Part number:

061-10010

HYDROMA HYDRAULICKÉ SYSTÉMY

HIDROMA SISTEMS UKŁADY HYDRAULICZNE

HYDROMA ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

6/2 ways/positions flow diverters

L721.... (VS151-VS152-VS155)

DVI0082

Size 6
Series 01
Maximum operating pressure 310 bar *[4500 psi]*
Maximum flow 60 l/min *[15.85 gpm]*
Ports G 3/8 - G 1/2 - SAE8

Summary

General specifications

- 6 way 2 position valve.
- Directional spool valve with direct solenoid control.
- Upon request, hydraulic / pneumatic pilot , or manual push and twist control.
- Usable as stand-alone, or as multiple stackable units
- Control spool operated by screwed-in solenoid, with easily extractable coil fastened by a ring nut.
- Wet pin tube for DC coil, with push rod for mechanical override in case of voltage shortage.
- Unrestricted 360° orientation of DC coil.
- Control spool held in normal position by return spring.
- Optional manual override (push-button or screw type).
- Connectors available: DIN 43650 – ISO 4400, AMP Junior, DT04-2P (Deutsch), Free leads.

Ordering details

L	7	2 1	_	_ _	_ _	_	_ _	_ _	0

Family
Compact directional valve

Type
Flow Diverters

Ports
G 3/8 DIN 3852 = 3
G 1/2 DIN 3852 = 4
3/4-16 UNF (SAE8) = C

Control type
Solenoid (coil C 48) without emergency = 11
Solenoid (coil C 48) with push-button type emergency = 1P
Solenoid (coil C 48) with screw type emergency = 1F
Hydraulic / pneumatic control = P1
Manual push and twist control = H1

Spool Variants
6 way / 2 position P1 side = 6_

Electric connections
00 = Without coil
01 = With coil, without connector
02 = With coil and with non-assembled connector, type DIN 43650 – ISO 4400
03 = With coil having AMP Junior connector
07 = With coil having DEUTSCH DT 04-2P connect.
31 = With coil and bipolar sheathed lead 350mm *[13.8"]* long

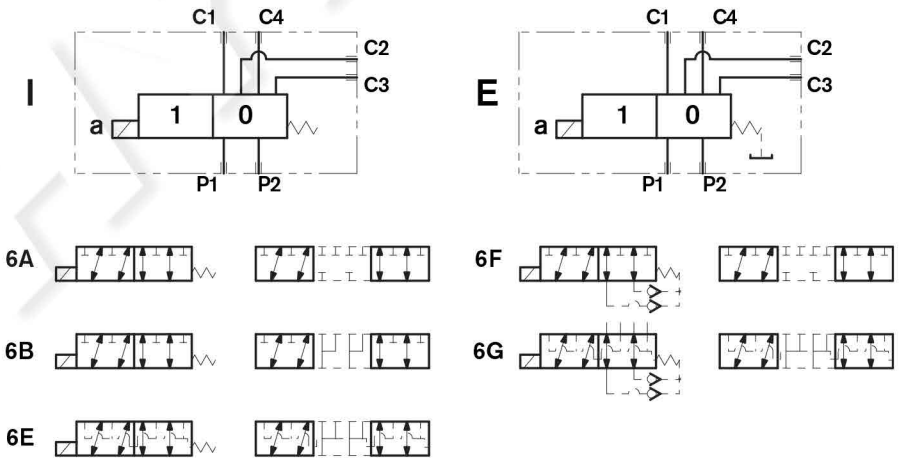
Voltage supply

	31	07	03	02	01	00	
SG =							Manual push and twist control
00 =						■	Without coil
OB =	■	■	■	■	■		12V DC
AD =		■		■	■		13V DC
OC =	■	■	■	■	■		24V DC
AC =		■		■	■		27V DC
OD =				■	■		48V DC

Available connections

Drain type
I = Internal drain
E = External drain

Spool variants



Principles of operation, cross section

A valve basically consists of a housing (1), a control spool (2), a return spring (3) and a solenoid (5). It is designed to connect two inlet lines P1 – P2 (normally a set of hoses) and divert them to either the outlet ports (C1 – C4) with spool in position "0", when the solenoid is de-energized, or to the outlet ports (C2 – C3) with spool in position "1", when the solenoid is energized.

