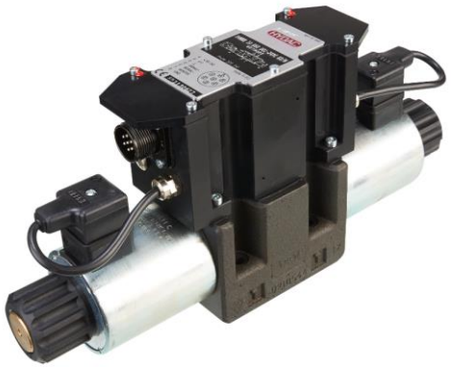
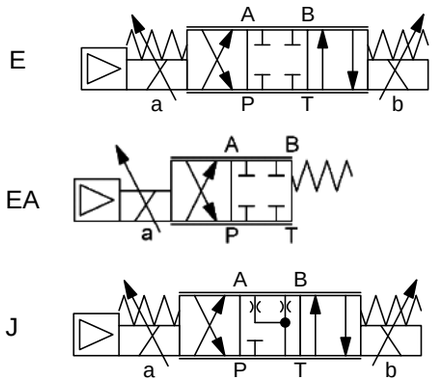
HYDAC INTERNATIONAL



4/3-Proportional Solenoid Valve direct acting with integrated Electronics Subplate to ISO4401

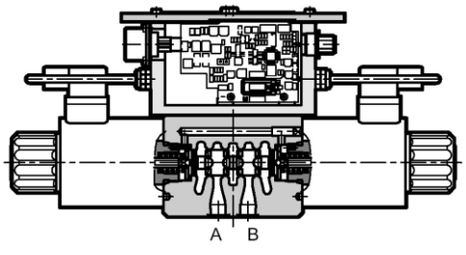
P4WEE 10

SYMBOLS



up to 90 l/min
up to 320 bar

FUNCTION



The P4WEE10 is a direct acting solenoid valve which combines the directional control with the velocity control of the consumer.
The controlled nominal flow is proportional to the electrical input signal at the coil.
Analogue to his size the coil creates a force and moves the piston against the spring. Herewith the corresponding cross section diameters are opened which determines the flow rate in dependence of the pressure differential.
The integrated digital electronics permits a better performance of the valve and function by
- shortened response times
- reduced hysteresis
- better repeat accuracy

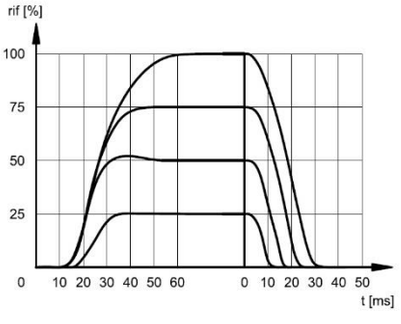
FEATURES

- High flow rate due to optimized casted housing
- Low hysteresis by super finish of moving parts
- Long life cycle times by armature switching under oil
- Minimal wear by hardened and ground valve piston
- Simple exchangeability by international standardized hole pattern to ISO 4401
- Integrated digital amplifier

SPECIFICATIONS

Operating pressure:	max. 320 bar at port P, A, B max. 140 bar at port T
Nominal flow:	max. 90 l/min
Media operating temp.range:	-20°C up to +80°C
Ambient temperature range:	-20°C up to +60°C
Hydraulic fluid:	Hydraulic fluid to DIN 51524 part 1 to 3
Viscosity range:	10 mm^2/s up to 400 mm^2/s
Filtration:	class 18/16/13 according to ISO 4406
Installation:	no orientation restrictions
Hint:	vent system and valve before setting in motion
Hole pattern:	ISO 4401-05-04-0-05
Weight:	6,6 kg
ELECTRONICS	
Switch-on time:	(0 - 100%) 50 ms
Switch-off time:	(100 - 0%) 60 ms
Coil duty rating:	100% (continuous)
Electromagnetic compatibility:	(EMC) Emissions to EN 50081-1 compatibility to EN 50082-2 to Standard 89/336 CEE
IP rating:	IP65 / IP67 (if connector is correctly installed)
Hysteresis:	(in % of Qmax) < 3,0 %
Repeat accuracy:	(in % of Qmax) < ± 1,0 %

