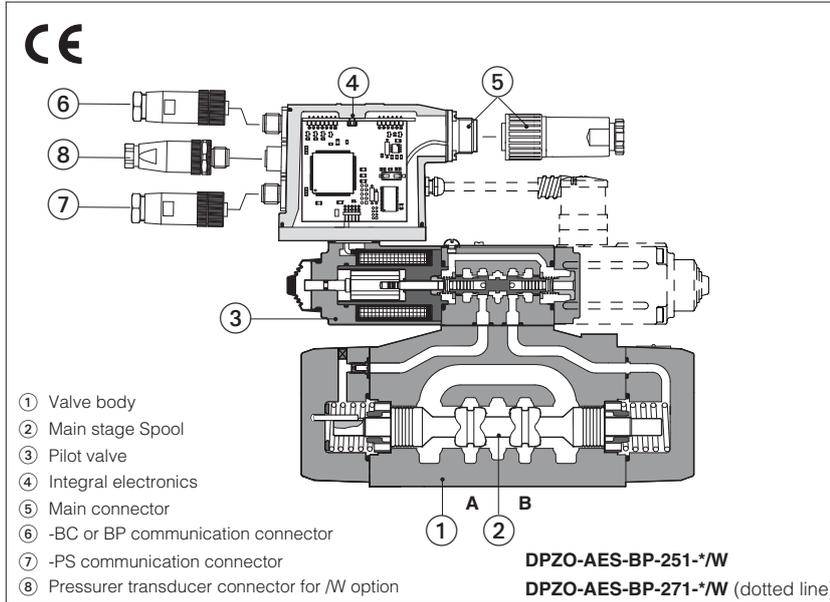


Proportional directional valves type DPZO-A*

two stage without position transducer, ISO 4401 sizes 10, 16, 25 and 32



1 MODEL CODE

DPZO - AES- PS - 2 7 1 - D 5 / * * * /*

Piloted proportional directional valve

- A** = without position transducer
- AE** = as A plus integral electronics
- AES** = as A plus integral digital electronics
- AEG** = as AES plus internal reference generation (1)
- AEZ** = as AES plus internal cycle generator (2)

Communication interfaces (only for digital electronics)

- PS** = Serial (3)
- BC** = CANopen (only AES)
- BP** = PROFIBUS DP (only AES)

Valve size:

1 = 10 **2** = 16 **3** = 25 **6** = 32

Configuration, see section 3:

- 5** = external plus central position, spring centered
- 7** = 3 positions; spring centered

Spool overlapping in central position, see section 3:

- 1** = P, A, B, T positive overlapping (4)
- 3** = P positive overlapping A, B, T negative overlapping

Spool type

- L** = linear
- S** = progressive
- D** = as **S**, but with P-A = Q, P-B = Q/2

Notes:

- (1) For detailed description of AEG integral reference generation, see tab. G120
- (2) For detailed description of AEZ integral cycle generation, see tab. G120
- (3) Serial interface always present, also for -BC and -BP options
- (4) Overlapping = 20% of spool stroke for type **S** and **D**, 10% of spool stroke for type **L**

Synthetic fluids:
WG = water-glycol
PE = phosph. ester

Series number

Coils voltage (only for -A execution):
 see section 16:

- = standard 12 V_{DC} coil
- 6** = with 6 V_{DC} coil
- 18** = with 18 V_{DC}

Hydraulic options, see section 4:

- B** = solenoid and integral electronics at side of port B of the main stage;
- D** = internal drain
- E** = external pilot
- G** = pressure reducing valve for piloting

Electronics options for -AE execution, see section 8:

- I** = current reference input (4±20 mA)
- Q** = enable signal

Electronics options for -AES execution, see section 10:

- Q** = enable signal
- Z** = double power supply, enable fault and monitor (12 pin connector)
- W** = power limitation function (12 pin connector) see section 10.3

Spool size: **3** and **5**, see section 3

DPZO-A* are two stage proportional valves without position transducer, which provide both directional and non compensated flow control according to the electronic reference signal.

They operate in association with electronic drivers, see section 2, which supply the proportional valves with correct current signal to align valve regulation to the reference signal supplied to the electronic driver.