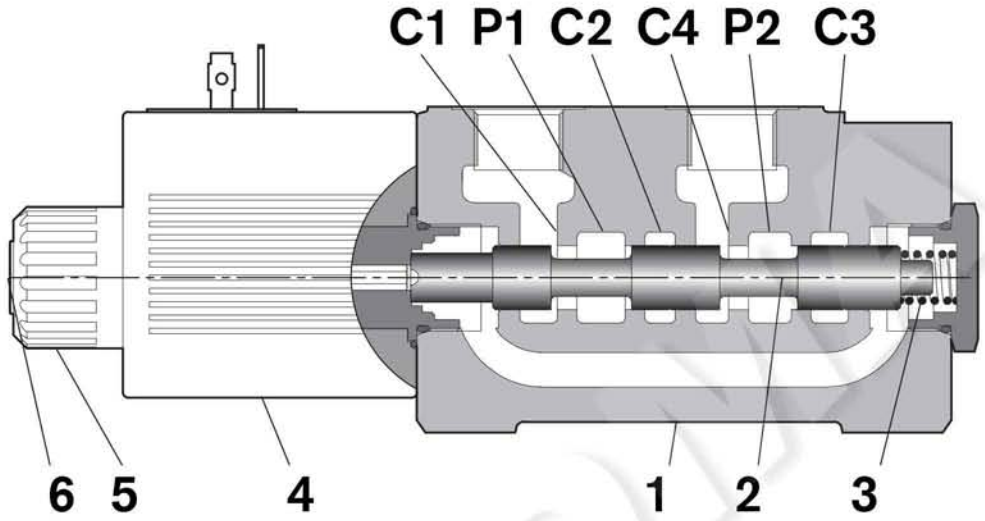
With the coil de-energized, the return spring (3) pushes back the spool (2) and holds it in position "0".

The coil (5) is fastened to the tube by the ring nut (6).

The manual override (6) allows to shift the spool (2) also in case of voltage shortage.

An external drain, to be connected to tank, ensures shifting operations also at higher working pressure.

Hydraulic / pneumatic pilot control, or manual push and twist control for spool shifting are available upon request.



Technical Data (for applications with different specifications consult us)

General

Valve weight	kg *[lbs]*	2.85 *[6.29]*
Mounting position		unrestricted
Ambient Temperature	°C *[°F]*	–20....+50 *[-4....+122]* (NBR seals)

Hydraulic

Maximum pressure with external drain	bar *[psi]*	310 *[4500]*
Maximum pressure with internal drain	bar *[psi]*	250 *[3625]*
Maximum pressure with internal drain and 6F or 6G scheme	bar *[psi]*	310 *[4500]*
Maximum flow	l/min *[gpm]*	60 *[15.85]*
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]*	–20....+80 *[-4....+176]* (NBR seals)
Permissible degree of fluid contamination		ISO 4572: $\beta_x \geq 75$ X=12...15 ISO 4406: classe 20/18/15 NAS 1638: classe 9
Viscosity range	mm^2/s	5....420
Internal leakage with 100 bar *[1450 psi]* secondary pressure at C	cc/min *[in^3/min]*	min. 10 *[0.61]* - max. 20 *[1.2]*