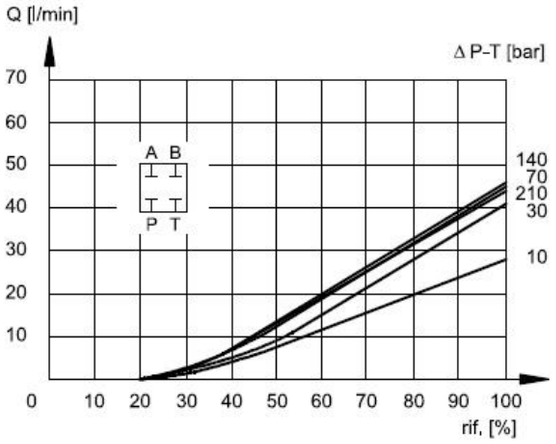
Response times (measured at T oil = 50°C and 36 mm^2/s)

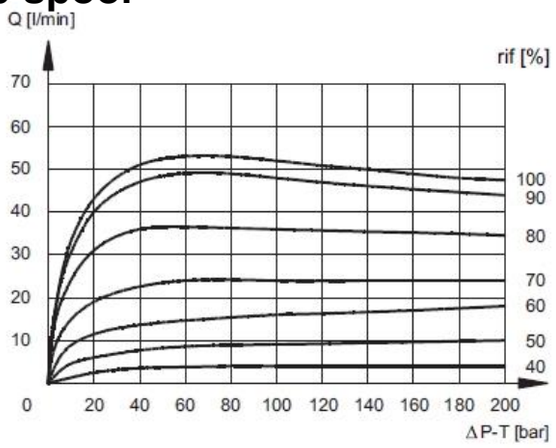


PERFORMANCE

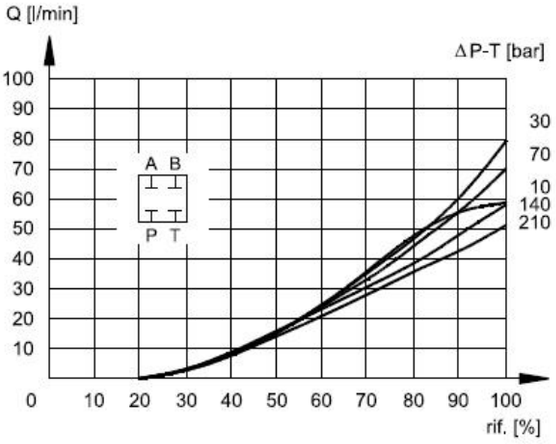
measured at ν = 36 mm²/s and T oil = 50° C (Related Δp measured between P and T)

