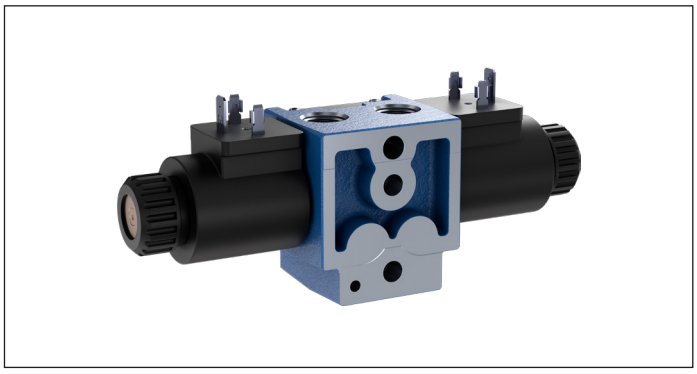
4/3 - 4/2 Directional valve elements with or without secondary relief valves and with or without LS connections

EDB-A

RE 18300-56
Edition: 05.2025
Replaces: 03.2025



- Size 4
- Series 00
- Maximum operating pressure 310 bar (4500 psi)
- Maximum flow 25 l/min (6.6 gpm)
- Port connections G 3/8 SAE6 - M16x1.5

General specifications

Valve elements with 4 ways and 3, or 2, positions.
Control spools directly operated by screwed-in solenoids with extractable coils.
In the de-energized condition, the control spool is held in the central position by return springs.
Wet pin tubes for DC coils, with push rod for mechanical override; burnish surface treatment.
Coils can be rotated 360°around the tube.
Manual override (push-button or screw type) available upon request.
Plug-in connectors available: DIN 43650 – ISO 4400, AMP Junior, DT04-2P (Deutsch).

Contents

Ordering details

01	02	03	04	05	06	07	08	09	10		11
B	**8**		**0**	**A**						**0**	

Family

01	Directional Valve elements EDB	**B**

Type

02	Size 4	**8**

Configuration

03	Standard	**0**
	With secondary valve on A	**1**
	With channels for Load Sensing	**D**

Body type

04	Without cavities for additional valves	**0**

Coil type

05	D36	**A**

Spool variants[1)]

06	4/3 operated on both sides A and B	**_2__**
	4/2 operated on side A only	**_3__**

Voltage supply		**07**	**04**	**03**	**01**	**00**	
07	Without coil	–	–	–	–	●	**00**
	12 V DC	●	●	●	●	–	**OB**
	24 V DC	●	●	●	●	–	**OC**

Electric connections

08	Without coils	**00**
	With coils, without mating connector DIN EN 175301-803 [2)]	**01**[2)]
	With coils, with bi-directional diode, without mating connector vertical Amp-Junior	**03**
	With coils, with bi-directional diode, without mating connector horizontal Amp-Junior	**04**
	With coils, with bi-directional diode, without mating connector DT04-2P	**07**

Ports

09	G 3/8 DIN 3852	**3**
	M 16x1,5 DIN 3852	**U**
	9/16-18 UNF 2-B (SAE6)	**B**

Secondary valves setting

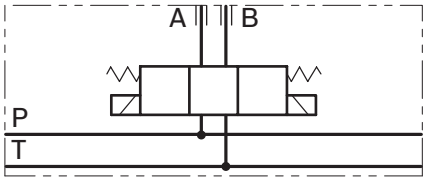
10	50-210 bar (725-3045 psi)	**0** [3)]
	100-310 bar (1450-4500 psi)	**1**
	25-50 bar (362-725 psi)	**2**

Options

11	Standard	**0**
	Push-button type manual override	**P**
	Screw type manual override	**F**

● = Available – = Not available

▼ **Symbols**



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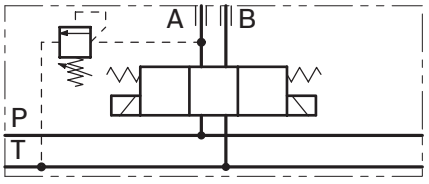

