil voltage	Power (Watt)	Resistance (Ohm)		Current (Ampere)		Coil code
			Ambient temperature	Stabilized temperature	Ambient temperature	Stabilized temperature	
12 V. DC	12 V. DC	18.7	7.7	10.8	1.56	1.11	200.6749.1003.0
24 V. DC	24 V. DC	18.6	31	41.4	0.77	0.58	200.6749.2003.0
24 V. AC	21.6 V. DC	17.3	27	36	0.80	0.60	200.6748.2003.0
110 V. AC	98 V. DC	15.6	630	825	0.157	0.120	200.6748.4003.0
220 V. AC	198 V. DC	15.7	2500	3300	0.08	0.06	200.6748.6003.0



Armour clamp	Pg 9
Ø cable	6 - 8 mm
Diodes	1N 4007 GP
Overvoltage protection	VDR
Connector type	DIN 43650
Number of poles	2 + $\perp$
Supply voltage	max. 220 V
Nom. capacity at contacts	10 Ampere

Max capacity at contacts	16 Ampere
Resistance at contacts	≥ 4 mOhm
Max section of cable	1.5 mm ²
Outer material	Glass fibre reinforced nylon
Protection factor	IP65 (DIN 40050)
Insulation class	C (VDE 0110)
Temperature range	-40° +90°C

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Classification: 430.300.000

200-P-991210-EN-04/01.2022

HDM25

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