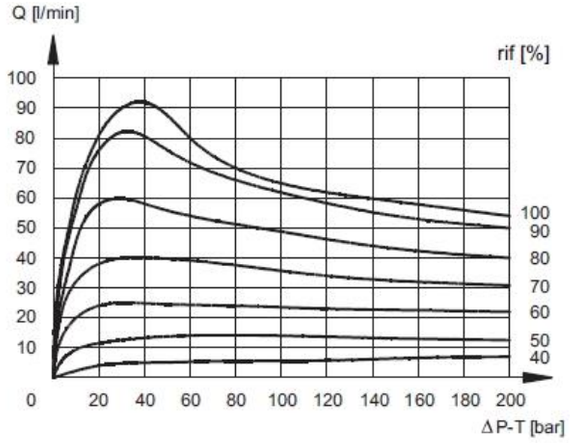
E 30 / EA 30 spool



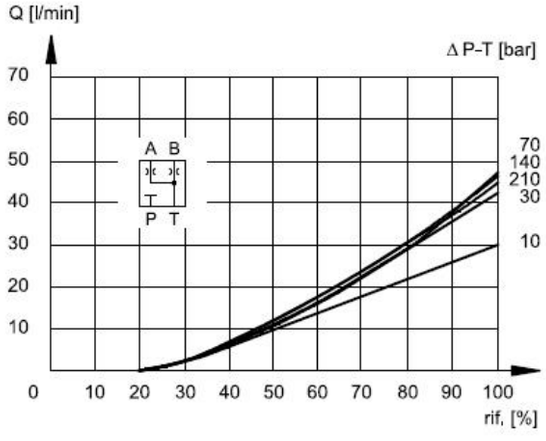


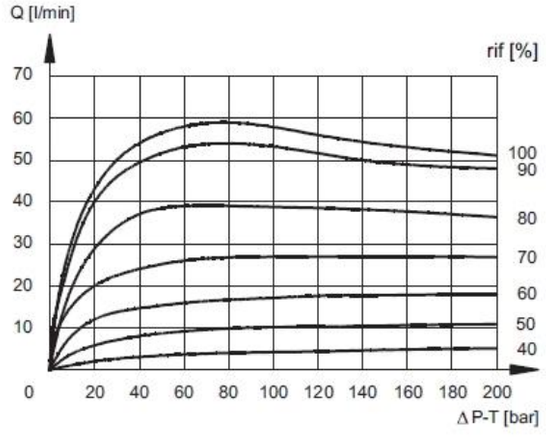
E 60 / EA 60 spool



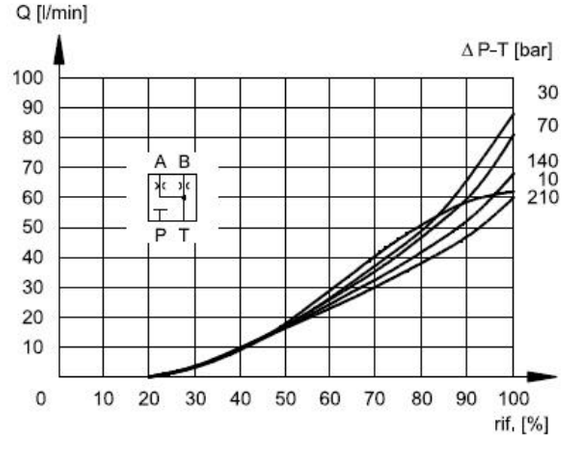


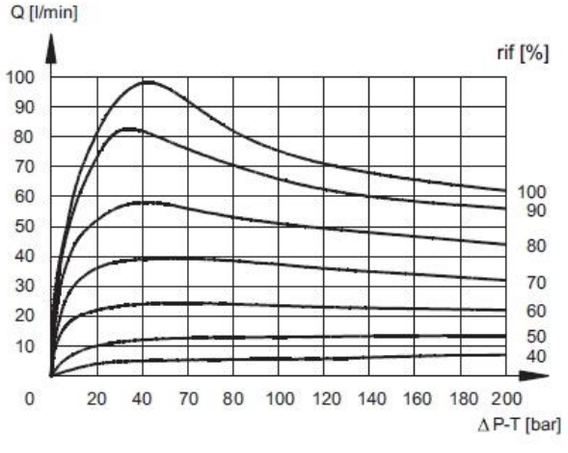
J 30 spool





