

DIRECT OPERATED SOLENOID VALVE

Variants

CRD 04 18 NC ...
18W coil version

Variants

CRD 04 22 NC ...
22W coil version

Variants

CRD 04 NC ...
30W coil version

Flux	Emergency Force (F)
2 → 1	10N
1 → 2	10 + (2,5 x p) N

p = used pressure (bar)

00012025 Spare seals kit

The direct acting, normally closed 2-way 2 position bi-directional electric control valve releases pressure and enables fluid to flow through the valve in both directions.

The bi-directional tapered poppet is in tempered and ground steel.

The valves work with DC coils whereas RAC coils with a connector with incorporated rectifier must be used for AC applications.

CRD0418NC - CRD0422NC: nickel-plated steel sleeve.

CRD04NC: phosphate-coating steel sleeve.

FEATURES

Max. pressure - see note (*)	CRD 04 22 NC = 300 bar CRD 04 18 NC = 210 bar CRD 04 NC = 250 bar
Max. Flow	CRD 04 22 NC /18 NC = 15 l/min CRD 04 NC = 30 l/min
Max. excitation frequency	2 Hz
Duty cycle	100% ED
Max. Leakage (0 ÷ 20 drops/min)	0 ÷ 1 cm ³ /min
Hydraulic fluids	DIN 51524 Mineral oils
Fluid viscosity	10 ÷ 500 mm ² /s
Fluid temperature	-25°C ÷ 75°C
Ambient temperature	-25°C ÷ 60°C
Max. contamin. level class with filter	ISO 4406:1999 - class 19/17/14
Cartridge filter	280µm
Type of protection (in relation to the connection used)	IP65
Weight (with coil)	CRD 04 18 NC = 0.27 kg CRD 04 22 NC = 0.35 kg CRD 04 NC = 0.63 kg
Cartridge tightening torque	25 ÷ 30 Nm
Coil ring nut tightening torque Emergency tightening torque	7 Nm
Cavity standard "A" (3/4 - 16 UNF)	CD018006 (See section 15)
Cavity with reduction "B" (3/4 - 16 UNF)	CD018012 (See section 15)

HYDRAULIC SYMBOLS

Reduction for cavity type "B"

V89B30000 Spare code

*** Max. pressure with reduction:**
Unidirectional 2 → 1 = 300 bar
Bidirectional 2 → 1 and 1 → 2 = 210 bar

Connector to be ordered separately, see sect. 18

IE/CRD04/003/2014

CAT: BFP/VCAR Page: 76

SHEET: 1/2

SOLENOID VALVES - 2-WAY

8

HOME

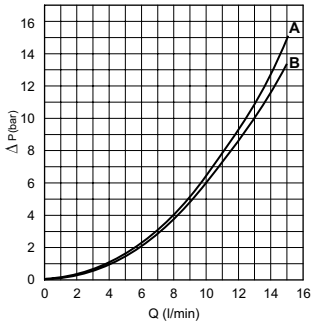
INFO

VALVES INDEX

PRESSURE DROPS

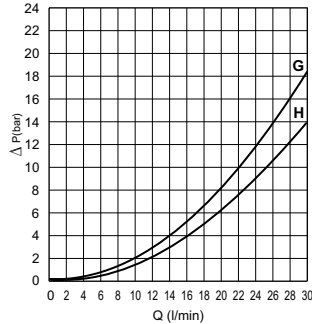
18W / 22W

A = 2 → 1
B = 1 → 2



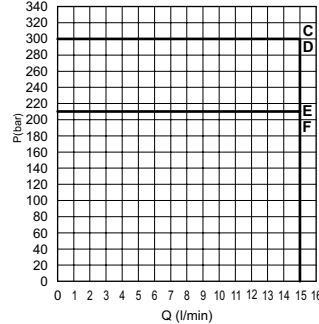
30W

G = 2 → 1
H = 1 → 2



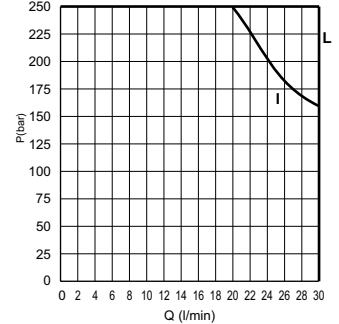
22W

C = 2 → 1
D = 1 → 2



18W

E = 2 → 1
F = 1 → 2



The tests were carried out with the solenoids at operating temperature, with a supply voltage 10% below nominal value and with a 40°C fluid temperature. The fluid used is a mineral oil with viscosity of 46 mm²/s at 40°C.