Electrical

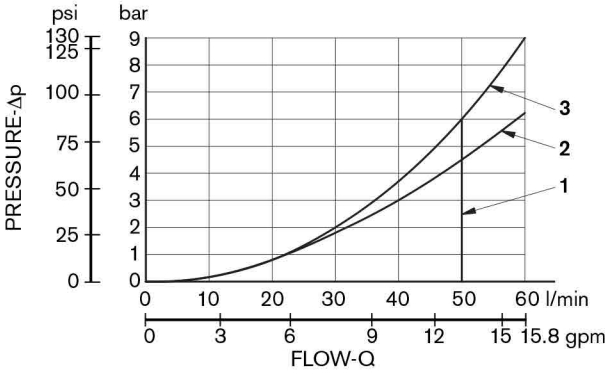
Voltage type		DC								
Voltage tolerance (nominal voltage)	%	-10 .... +10								
Duty	%	Continuous, with ambient temperature ≤ 50°C *[122°F]*								
Maximum coil temperature	°C *[°F]*	150 *[302]*								
Insulation class		H								
Compliance with		Low Voltage Directive LVD 73/23/EC (2006/95/EC), 2004/108/EC								
Coil weight with DIN 43650 – ISO 4400 connector	kg *[lbs]*	0.5 *[1.1]*								
Voltage	V	12	13	24	27	48				
Voltage type		DC	DC	DC	DC	DC				
Power consumption	W	36	36	36	36	36				
Current [1]	A	3.0	2.77	1.53	1.32	0.75				
Resistance [2]	Ω	3.97	4.68	15.67	20.42	63.60				

[1] Nominal - [2] ± 7% at temperature 20°C *[68°F]*

	Voltage (V)	Connector type	Coil description	Marking	Coil Mat no.
=OB 01 **=OB 02**	12 DC	EN 175301-803 (Ex. DIN 43650)	C4801 12DC	12 DC	R933000063
=OB 03	12 DC	AMP JUNIOR	C4803 12DC	12 DC	R933000065
=OB 07	12 DC	DEUTSCH DT 04-2P	C4807 12DC	12 DC	R933000068
=OB 31	12 DC	Cable 350 mm long	C4831 12DC	12 DC	R933000064
=AD 01 **=AD 02**	13 DC	EN 175301-803 (Ex. DIN 43650)	C4801 13DC	13 DC	R933000069
=AD 07	13 DC	DEUTSCH DT 04-2P	C4807 13DC	13 DC	R933000073
=OC 01 **=OC 02**	24 DC	EN 175301-803 (Ex. DIN 43650)	C4801 24DC	24 DC	R933000076
=OC 03	24 DC	AMP JUNIOR	C4803 24DC	24 DC	R933000071
=OC 07	24 DC	DEUTSCH DT 04-2P	C4807 24DC	24 DC	R933000075
=OC 31	24 DC	Cable 350 mm long	C4831 24DC	24 DC	R933000070
=AC 01 **=AC 02**	27 DC	EN 175301-803 (Ex. DIN 43650)	C4801 27DC	27 DC	R933000077
=AC 07	27 DC	DEUTSCH DT 04-2P	C4807 27DC	27 DC	R933000074
=OD 01	48 DC	DIN EN 175301-803 ISO 4400	C4801 48DC	48 DC	R933000078

Characteristic curves

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

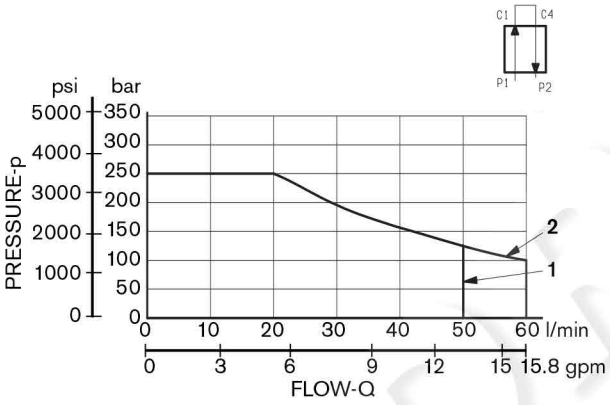


Flow diverter	Curve n.			
	P1>C1	P1>C2	C4> P2	C3>P2
VS151-G3/8	1	1	1	1
VS152-G1/2	2	2	3	3
VS155-SAE8	2	2	3	3

Measured with port G1/2 DIN 3852

DI performance limits

The performance limits refer to the following conditions: coils at operating temperature, voltage supply 10% below nominal, no back pressure in the tank line.