They are available in different executions:

- -A, without position transducer;
- -AE, -AES as -A plus analogue (AE) or digital (AES) integral electronics 4;
- -AEG, as AES plus internal reference generation selected by four on-off (0÷24VDC) inputs available on the main connector (see tab. G120).
- -AEZ, as AES plus internal cycle generation for automatic control of actuator's motion cycle (see tab. G120).

The 4-way spool 2, sliding into a 5-chambers body 1, is piloted in open loop by the proportional pressure reducing valve 3 type DHRZO.

The integral electronics 4 ensures factory presetting, fine functionality plus valve-to-valve interchangeability and simplified wiring and installation.

The electronic main connector 5 is fully interchangeable for -AE and -AES executions.

Standard 7 pin main connector is used for power supply, analog input reference and monitor signals.

12 pin connector is used for -AEG, -AEZ versions and for option /Z (AES).

Following communication interfaces 6, 7 are available for the digital -AES, -AEG and -AEZ executions:

- standard -PS, Serial communication interface for configuration, monitoring and firmware updating through Atos PC software - always present
- optional -BC, CANopen interface (only for -AES)
- optional -BP, PROFIBUS DP interface (only for -AES)

The valves with -BC and -BP interfaces can be integrated into a fieldbus communication network and thus digitally operated by the machine control unit.

The coils are fully plastic encapsulated (insulation class H) and valves have anti-vibration, antishock and weather-proof features.

Surface mounting: ISO 4401 size 10, 16, 25 and 32.

Max flow respectively up to 160 l/min, 340 l/min, 680 l/min and 1030 l/min with valve differential pressure Δp = 30 bar, see section 3.

Max pressure: 350 bar.

2 ELECTRONIC DRIVERS FOR DPZO-A*

Valve model	-A						-AE	-AES	-AEG	-AEZ
Drivers model	E-MI-AC-0*F	E-MI-AS-IR	E-BM-AC-0*F	E-BM-AS-PS	E-ME-AC-0*F	E-RP-AC-0*F	E-RI-AE	E-RI-AES	E-RI-AEG	E-RI-AEZ
Data sheet	G010	G020	G025	G030	G035	G100	G110	G115	G120	G120

Note: For power supply and communication connector see section 17 and 19

3 HYDRAULIC CHARACTERISTICS (based on mineral oil ISO VG 46 at 50 °C)

Hydraulic symbols														
Valve model	DPZO-1			DPZO-2			DPZO-3			DPZO-6				
Spool overlapping	1, 3			1, 3			1, 3			1, 3				
Spool type and size	L5	S5	D5	S3	D3	L5	S5	D5	L5	S5	D5	L5	S5	D5
Max flow (1) [l/min]														
at $\Delta p = 10$ bar (P-T)	100	100	100:60	130	130:80	200	180	180:130	390	360	360:220	600	600	600:370
at $\Delta p = 30$ bar (P-T)	160	160	160:100	225	225:135	340	310	310:225	680	620	620:380	1030	1030	1030:640
max permissible flow	180	180	180:110	500	500:300	710	640	640:460	1350	1250	1250:760	1600	1600	1600:1000
Pressure limits (2) [bar]	ports P, A, B, X = 350; T = 250 (5 for option /D); Y = 5													
Response time [ms]	< 80			< 100			< 120			< 120				
Hysteresis [%]							$\leq 5\%$							
Repeatability							$\pm 1\%$							

Notes:

- For version DPZO-A and DPZO-AE, configuration /B, see the notes at section 14.1
- Above performance data refer to valves coupled with Atos electronic drivers, see section 14.1
- In case of long time shutdown of the hydraulic supply to the pilot valve, the driver has to be switched off to avoid its overheating.
- The flow regulated by the directional proportional valves is not pressure compensated, thus it is affected by the load variations. To keep constant the regulated flow under different load conditions, modular pressure compensators are available (see tab. D150).

(1) For different Δp , the max flow is in accordance to the diagrams in section 14.2

(2) Minimum piloting pressure = 30 bar

4 HYDRAULIC OPTIONS

4.1 Option /B Solenoid (for valve configuration *5*) and integral electronics at side of port A. For hydraulic configuration vs. reference signal, see section 14.1

4.2 Pilot and drain configuration -The pilot / drain configuration can be modified as shown in the table E080 section 12.

The valve's standard configuration provides internal pilot and external drain. For different pilot / drain configuration select:

Option /E External pilot (through port X). **Option /D** Internal drain.