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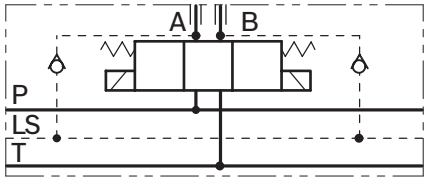
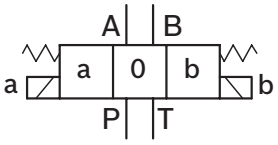


= D

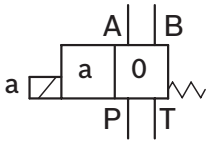
1) The required hydraulic symbol and spool variant can be chosen by consulting page 3.
2) For connectors ordering code see data sheet RE 18325-90.
3) Without secondary valve (versions B80__; B8D__), the standard configuration corresponds to “0”.
The secondary valves have a maximum flow capacity of 6 l/min (1.6 gpm).

Spool variants

0A_ 2 _ _



0A_ 3 _ _




=B201

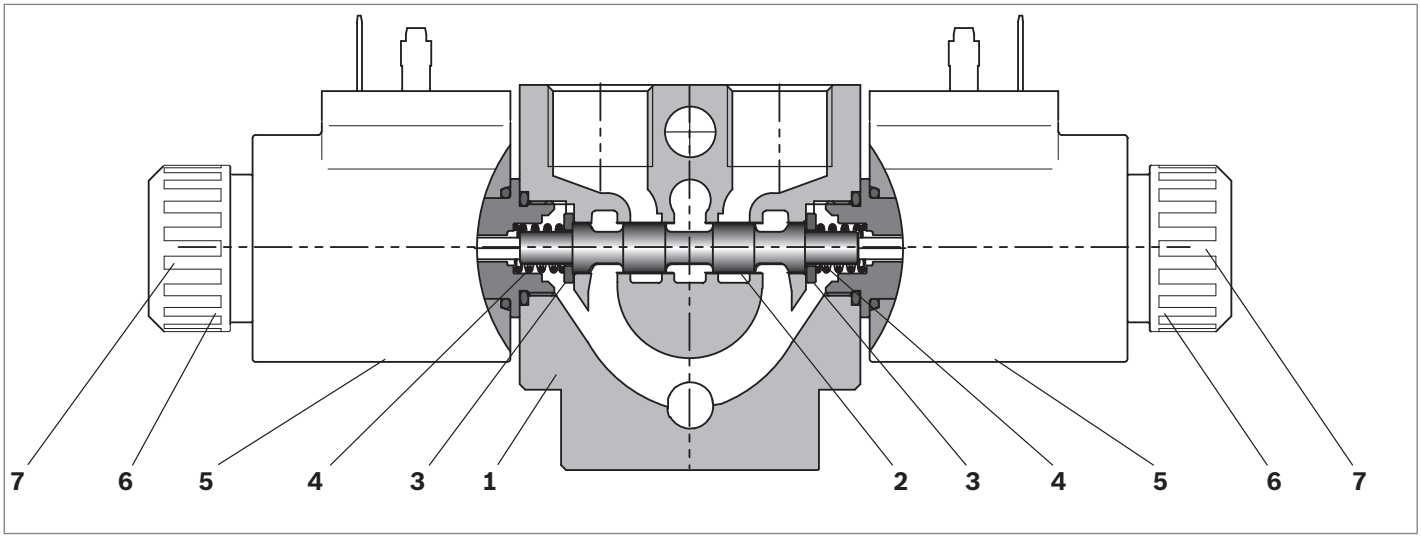

=E201


=K201


=X301


=Y301

Functional description



The sandwich plate design directional valve elements B8_05... are very compact direct operated solenoid valves which control the start, the stop and the direction of the oil flow. These elements basically consist of a stackable housing (**1**) with a control spool (**2**), one or two solenoids (**5**), and one or two return springs (**4**). When energized, the force of the solenoid (**5**) pushes the control spool (**2**) from its neutral-central position “0” to the required end position “a” or “b”, and the required flow from P to A (with B to T), or P to B (with A to T) is achieved. Once the solenoid is de-energized, the return spring (**4**) pushes the spool thrust washer (**3**) back against the housing and the spool returns in its neutral-central position.
Each coil is fastened to the solenoid tube by a ring nut (**6**). A pin (**7**) allows to push the spool (**2**) in emergency conditions, when the solenoid cannot be energized, like in case of voltage shortage.