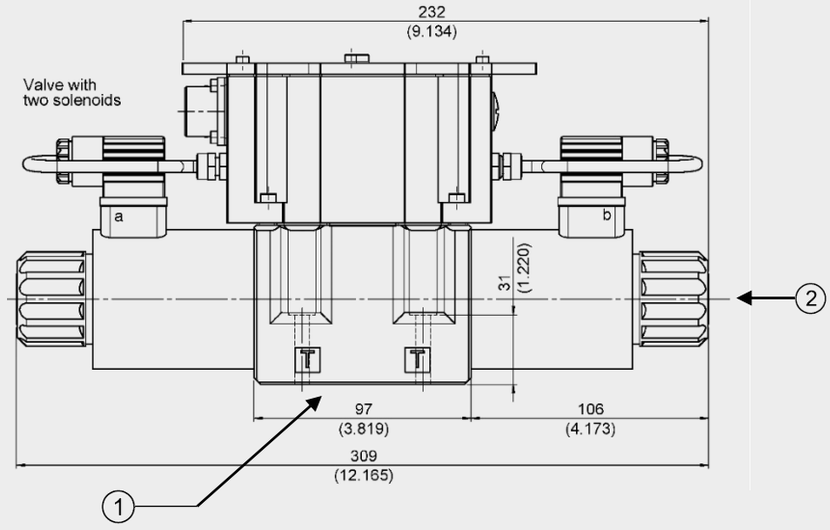
J 60 spool



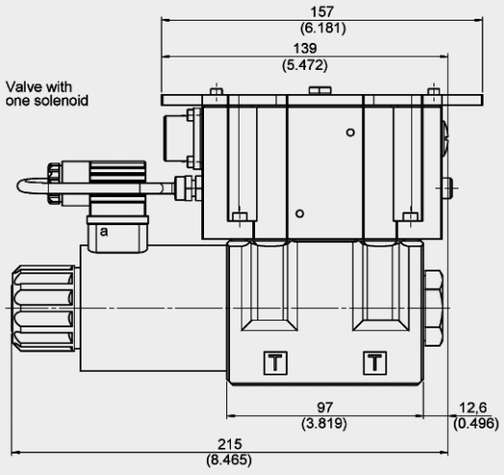


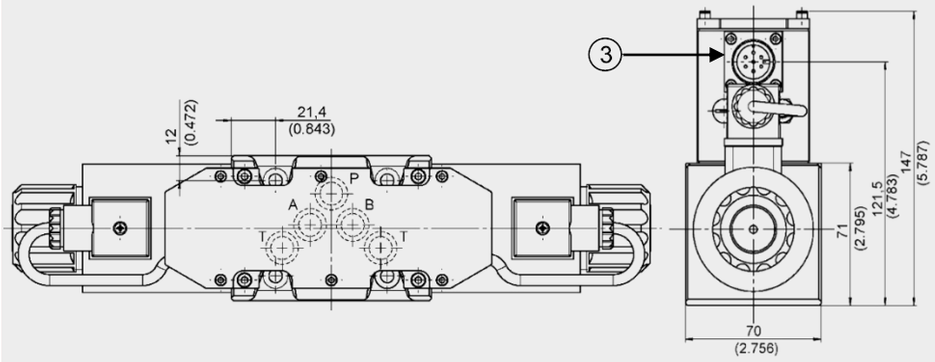
DIMENSIONS

With two solenoid

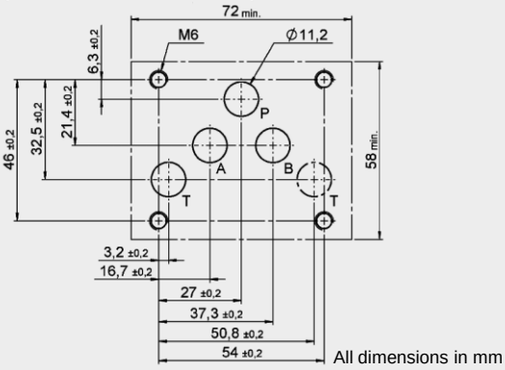


With one solenoid





INTERFACE ISO 4401-05-04-0-05
(CETOP 4.2-4-05-320)