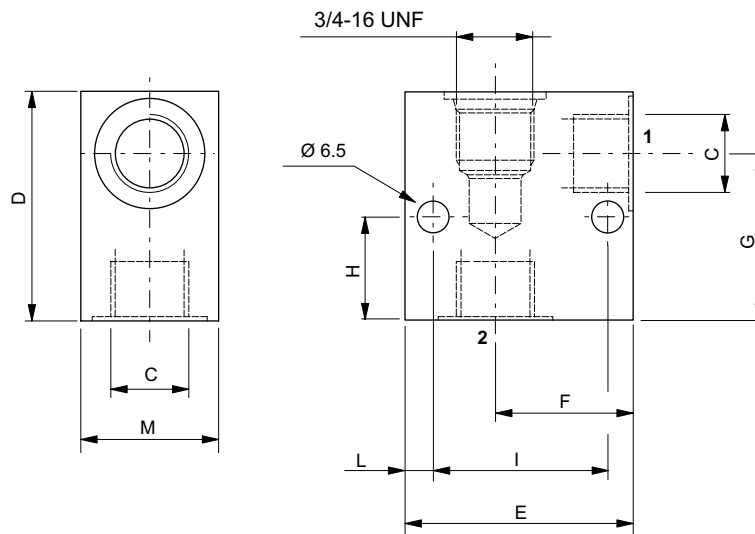
ORDERING CODE

	CRD	04	**	NC	*	*	*	**	*																
	Series	Size		Version				Variants																	
CRD = Direct operated solenoid valve		04 = 3/4 - 16 UNF						2 = Serial No. CRD 04 18 NC.. CRD 04 22 NC.. CRD 04 00 NC.. 1 = Serial No. CRD 04 NC..																	
			Coil					00 = No variants E1 = Manual emergency (30W) P1 = Rotary emergency (30W) P3 = Rotary emergency (18W/22W) P4 = Push button Emergency with removable protection E9 = Push button Emergency direct control FY = Emergency P3 + FH (18W/22W) FH = Cartridge filter PJ = FH + P4 emergency FK = With flying leads 600 mm (1) AJ = AMP Junior connection (2) CX = Deutsch connection with bidirectional diode (3)																	
				Version																					
NC = Normally closed																									
				Seat size																					
A = Standard - Ø 12.7 mm B = With reduction - Ø 15.9 mm																									
E = With emergency				Version																					
Omit for 30W version (D12)																									
								Voltage																	
								<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">DC 18W/22W (C30-C36)</th> <th style="width: 50%;">DC 30W (D12)</th> </tr> <tr> <td>L = 12 VDC</td> <td>L = 12 VDC</td> </tr> <tr> <td>M = 24 VDC</td> <td>M = 24 VDC</td> </tr> <tr> <td>N = 48 VDC</td> <td>W = Without coil (7)</td> </tr> <tr> <td>2 = 21.6 VDC RAC (4)</td> <td></td> </tr> <tr> <td>Z = 102 VDC RAC (5)</td> <td></td> </tr> <tr> <td>X = 205 VDC RAC (6)</td> <td></td> </tr> <tr> <td>W = Without coil (7)</td> <td></td> </tr> </table>	DC 18W/22W (C30-C36)	DC 30W (D12)	L = 12 VDC	L = 12 VDC	M = 24 VDC	M = 24 VDC	N = 48 VDC	W = Without coil (7)	2 = 21.6 VDC RAC (4)		Z = 102 VDC RAC (5)		X = 205 VDC RAC (6)		W = Without coil (7)		
DC 18W/22W (C30-C36)	DC 30W (D12)																								
L = 12 VDC	L = 12 VDC																								
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Z = 102 VDC RAC (5)																									
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W = Without coil (7)																									

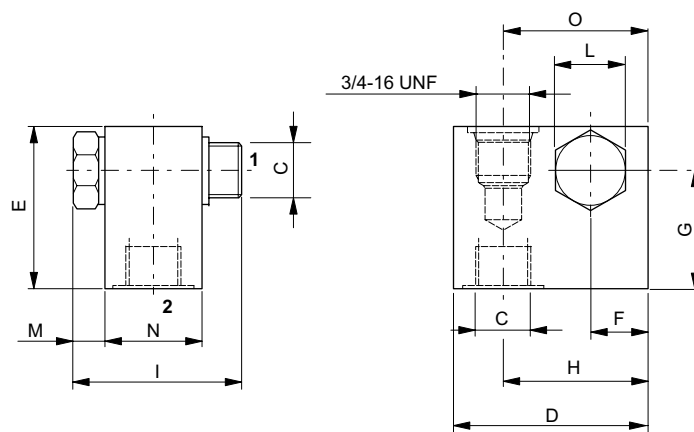
Connector to be ordered separately, see sect. 18

Coils technical data, see sect. 17

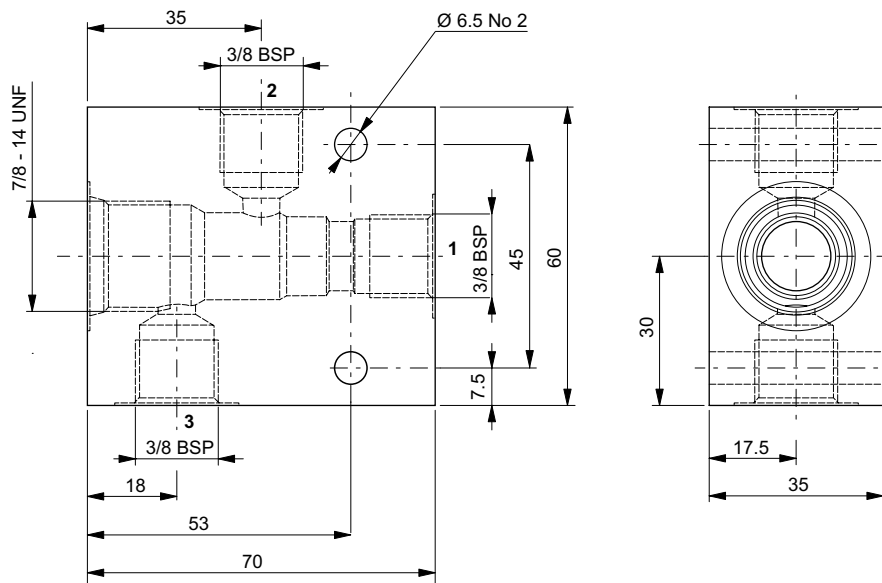
(1) Only voltages 12 VDC - 24 VDC and coils 18W/22W (2) Only voltages 12 VDC - 24 VDC and coil 22W (3) Only voltages 12 VDC - 24 VDC and coil 18W (4) With rectifier: 24 VAC/50-60Hz	(5) With rectifier: 115 VAC/50Hz - 120 VAC/60Hz (6) With rectifier: 230 VAC/50Hz - 240 VAC/60Hz (7) Performance are guaranteed only using valves completed with BFP coil
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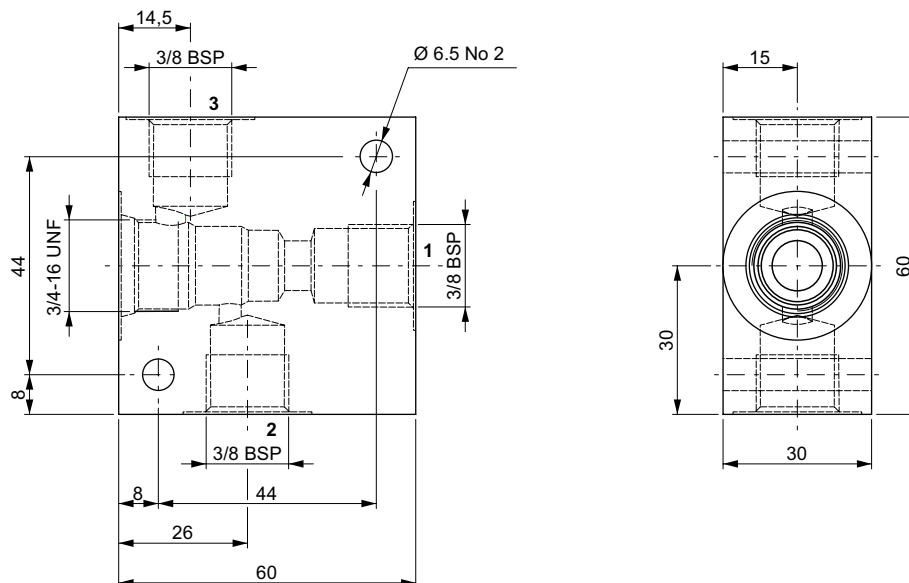
Code	C	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	L (mm)	M (mm)	Material	Cavity
F07100013	1/4 BSP	46	50	30,5	33	18	38	6	30	Alluminio EN AW 2011	CD018006
M18400061	3/8 BSP	55	60	38	41,25	25	45	7,5	30		
M18400071	1/2 BSP	60	60	35	41	6	48	6	40		