Technical data

General		
Valve element with 2 solenoids	kg (lbs)	1.30 (2.86)
Valve element with 1 solenoid	kg (lbs)	1.00 (2.20)
Ambient Temperature	°C (°F)	–30....+90 (-22....+194) (NBR seals)
Hydraulic		
Maximum pressure at P, A and B ports	bar (psi)	310 (4500)
Maximum dynamic at T	bar (psi)	250 (3625)
Hydraulic fluid General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.
Fluid Temperature	°C (°F)	–30....+100 (-22....+212) (NBR seals)
Permissible degree of fluid contamination		ISO 4572: $\beta_x \geq 75$ X=12...15 ISO 4406: class 20/18/15 NAS 1638: class 9
Viscosity range	mm^2/s	5....420

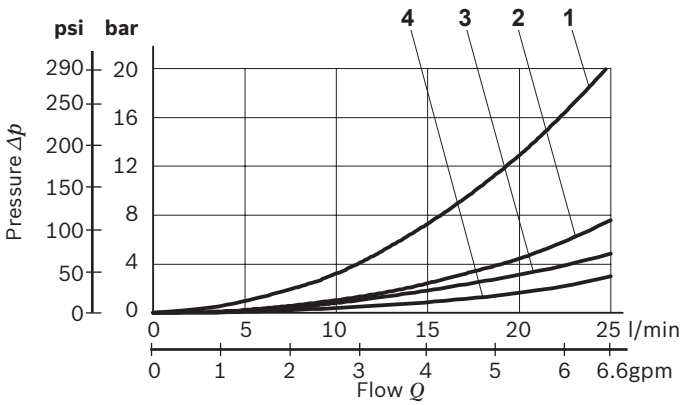
Electrical			
Voltage type		DC (AC only with RAC connection)	
Voltage tolerance (nominal voltage)	%	-10 .... +10	
Duty		Continuous, with ambient temperature ≤ 50°C (122°F)	
Coil wire temperature not to be exceeded	°C (°F)	180 (356)	
Insulation class		H	
Compliance with		Low Voltage Directive LVD 73/23/EC (2006/95/EC), 2004/108/EC	
Coil weight with connection EN 175301-803	kg (lbs)	0.18 (0.40)	
Voltage	V	12	24
Voltage type		DC	DC
Power consumption	W	20	20
Current (nominal at 20 °C (68 °F))	A	1.62	0.84
Resistance (nominal at 20 °C (68 °F))	Ω	7.4	28.4

Note
For applications with different specifications consult us

Code	Voltage [V]	Connector type	Coil description	Marking	Coil Mat no.
OB 01	12 DC	EN 175301-803 (Ex. DIN 43650)	D3601 12DC	12V DC	R901393412
OB 03	12 DC	AMP JUNIOR	D3603 12DC	12V DC	R901435507
OB 04	12 DC	AMP JUNIOR Horizontal	D3604 12DC	12V DC	R901395031
OB 07	12 DC	DEUTSCH DT 04-2P	D3607 12DC	12V DC	R901394397
OC 01	24 DC	EN 175301-803 (Ex. DIN 43650)	D3601 24DC	24V DC	R901393577
OC 03	24 DC	AMP JUNIOR	D3603 24DC	24V DC	R901435494
OC 04	24 DC	AMP JUNIOR Horizontal	D3604 24DC	24V DC	R901395035
OC 07	24 DC	DEUTSCH DT 04-2P	D3607 24DC	24V DC	R901394399

Note
For further versions (i.e. cable single lead) contact factory.