Option /G Pressure reducing valve with fixed setting (= 40 bar for DPZO-1 and -2; 100 bar for DPZO-3) installed between pilot valve and main body. It is advisable for valves with internal pilot in case of system pressure higher than 200 bar.

5 GENERAL NOTES

DPZO-A* proportional valves are CE marked according to the applicable Directives (e.g. Immunity/Emission EMC Directive and Low Voltage Directive). Installation, wirings and start-up procedures must be performed according to the general prescriptions shown in table F003 and in the installation notes supplied with relevant components.

The electrical signals of the valve (e.g. monitor signals) must not be directly used to activate safety functions, like to switch-ON/OFF the machine's safety components, as prescribed by the European standards (Safety requirements of fluid technology systems and components-hydraulics, EN-982).

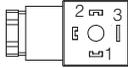
6 OPTIONS FOR -A EXECUTION

6.1 Option /6 6 Vdc coil instead of standard 12 Vdc, to be used in case of power supply 12 Vdc

6.2 Option /18 18 Vdc coil instead of standard 12 Vdc, to be used with electronic drivers not supplied by Atos

7 CONNECTIONS FOR -A EXECUTION

SOLENOID POWER SUPPLY CONNECTOR	
PIN	Signal description
1	SUPPLY
2	SUPPLY
3	GND



8 ANALOG INTEGRAL DRIVERS -AE - OPTIONS

Standard driver execution provides on the 7 pin main connector:

Power supply - 24Vdc must be appropriately stabilized or rectified and filtered; a 2,5 A safety fuse is required in series to the driver power supply. Apply at least a 10000 μ F/40 V capacitance to single phase rectifiers or a 4700 μ F/40 V capacitance to three phase rectifiers

Reference input signal - analog differential input with ± 10 Vdc nominal range (pin D,E), proportional to desired coil current.

Monitor output signal - analog output signal proportional to the actual valve's coil current (1V monitor = 1A coil current)

Following options are available to adapt standard execution to special application requirements:

8.1 Option /I

It provides the 4 \pm 20 mA current reference signal instead of the standard ± 10 Vdc. Monitor output signal is still the standard ± 10 Vdc.

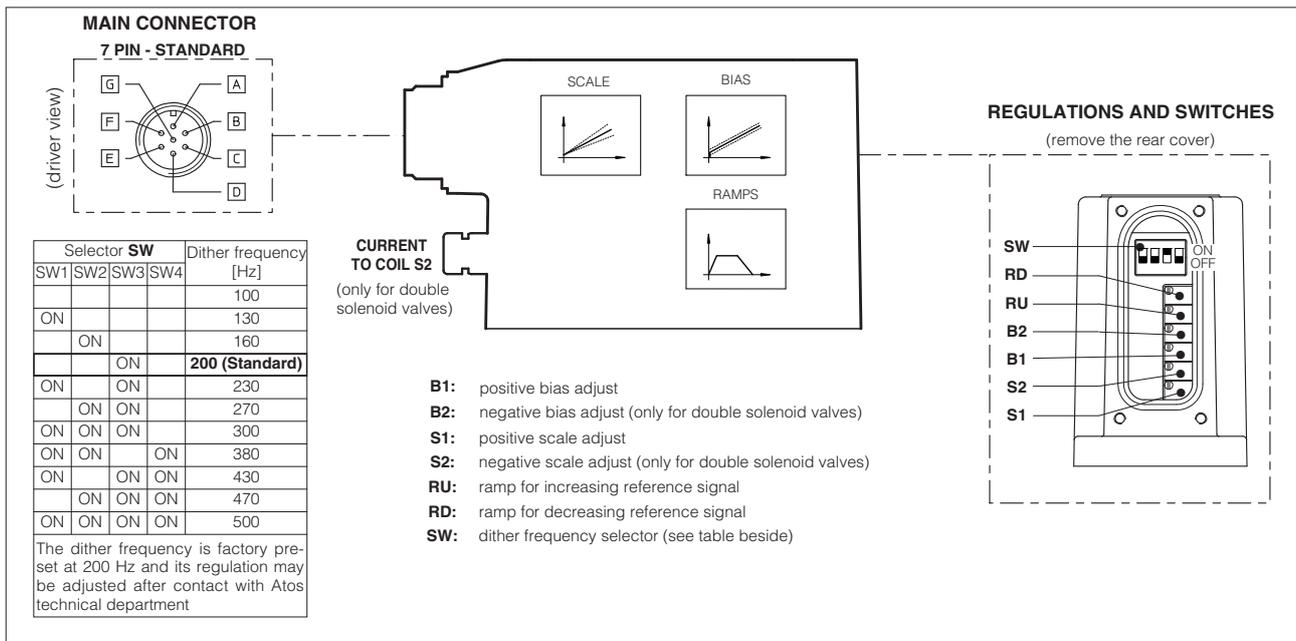
It is normally used in case of long distance between the machine control unit and the valve or where the reference signal can be affected by electrical noise; the valve functioning is disabled in case of reference signal cable breakage.