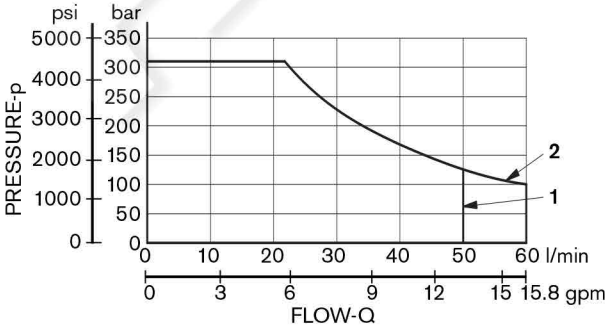


Flow diverter	Curve n.
VS151	1
VS152 - VS 155	2

Flow across both ways: forward across P1>C1 and reverse across C4>P2

DE performance limits

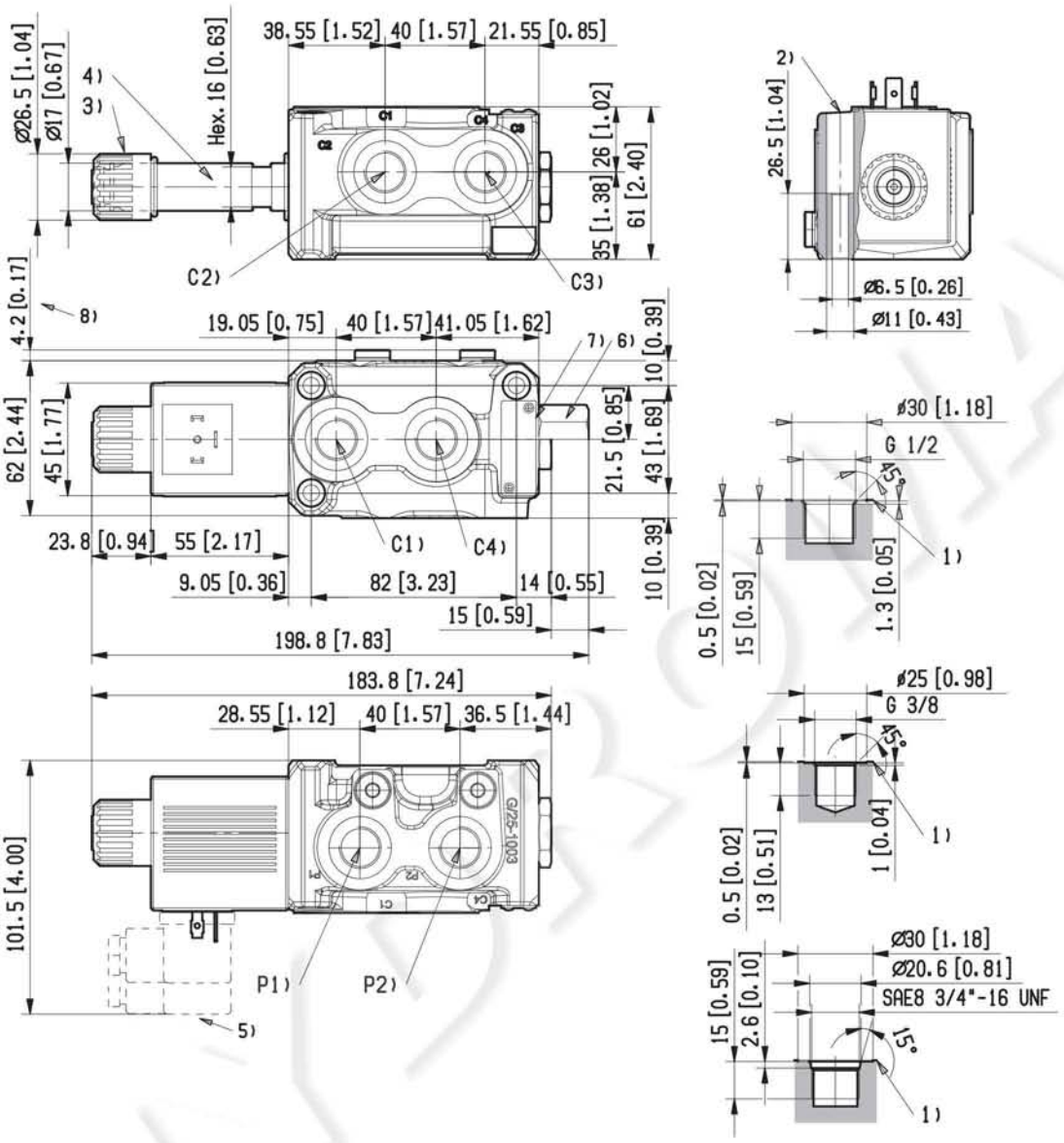
The performance limits refer to the following conditions: coils at operating temperature, voltage supply 10% below nominal, no back pressure in the tank line.