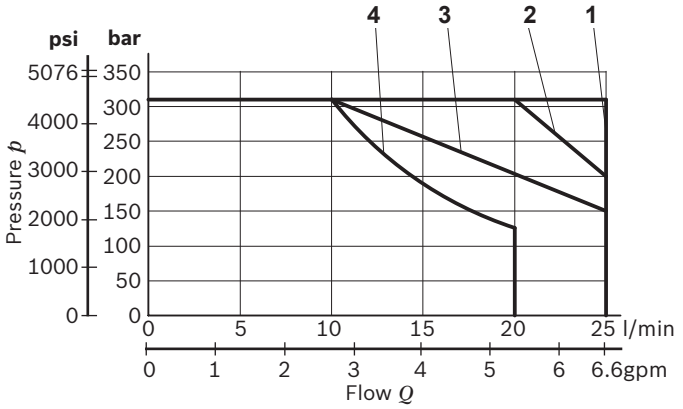
Characteristic curves



Spool Variant	Curve no.				
	P>T	P>A	P>B	A>T	B>T
B201		3	3	2	2
E201		3	3	4	4
K201		3	3	4	3
Y301		2	3	3	2
X301		3	3	3	3

Measured with hydraulic fluid ISO-VG32 at 45° ±5 °C (113° ±9 °F); ambient temperature 20 °C (68 °F).

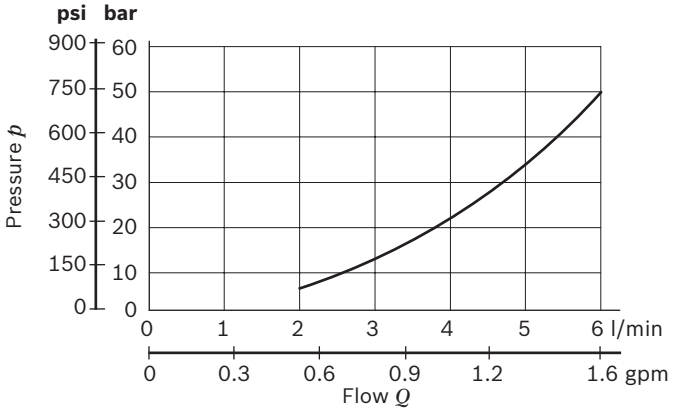
Performance limits



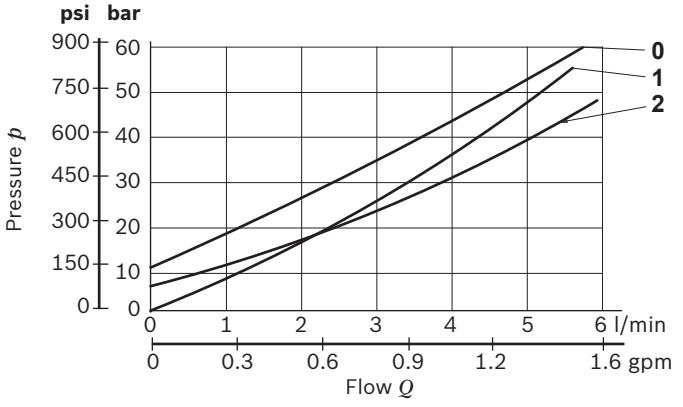
Spool Variant	Curve no.
B201	2
E201	1
K201	3
X301	1
Y301	2

The performance curves are measured with flow going across and coming back, like P>A and B>T, with symmetrical flow areas.
In case of special circuit connections, the performance limits can change.