All dimensions in mm

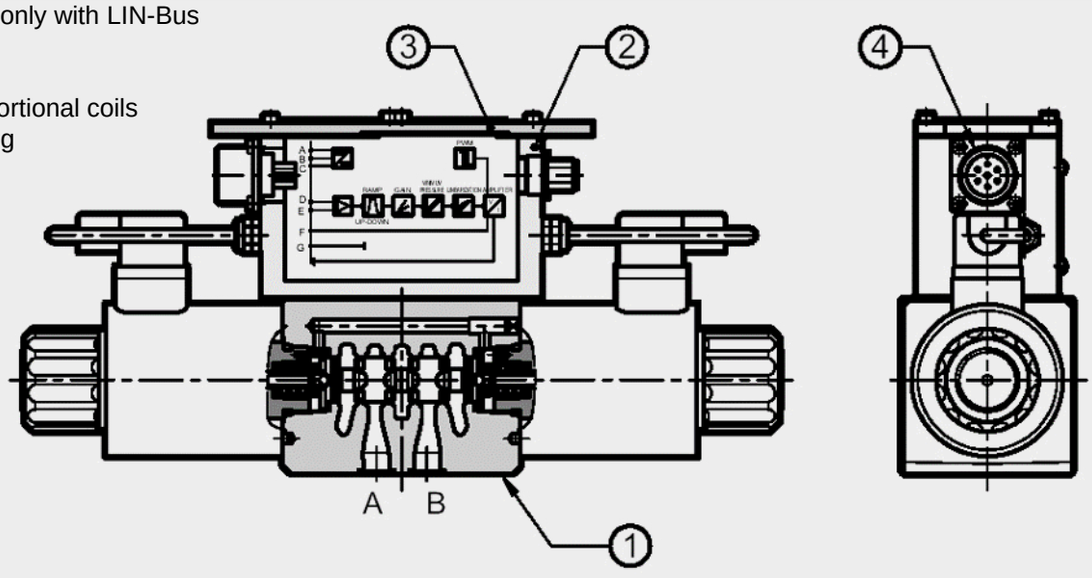
1) Mounting plate with sealing: 4 pcs O-rings 12.42 x 1.78
2) Manual override
3) Main connector (connector 7 pin DIN 43563 – IP65 PG11 EX7S/L/10 → not included in delivery, Mat. 6080324)

Mounting screws: 4 pcs M6 x 40 10.9 (not included in delivery)
Torque: 8 Nm +0,5 Nm

ONBOARD ELECTRONICS

Parameter setting only with LIN-Bus

1) Valve with proportional coils
2) Electronic casing
3) Digital amplifier
4) Main connector



Power input:	40 W
Current draw:	2,8 A max.
Nominal voltage:	24 V DC (19 – 35 V DC, ripple max. 3 Vpp)
Coil duty rating:	100% (continuous)
Input signal E0:	voltage signal ±10VDC (Impedance Ri > 11 kOhm)
Input signal E1:	current signal 4 – 20 mA (Impedance Ri = 500 Ohm)
Alert signals:	Overload and overheating of Electronics
Communication:	Field Bus Interface LIN-Bus ISO 11898
Electronics port:	7-pin MIL-C-5015-G (DIN-EN 175201-804)
LIN-Bus-port:	M12-IEC 60947-5-2
EMC EN50081-1:	Corresponding 89/336 CEE Standard
EMC EN61000-6-2:	Corresponding 89/336 CEE Standard
IP rating:	IP65 / IP67 (CEI EN 60529 standard)

ELECTRONICS

Standard version with refernece signal voltage E0

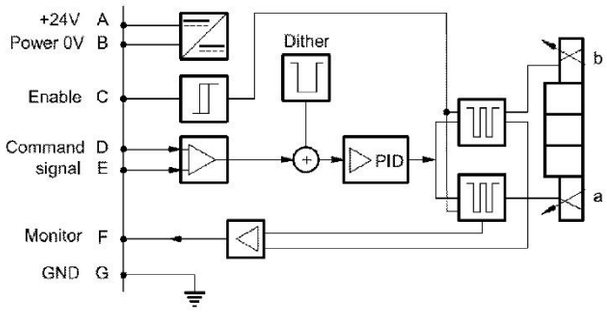
PIN	Werte	Version A	Version B	Version C
A	24 V DC	Supply voltage		
B	0 V			
C		Enable 24 V DC	Not used	PIN F reference 0 V
D	+/- 10 V	Command (differential input)		
E	0 V	PIN D reference		
F	+/- 10 V	Monitor (0V reference PIN B)		Monitor
PE	GND	Ground (Earth)		