Flow diverter	Curve n.
VS151	1
VS152 - VS 155	2

Flow across both ways: forward across P1>C1 and reverse across C4>P2

External Dimensions and Fittings



1 Ports P1, P2, C1, C2, C3, C4.

2 Two fixation screws M6x40 with strength class DIN 8.8. Torque 9-10 Nm *[14.7 – 16.2 ft-lb].*

3 Ring nut for coil locking OD 26.5 mm [1.04 in]. Torque 6-7 Nm *[4.4-5.2 ft-lb].*

4 Solenoid tube hex 17 mm. Torque 22-24 Nm *[16.2 – 17.7 ft-lb].*

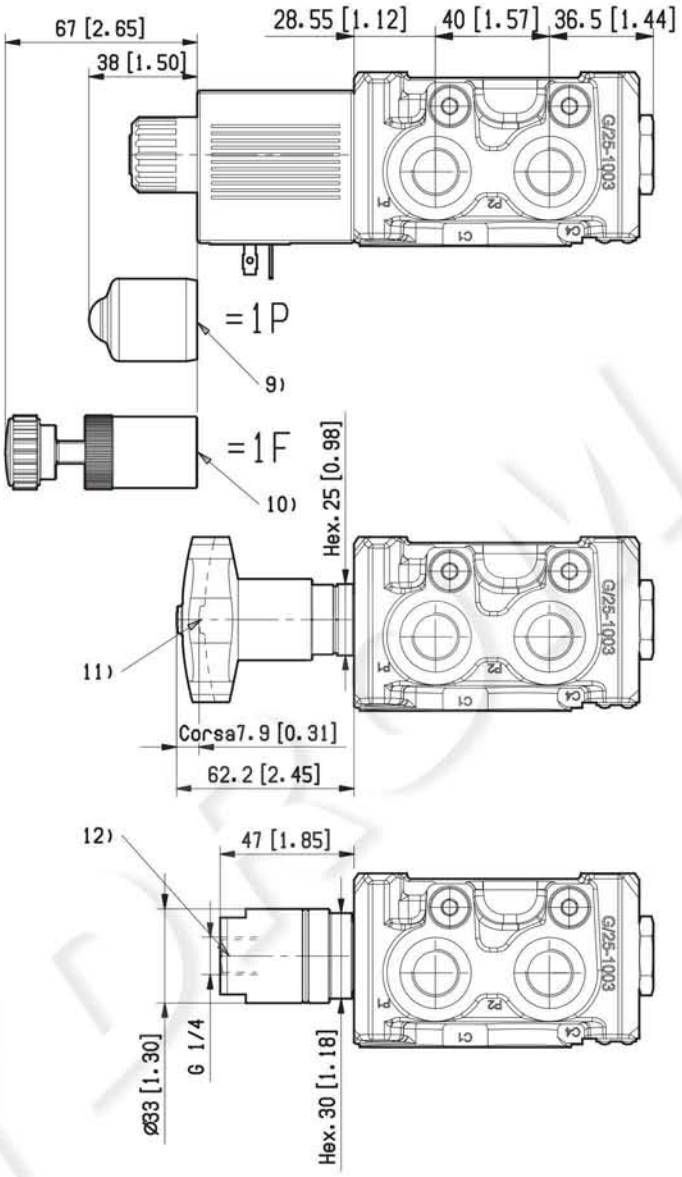
5 Minimum clearance needed for connector removal.