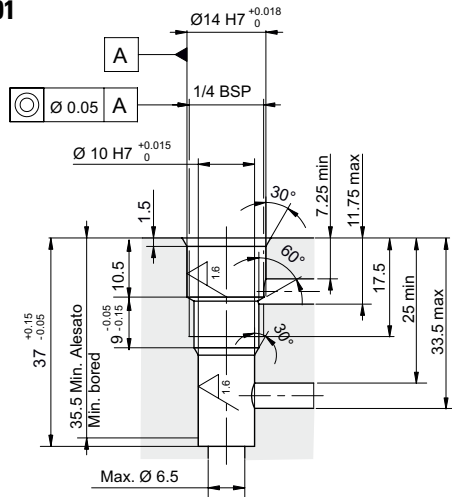
Code	C	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	L (mm)	M (mm)	N (mm)	O (mm)	Material	Cavity
17030532	3/8 BSP	50	50	16	32	35	51	22	9	30	34.5	Alluminium EN AW 2011	CD018006
V10500034	1/4 BSP	40	46	11	31	26	49	19	8	30	26		



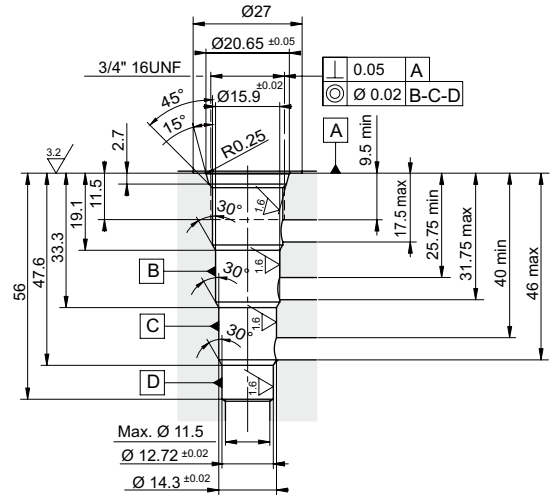
Code	Material	Cavity
M10850319	Alluminium - EN AW 2011	CD019006



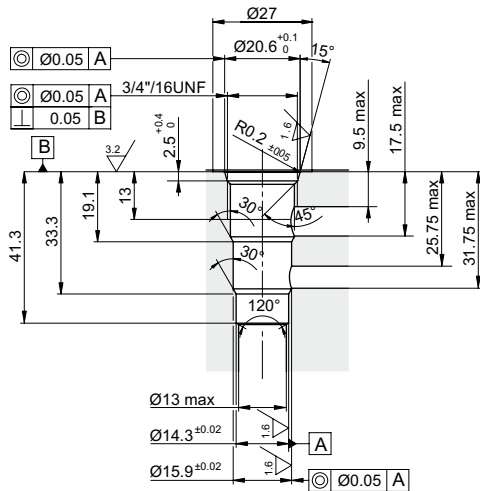
Code	Material	Cavity
M10850206	Alluminium - EN AW 2011	CD018005

CA012001
1/4 BSP

Plugs compatibility:

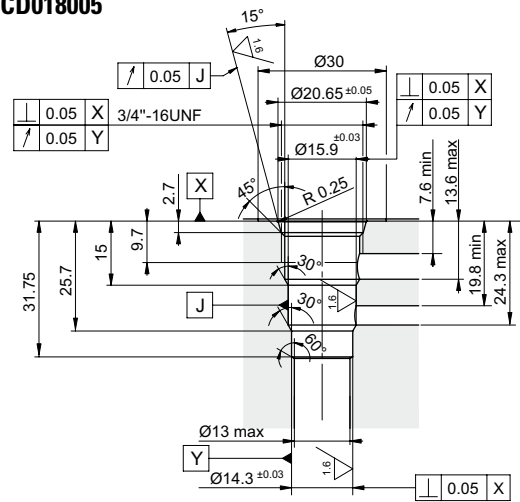
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CD018001
3/4 16UNF

Plugs compatibility:

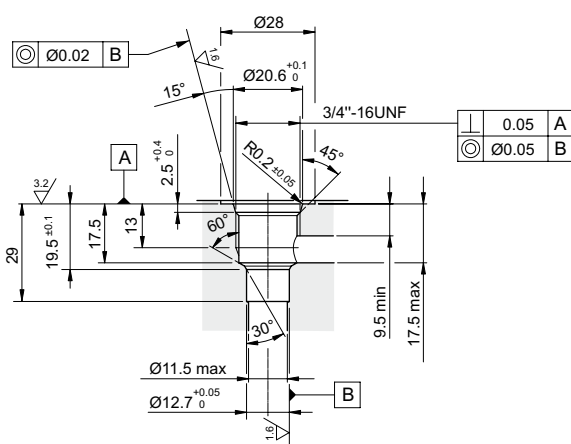
R78150114	R78150109	R78150111		
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CD018003
3/4 16UNF

Plugs compatibility:

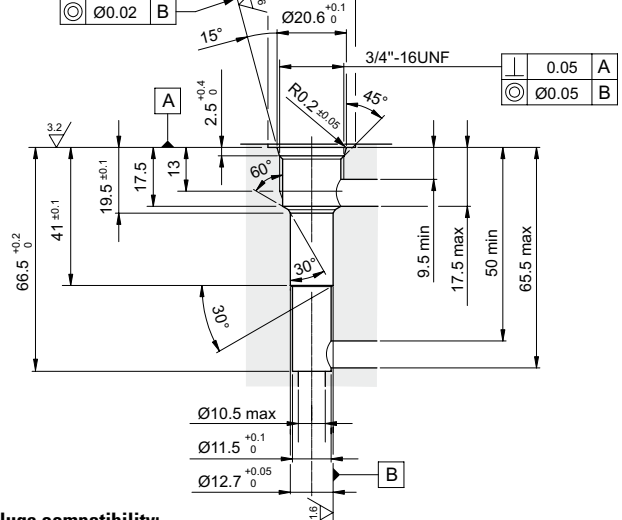
20001700	20001900			
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CD018005
3/4 16UNF

Plugs compatibility:

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CD018006
3/4 16UNF

Plugs compatibility:

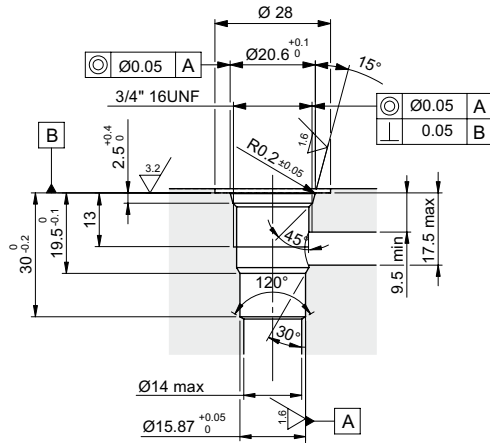
20001900	20001700	20003800	20009400	20018000
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CD018009
3/4 16UNF