Standard version with reference signal current E1

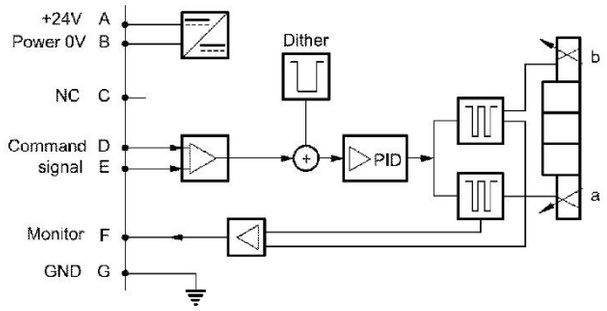
PIN	Werte	Version A	Version B	Version C
A	24 V DC	Supply voltage		
B	0 V			
C		Enable 24 V DC	Not used	PIN F reference 0 V
D	4 ÷ 20 mA	Command		
E	0 V	PIN D reference		
F	4 ÷ 20 mA	Monitor (0V reference PIN B)		Monitor
PE	GND	Ground (Earth)		

Diagrams PIN C function

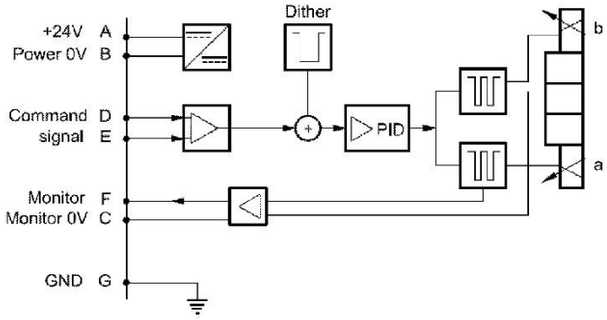
Version A: external release (on request)



Version B: internal release (standard)



Version C: 0V Monitor (on request)



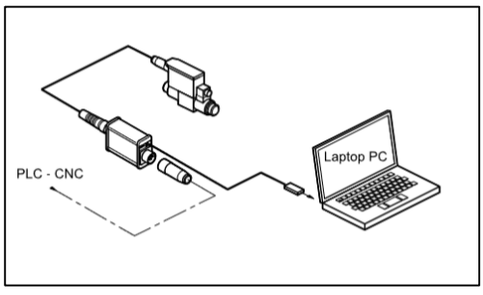
Detail 1: The input signal is a differentia signal (only E0-Version). For solenoid valves with two coils, with positive reference signal at Pin D, the flow is from P - A and B - T. At reference signal Zero it is in neutral position. For solenoid valves with one coil, with positive reference signal at Pin D, the flow is from P - B and A - T. The piston stroke is proportional to UD - UE. If there is only one input signal, Pin B (0V power supply) and Pin E (0V Reference signal) have to be connected together at protective earth.

Detail 2: setting the test point Pin F in relation to Pin B (0V)

Detail 3: foresee a fuse at Pin A (24 VDC) for the protection of the electronics: 5A/50V fast acting.

LIN-Bus Interface (Option)