8.2 Option /Q

It provides the possibility to enable or disable the valve functioning without cutting the power supply (the valve functioning is disabled but the driver current output stage is still active). To enable the driver supply a 24Vdc on the enable input signal.

8.3 Possible combined options: /IQ

9 ANALOG INTEGRAL DRIVERS -AE - MAIN FUNCTIONS AND ELECTRONIC CONNECTIONS



9.1 ELECTRONIC CONNECTIONS - 7 PIN MAIN CONNECTORS

PIN	SIGNAL	TECHNICAL SPECIFICATIONS	NOTES
A	V+	Power supply 24 Vdc for solenoid power stage and driver logic	Input - power supply
B	V0	Power supply 0 Vdc for solenoid power stage and driver logic	Gnd - power supply
C (1)	AGND	Ground - signal zero for MONITOR signal	Gnd - analog signal
	ENABLE	Enable (24 Vdc) or disable (0 Vdc) the driver (for /Q option)	Input - on/off signal
D	INPUT+	Reference analog differential input: ± 10 Vdc maximum range (4 \div 20 mA for /I option) Default setting for single solenoid valves: 0 \div +10 Vdc	Input - analog signal
E	INPUT -	Default setting for double solenoid valves: ± 10 Vdc	
F	MONITOR	Monitor analog output: ± 5 Vdc maximum range; 1 V = 1 A	Output - analog signal
G	EARTH	Internally connected to the driver housing	

Note: (1) with /Q option ENABLE signal replaces AGND on pin C; MONITOR signal is referred to pin B.

A minimum time of 60ms to 160ms have to be considered between the driver energizing with the 24 Vdc power supply and when the valve is ready to operate. During this time the current to the valve coils is switched to zero

10 DIGITAL INTEGRAL DRIVERS -AES - OPTIONS

Standard driver execution provides on the 7 pin main connector:

Power supply - 24Vdc must be appropriately stabilized or rectified and filtered; a 2,5 A safety fuse is required in series to each driver power supply. Apply at least a 10000 μ F/40 V capacitance to single phase rectifiers or a 4700 μ F/40 V capacitance to three phase rectifiers.

Reference input signal - analog differential input with ± 10 Vdc nominal range (pin D,E), proportional to desired coil current (4 \div 20 mA with cable break detection, ± 10 mA, ± 20 mA or 0 \div 20 mA software selectable)

Monitor output signal - analog output signal proportional to the actual valve's coil current (1V monitor = 1A coil current)

Following options are available to adapt standard execution to special application requirements:

10.1 Option /Q

To enable the driver, supply 24Vdc on pin C referred to pin B: when the enable signal is set to zero the valve status is software selectable, by factory default the valve functioning is disabled (zero current to the solenoid) but the driver current output stage is still active. For the complete list of selectable status, see tab. G115.

10.2 Option /Z

It provides, on the 12 pin main connector, the following additional features:

Logic power supply

Separated power supply for the solenoid (pin 1, 2) and for the digital electronic circuits (pin 9, 10).

Cutting solenoid power supply allows to interrupt the valve functioning but keeping energized the digital electronics thus avoiding fault conditions of the machine fieldbus controller. This condition allows to realize safety systems in compliance with European Norms EN13849-1 (ex EN954-1).

Enable Input Signal

To enable the driver, supply 24Vdc on pin 3 referred to pin 2: when the enable signal is set to zero the valve status is software selectable, by factory default the valve functioning is disabled (zero current to the solenoid) but the driver current output stage is still active. For the complete list of selectable status, see tab. G115.