Plugs compatibility:

20001900	20001700	20003800	20009400	20018000
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CD018012

3/4 16UNF

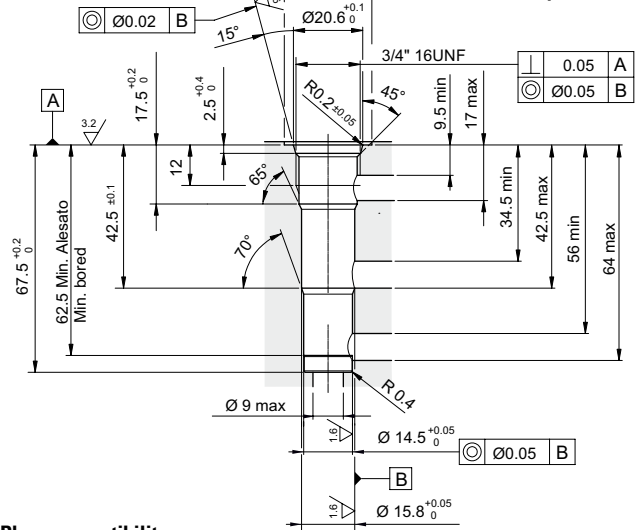


Plugs compatibility:

R78200A19	20001700	20001900		
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CD018013

3/4 16UNF

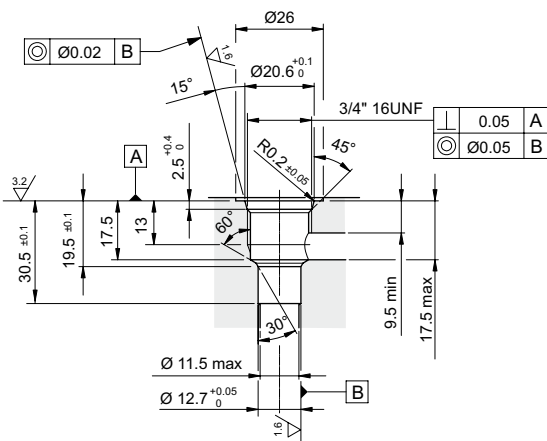


Plugs compatibility:

R78150100				
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CD018014

3/4 16UNF

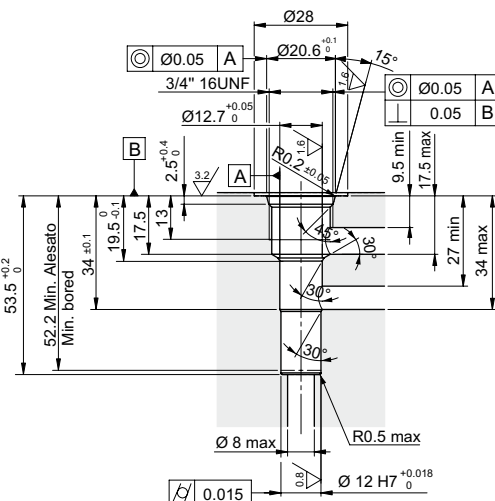


Plugs compatibility:

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CD018015

3/4 16UNF

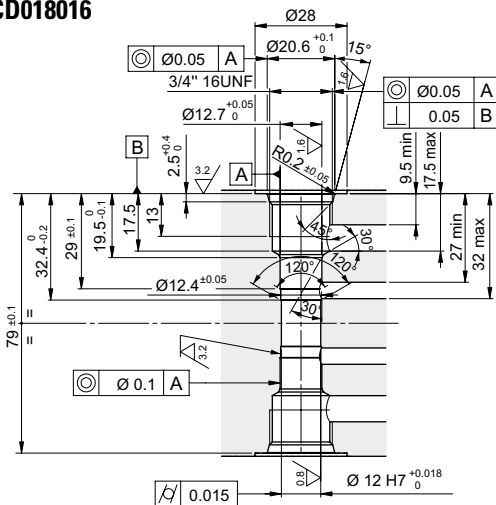


Plugs compatibility:

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CD018016

3/4 16UNF

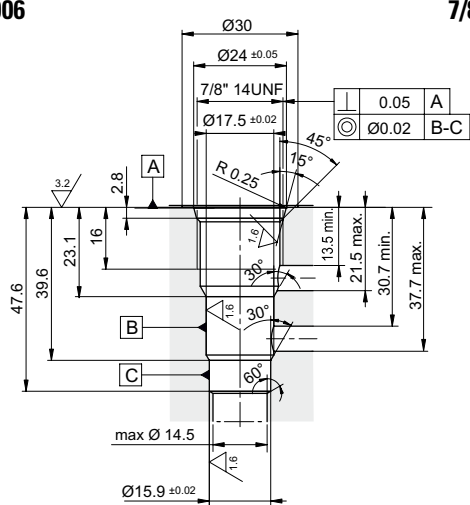


Plugs compatibility:

20018000	20001700	20001900	20003800	20009400
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CD019006

7/8 14UNF

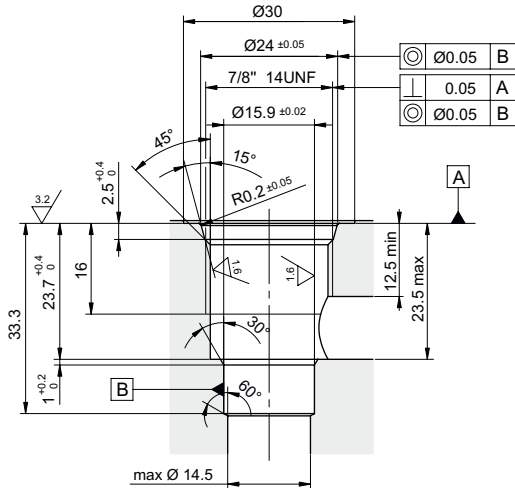


Plugs compatibility:

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CD019007

7/8 14UNF

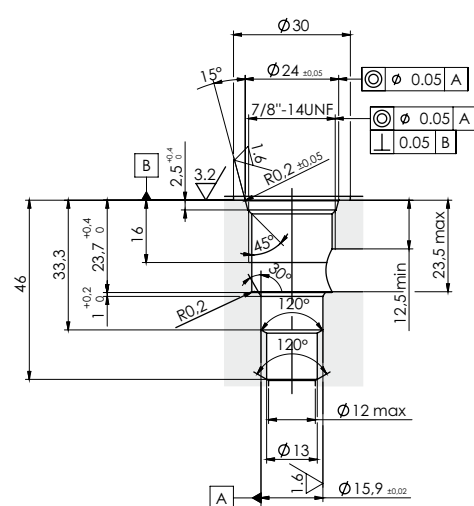


Plugs compatibility:

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CD019011

7/8 14UNF

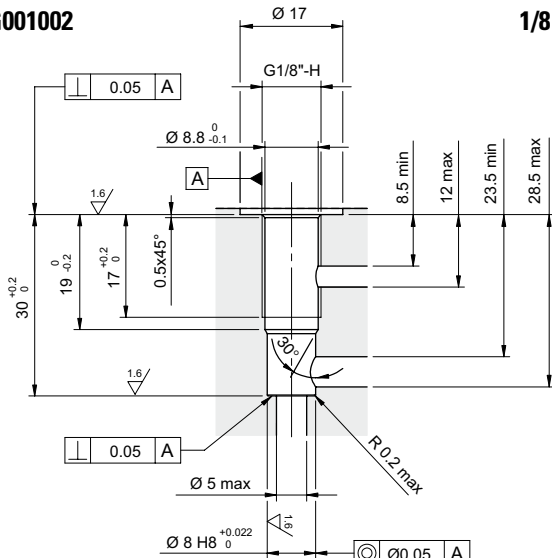


Plugs compatibility:

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CG001002

1/8 BSP

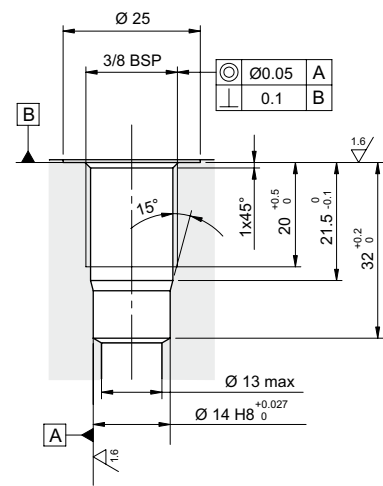


Plugs compatibility:

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CG003004

3/8 BSP

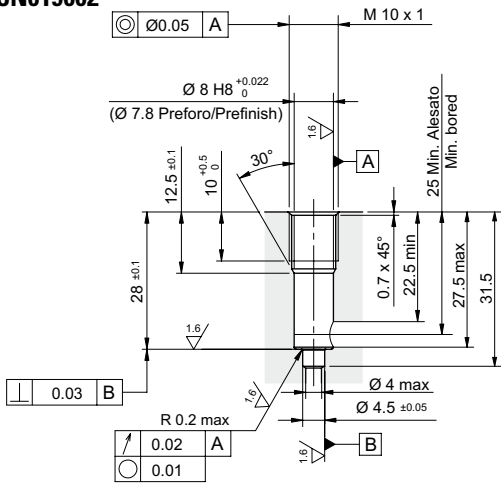


Plugs compatibility:

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CN019002

M10X1

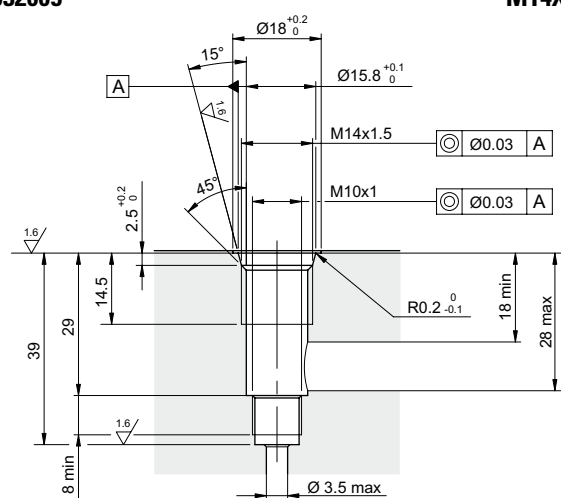


Plugs compatibility:

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CN032005

M14X1.5



Plugs compatibility:

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CN047002 **M22X1.5**

0.05	A
Ø0.02	B-C

Max. Ø 10.5
Ø17 H8 ^{+0.027} ₀
Ø19 H8 ^{+0.033} ₀

Plugs compatibility:

R78050014			
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CN047003 **M22X1.5**

0.05	A
Ø0.02	B

Max Ø16.5
Ø17.5 H8 ^{+0.027} ₀

Plugs compatibility:

R78400A17			
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CN051001 **M24X2**

0.05	A
Ø0.02	B

Max. Ø13

Plugs compatibility:

R78300564			
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CN059001 **M27X1.5**

Ø0.03	A
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Ø12 max

Plugs compatibility:

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CN070001 **M33X2**

0.01	A
Ø0.02	B

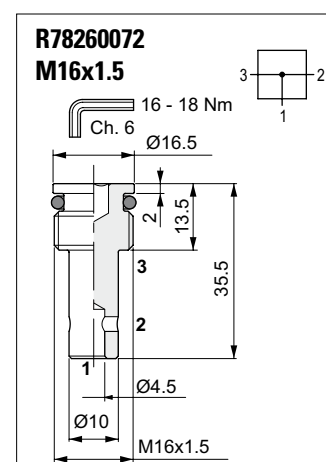
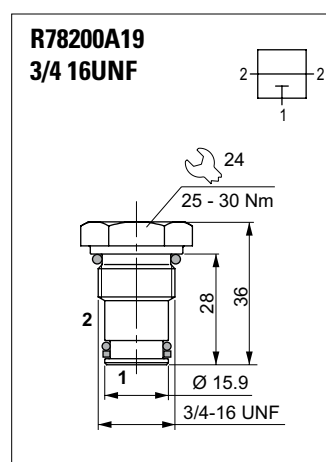
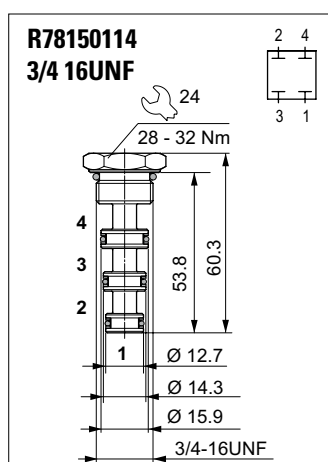
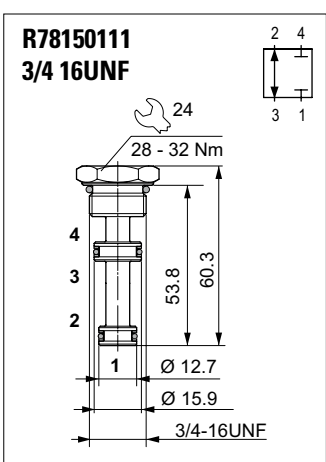
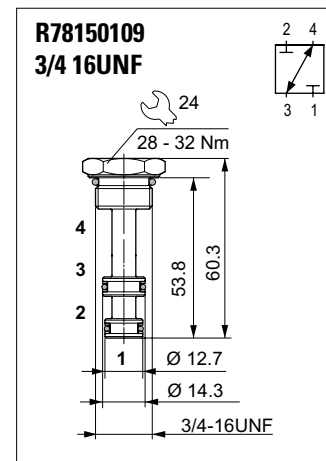
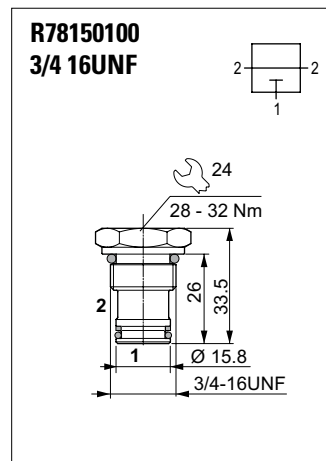
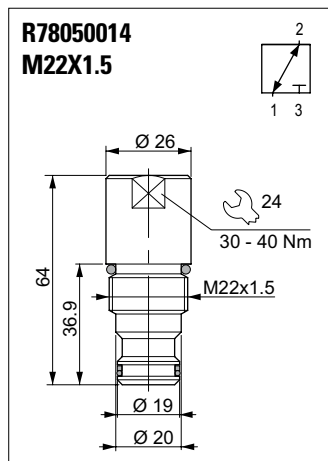
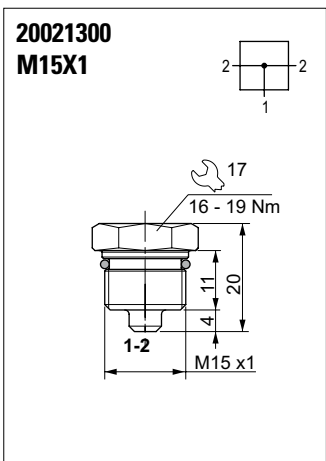
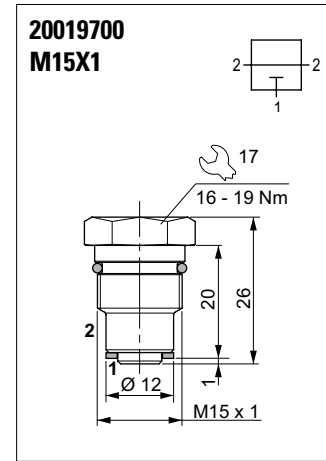
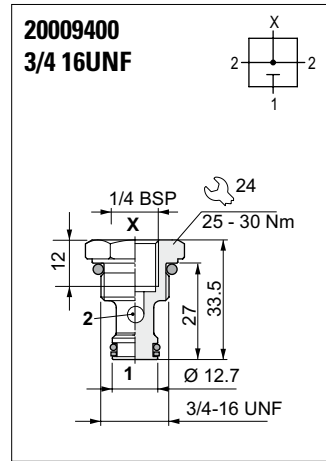
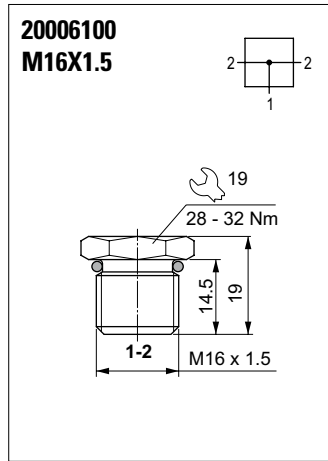
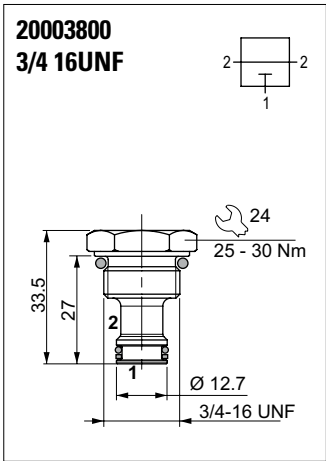
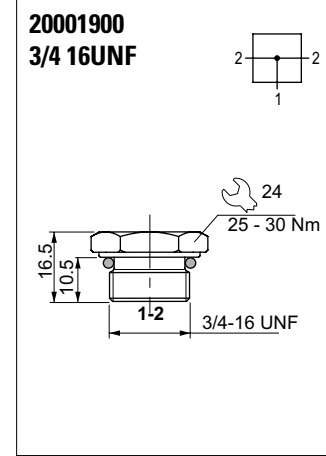
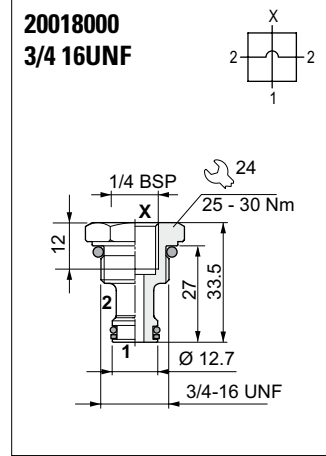
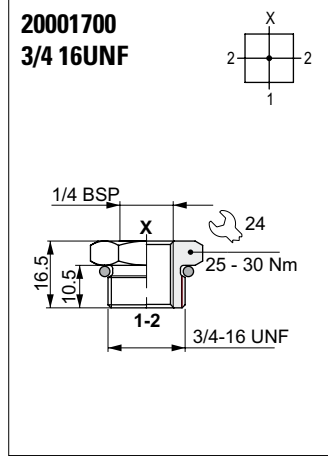
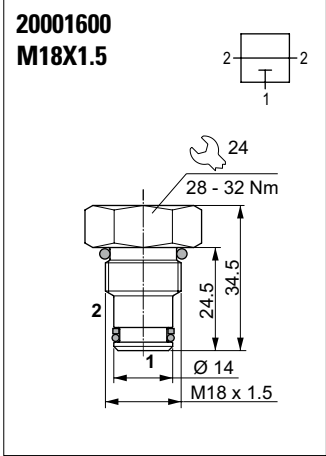
MAX. Ø20

Plugs compatibility:

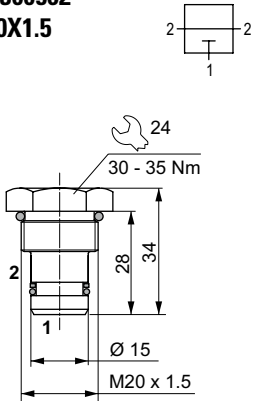
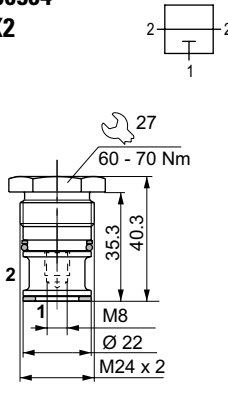
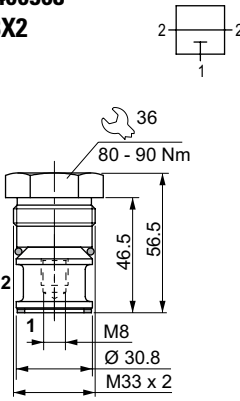
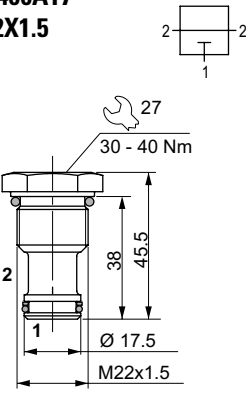
R78400568			
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Plugs compatibility:

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STANDARD PLUGS

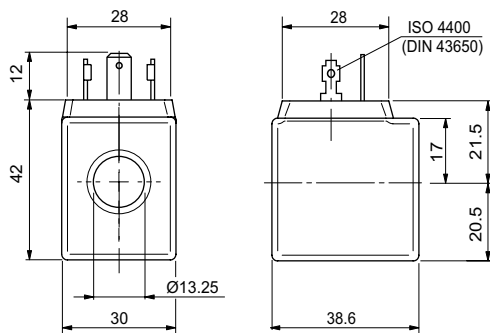
<p>R78300562 M20X1.5</p> 	<p>R78300564 M24X2</p> 	<p>R78400568 M33X2</p> 	<p>R78400A17 M22X1.5</p> 

C30 - COILS 18W

Type of protection	IP 65
Number of cycle	18000/h
Supply tolerance	±10%
Ambient temperature	-30°C ÷ 60°C

Duty cycle	100% ED
Insulation class wire	H
Weight	0.141 kg

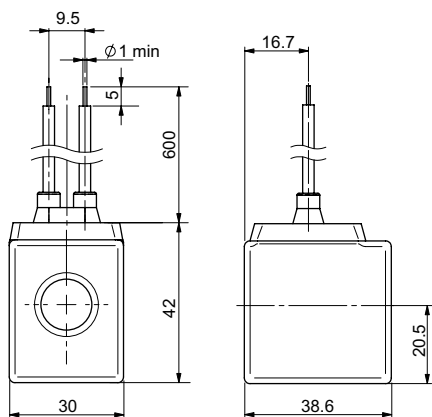
Standard (Hirschmann ISO 4400 DIN43650)



Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	135 °C	18 W	7.7 Ω	M14000001
M	24 VDC	135 °C	18 W	31 Ω	M14000002
N	48 VDC	135 °C	18 W	116 Ω	M14000003
2	21.6 VDC	135 °C	18 W	27 Ω	M14000009
Z	102 VDC (3)	120 °C	18 W	578 Ω	M14000006
X	205 VDC (3)	120 °C	18 W	2627 Ω	M14000007
A	24 VAC/50 Hz	125 °C	35 VA	5.3 Ω	M14001002
J	115 VAC/50 Hz (3)	125 °C	35 VA	108 Ω	M14001004
I	230 VAC/50 Hz (3)	125 °C	35 VA	438 Ω	M14001005
F	24 VAC/60 Hz	125 °C	35 VA	3.8 Ω	M14001012
C	110 VAC/60 Hz (3)	125 °C	35 VA	92 Ω	M14001014
D	220 VAC/60 Hz (3)	125 °C	35 VA	375 Ω	M14001015

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C

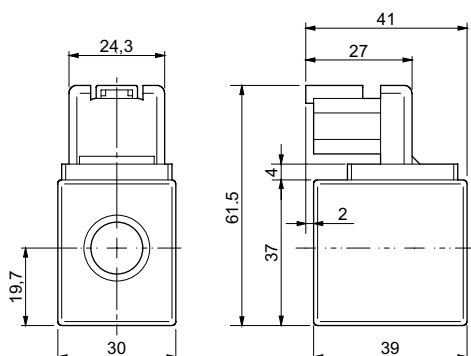
(3) The european low voltage directive is applied to electronical equipments used at a nominal voltages between 50 and 1000 VAC or 75 and 1500 VDC. In conformity with the low directive each part of the manifold or the subplate on which the valve is mounted should be connected to a protective earth with a resistance less than 0.1 ohms.



With wires (variant FK)

Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	135 °C	18 W	7.7 Ω	M14000101
M	24 VDC	135 °C	18 W	31 Ω	M14000102

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C



DEUTSCH and bidirectional integrated diode (variant CX)

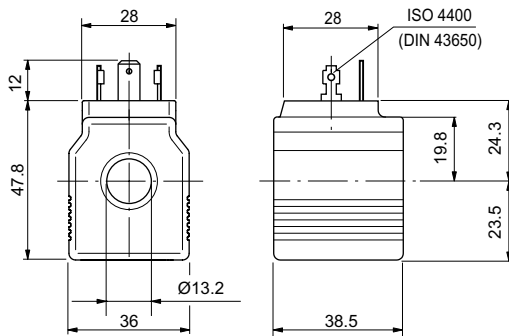
Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	135 °C	18 W	7.7 Ω	M14760001
M	24 VDC	135 °C	18 W	31 Ω	M14760002

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C

C36 - COILS 22W

Type of protection	IP 65
Number of cycle	18000/h
Supply tolerance	±10%
Ambient temperature	-30°C ÷ 60°C

Duty cycle	100% ED
Insulation class wire	H
Weight	0.2 kg

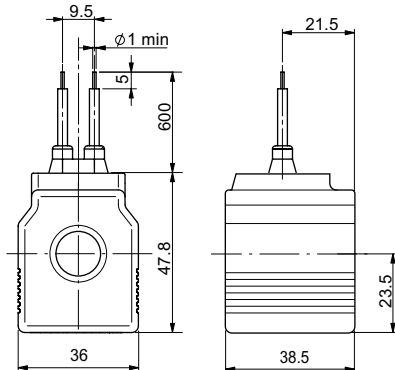


Standard (Hirschmann ISO 4400 DIN43650)

Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	135 °C	22 W	6.3 Ω	M14040001
4	14 VDC	135 °C	22 W	8.9 Ω	M14040009
M	24 VDC	135 °C	22 W	25.6 Ω	M14040002
V	28 VDC	135 °C	22 W	32.8 Ω	M14040008
N	48 VDC	135 °C	22 W	102 Ω	M14040003
2	21.6 VDC	135 °C	22 W	20.2 Ω	M14040000
Z	102 VDC (3)	135 °C	22 W	467.85 Ω	M14040006
X	205 VDC (3)	135 °C	22 W	1954 Ω	M14040007

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C

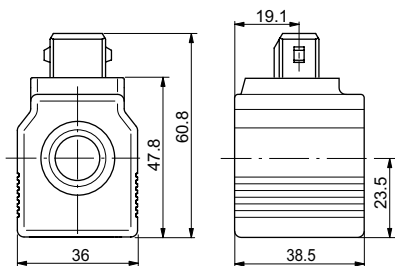
(3) The european low voltage directive is applied to electronical equipments used at a nominal voltages between 50 and 1000 VAC or 75 and 1500 VDC. In conformity with the low directive each part of the manifold or the subplate on which the valve is mounted should be connected to a protective earth with a resistance less than 0.1 ohms.