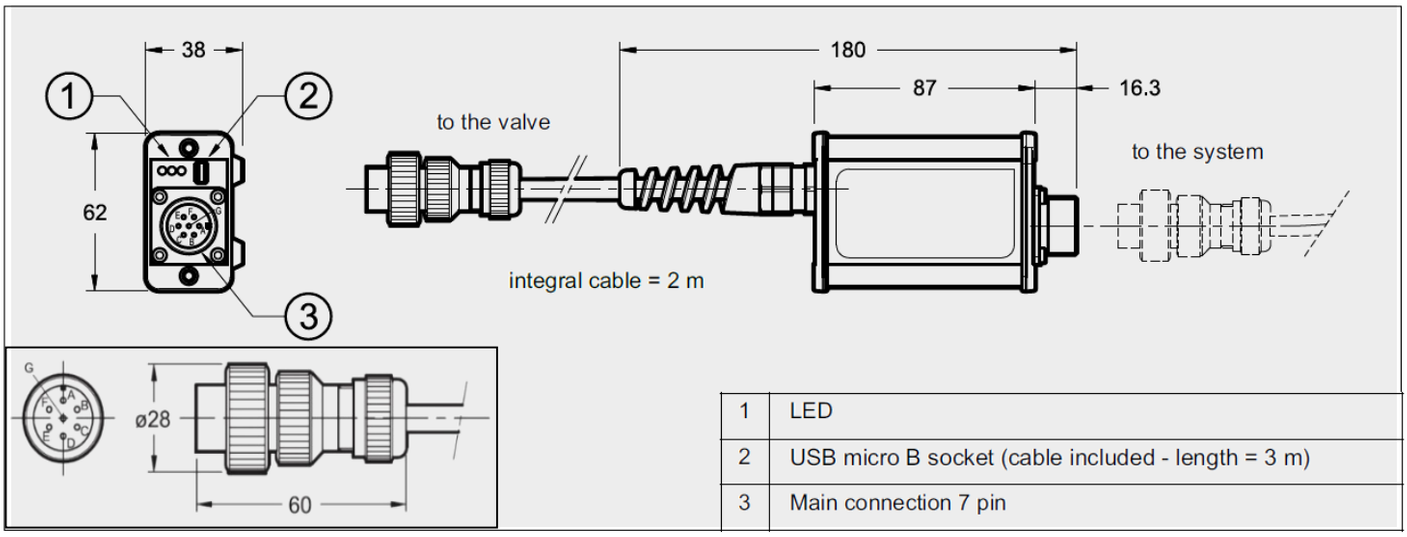
will be needed to parameterize the Onboard Electronics



Content*: Parameterize-software, adapter and PC connection cable

- The kit contains a test device with embedded connection cable 7 pin and a USB cable for connection to the PC. The dedicated software are available for download from our web site.
- The device is suitable for troubleshooting and functional testing of HYDAC proportional valves with LIN-bus interface.
- The software allow the check of settings, display the diagnostic and permit to make changes on the standard parameter setting made in factory, adapting it to your system.
- No additional power supply is required: the device uses the supply source from the 7 PIN system cable.

*On request (not included in delivery)



1	LED
2	USB micro B socket (cable included - length = 3 m)
3	Main connection 7 pin

In the casing of electronics, a 7-pole port for connecting with external devices is integrated.

The cable diameter for the connector (cable and connector are not included in delivery) has to be min. 8 mm and max. 10 mm.

MODEL CODE

P4WEE 10 E 30 D01 - 24 PG E0 A /V

Basic model
Proportional solenoid valve with integrated electronics

Nominal size
10

Spool symbol
E, EA, J
other symbols on request

Nominal volume flow
30 = 30 l/min
60 = 60 l/min
} at Δp = 10 bar P-T

Type
D01 = standard type with manual override

Nominal voltage
12 = 12 V DC
24 = 24 V DC

Coil connector
PG = DIN conntector to EN175301-803 (for coil)

Input signal
E0 = ±10 V
E1 = 4 - 20 mA

PIN C function
See „Diagrams PIN C function“

Sealing material
V = FKM (standard)
N = NBR (optional)

STANDARD MODELS

Model code	Part No.
P4WEE 10 E30 D01-24PG E0B/V	6078973
P4WEE 10 E60 D01-24PG E0B/V	6078974
P4WEE 10 J30 D01-24PG E0B/V	6078975
P4WEE 10 J60 D01-24PG E0B/V	6078976
P4WEE 10 E30 D01-24PG E1B/V	6078985
P4WEE 10 E60 D01-24PG E1B/V	6078986
P4WEE 10 J30 D01-24PG E1B/V	6078987
P4WEE 10 J60 D01-24PG E1B/V	6078988

other types on request

Annotation
The technical information in this brochure are relating to the operating conditions and applications. At deviant applications and/or operating conditions please contact the technical dept.
Technical information are subject to technical modifications.

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