Minimum flow for efficiency of LS control

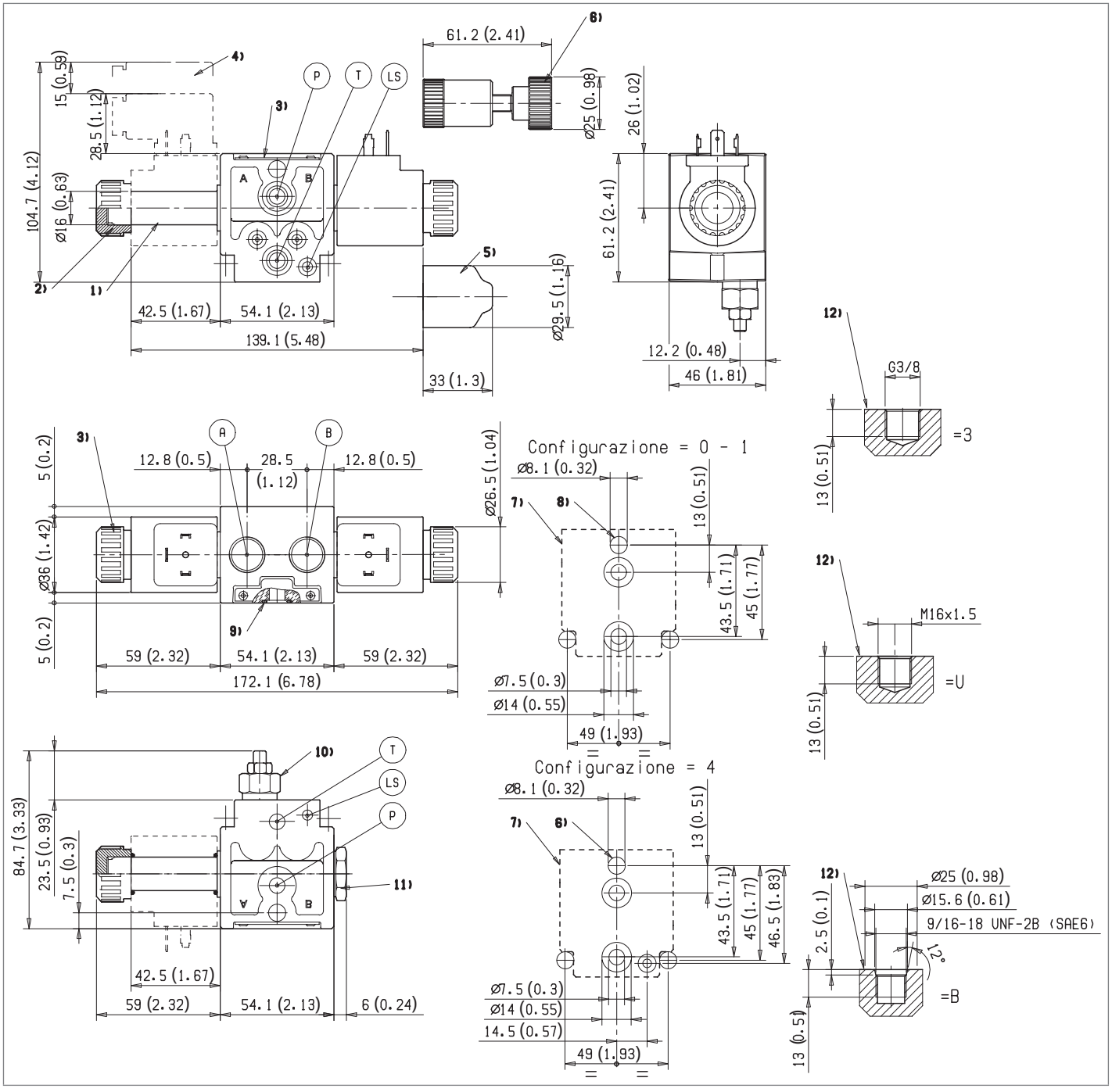


Lowest pressure setting curve for secondary valves



Secondary valve setting	Curve no.
50-210 bar (700-2950 psi)	0
100-310 bar (1400-4500 psi)	1
25-50 bar (350-700 psi)	2

External dimensions and fittings



1 Solenoid tube Ø 16mm (0.63inch).
Torque 20÷22 (14.7÷16.2 ft-lb).

2 Ring nut for coil locking (OD 26,5 mm (1,04inch));
torque 3-4Nm (2.2-3 ft-lb).

3 Identification label.

4 Clearance needed for connector removal.

5 Optional push-button emergency, EP type, for spool opening:
it is pressure stuck to the ring nut for coil locking.
Mat no. R930059524.