With wires (variant FK)

Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	135 °C	22 W	6.3 Ω	M14040101
4	14 VDC	135 °C	22 W	8.9 Ω	M14040109
M	24 VDC	135 °C	22 W	25.6 Ω	M14040102
V	28 VDC	135 °C	22 W	32.8 Ω	M14040108

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C



AMP Junior (variant AJ)

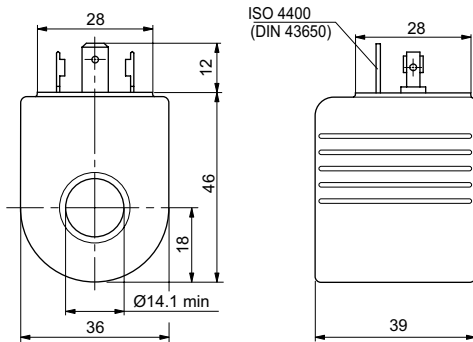
Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	135 °C	22 W	6.3 Ω	M14730001
M	24 VDC	135 °C	22 W	25.6 Ω	M14730002

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C

A09 - COILS 27W

Type of protection	IP 65
Number of cycle	18000/h
Supply tolerance	±10%
Ambient temperature	-30°C ÷ 60°C

Duty cycle	100% ED
Insulation class wire	H
Weight	0.215 kg

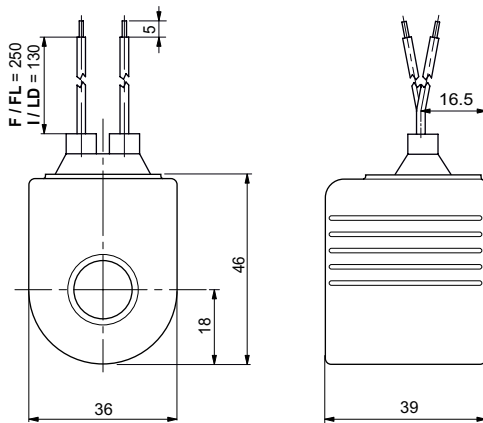


Hirschmann ISO 4400 DIN43650 (connection H)

Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	123 °C	27 W	5.3 Ω	M14310001
M	24 VDC	123 °C	27 W	21.3 Ω	M14310002
N	48 VDC	123 °C	27 W	85.3 Ω	M14310003
Z	102 VDC (3)	123 °C	27 W	392 Ω	M14310008
P	110 VDC (3)	123 °C	27 W	448 Ω	M14310005
X	205 VDC (3)	123 °C	27 W	1577 Ω	M14310009

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C

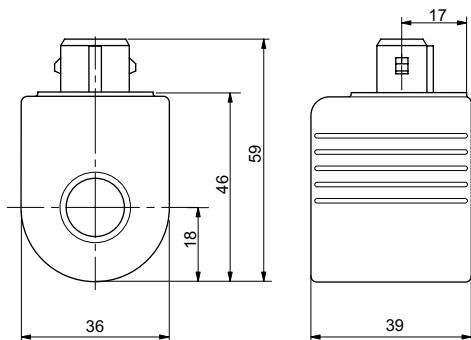
(3) The european low voltage directive is applied to electronical equipments used at a nominal voltages between 50 and 1000 VAC or 75 and 1500 VDC. In conformity with the low directive each part of the manifold or the subplate on which the valve is mounted should be connected to a protective earth with a resistance less than 0.1 ohms.



With wires and integrated bidirectional diode (connection F-I / variants FL-LD)

Bobina		Wires (mm)	Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Codice	Tensione					
L	12 VDC	F = 250	123 °C	27 W	5.3 Ω	M14070011
M	24 VDC	F = 250	123 °C	27 W	21.3 Ω	M14070012
L	12 VDC	I = 130	123 °C	27 W	5.3 Ω	M14330001
M	24 VDC	I = 130	123 °C	27 W	21.3 Ω	M14330002

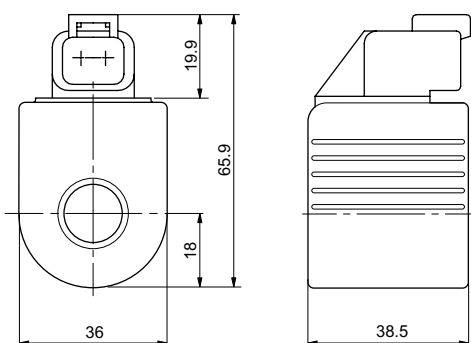
(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C



AMP Junior (connection A / variant AJ)

Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	123 °C	27 W	5.3 Ω	M14320001
M	24 VDC	123 °C	27 W	21.3 Ω	M14320002

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C



Deutsch + bidirectional diode - DT04-2P (connection D / variant CX)

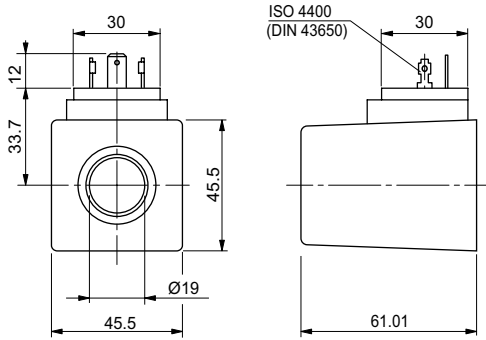
Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	123 °C	27 W	5.3 Ω	M14340001
M	24 VDC	123 °C	27 W	21.3 Ω	M14340002

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C

D12 - COILS 30W

Type of protection	IP 65
Number of cycle	18000/h
Supply tolerance	±10%
Ambient temperature	-30°C ÷ 60°C

Duty cycle	100% ED
Insulation class wire	H
Weight	0.2 kg



Standard (Hirschmann ISO 4400 DIN43650)

Coil		Max winding temperature (1)	Rated power	Resistance ±7% (2)	Spare code
Code	Voltage				
L	12 VDC	108 °C	30 W	4.7 Ω	M14100010
M	24 VDC	108 °C	30 W	18.8 Ω	M14100011

(1) Ambient temperature 25 °C - (2) Ambient temperature 20 °C