6 External drain plug available with G 1/4 and SAE 4 port. Hex.24 Torque 22-24 Nm *[16.2 – 17.7 ft-lb].*

7 Identification label.

8 Overall dimensions with 6F and 6G spools.

External Dimensions and Fittings



9 Optional push-button, P type, emergency for spool opening: it is pressure stuck to the ring nut for coil locking. Mat no. R933000043.

10 Optional screw type emergency, F type, for spool opening: it is screwed (torque 6-7Nm *[4.4-5.2 ft-lb]*) to the tube as replacement of the coil ring nut. (Mat no. R933007215)

11 Dimensions of optional manual version, push and twist type. Hex 25 mm, torque 20-22 Nm *[16.2-17.7 ft-lb]*.

12 Dimensions of optional hydraulic / pneumatic piloted version. Pilot port plug available with G 1/4: hex 30 mm, torque 25-27 Nm *[18.4-19.9 ft-lb]*.

Electric connection

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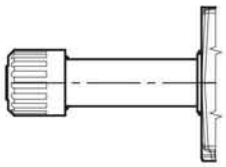
Without coils, but with ring nut and O-Rings for coil fitting (solution recommended for flexible stock handling)



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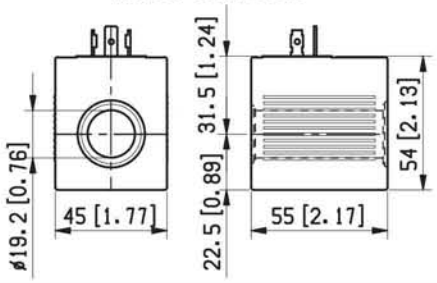
With coils having plug-in pins EN 175301-803, without connectors



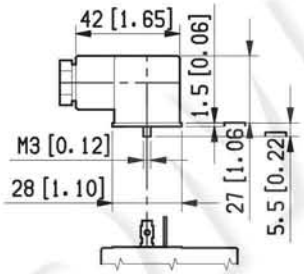
=02

With coils and with connectors non-assembled, type EN 175301-803.

Protection class: IP 65 when connector with seal is properly screwed down, and cable clamp is correctly tightened.

182-09: Standard.
182-LED-T-A1: with LED monitoring presence of voltage.
182-09-G-DO-2-1: with VDR (Voltage Dependent Resistor), to prevent input voltage over-shootings.

Mat. No.	Description
R933002885	182-09 GRAY
R933002889	182-09 BLACK
R933002893	182-LED-T-A1 12 DC
R933002894	182-LED-T-A1 24 DC
R933002896	182-LED-T-A1 48 DC
R933002886	182-09-G-DO-2-1 12DC with VDR
R933002887	182-09-G-DO-2-1 24DC with VDR



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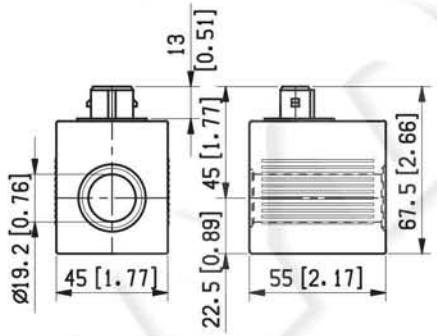
With coils having AMP Junior connector, and with bi-directional diode.

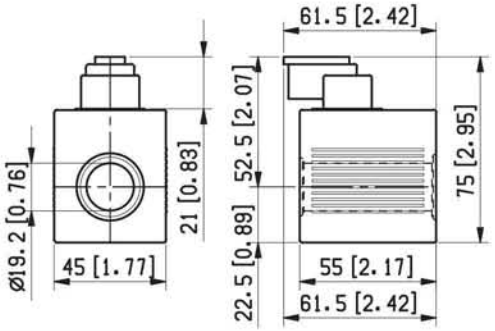
Protection class: IP 65 with female connector properly fitted (see drawing).



=07

With coils having DEUTSCH DT 04-2P connector, and with bi-directional diode.

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



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With coils having bi-directional diode and bipolar sheathed free lead, 350 mm long, without pins.