6 Optional screw type emergency, EF type, for spool opening:
it is screwed (torque 6-7 (4.4-5.2 ft-lb)) to the tube as replacement of the coil ring nut. Mat. no. R930059561

7 Flange specifications for coupling to ED intermediate elements.

8 One through hole for coupling of the ED Directional Valve Elements. Recommended tie rod M8 with strength class DIN 8.8.
Torque 17-19 Nm (12.5-14.0 ft-lb).

9 O-Rings for P and T ports.

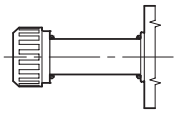
10 Space needed for secondary valve.

11 Plug for 2 positions versions (4/2); Ø 22 mm,
torque 20-22 Nm (14.7-16.2 ft-lb).

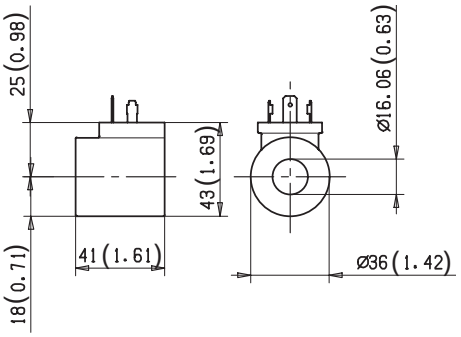
12 A and B ports.

Electric connections

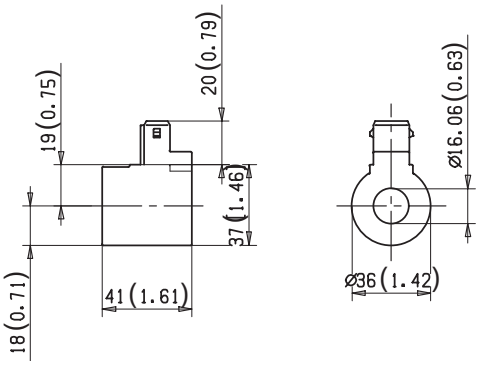
00 Without coil



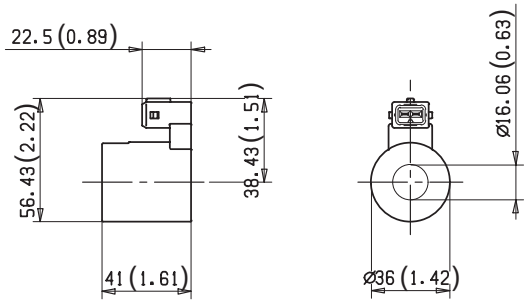
01



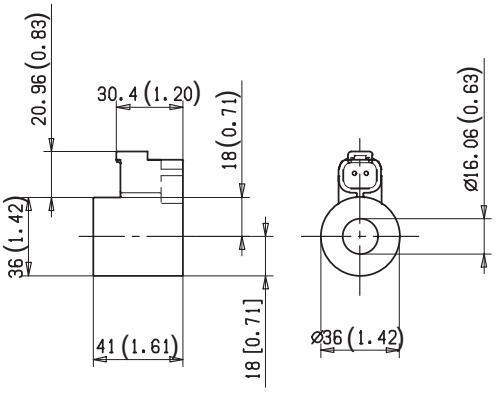
03 Protection class: IP 65 with female connector properly fitted (see drawing).



04 Protection class: IP 65 with female connector properly fitted (see drawing).



07 Protection class: IP 69 K with female connector properly fitted (see drawing).



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