Fault Output Signal

Fault output signal indicates fault conditions of the driver (solenoid short circuits/not connected, reference signal cable broken for 4 \div 20mA input, etc.). Fault presence corresponds to 0 Vdc, normal working corresponds to 24Vdc (pin 11 referred to pin 2): Fault status is not affected by the Enable input signal

10.3 Option /W - only for valves coupled with pressure compensator type HC-011 or KC-011 (see tab. D150).

It provides, on the 12 pin main connector, the above option /Z features plus the hydraulic power limitation function.

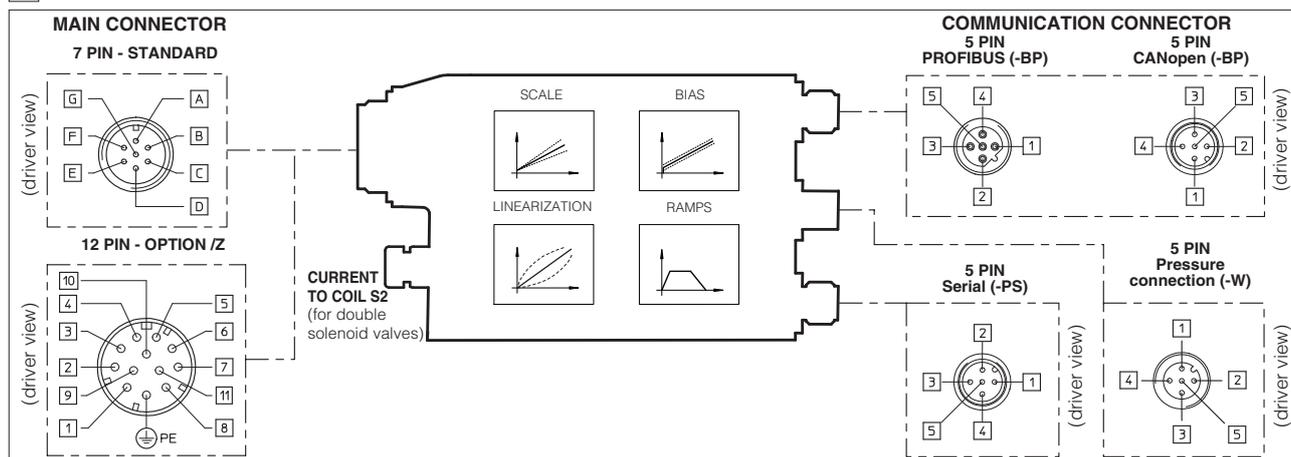
The driver receives the flow reference signal by the analog external input INPUT+ and a pressure transducer remotely installed in the hydraulic system, has to be connected to the driver's analog input TR.

When the actual requested hydraulic power $p \times Q$ (TR \times INPUT+) reaches the max power limit ($p \times Q_1$), internally set by software, the driver automatically reduces the flow regulation of the valve. The higher is the pressure feedback the lower is the valve's regulated flow:

$$\text{Flow regulation} = \text{Min} \left(\frac{\text{PowerLimit [sw setting]}}{\text{Transducer Pressure [TR]}}; \text{Flow Reference [INPUT+]} \right)$$

For detailed information on hydraulic power limitation, see tab. G115

11 DIGITAL INTEGRAL DRIVERS -AES - MAIN FUNCTIONS AND ELECTRONIC CONNECTIONS



11.1 ELECTRONIC CONNECTIONS - 7 & 12 PIN MAIN CONNECTORS (-AES standard, /Q, /Z, /W options)

Standard 7pin	/Z, /W options 12pin	SIGNAL	TECHNICAL SPECIFICATIONS	NOTES
A	1	V+	Power supply 24 Vdc for solenoid power stage (and for driver logic on 7 pin connection)	Input - power supply
B	2	V0	Power supply 0 Vdc for solenoid power stage (and for driver logic on 7 pin connection)	Gnd - power supply
C (option /Q)	3	ENABLE	Enable (24 Vdc) or disable (0 Vdc) the driver	Input - on/off signal
D	4	INPUT+	Reference analog input: ± 10 Vdc ± 20 mA maximum range software selectable Default setting for single solenoid valves: $0 \div +10$ Vdc, differential input Default setting for double solenoid valves: ± 10 Vdc, differential input /Z and /W options: common mode INPUT+ referred to AGND	Input - analog signal
E	-	INPUT -		Input - analog signal
C	5	AGND	Ground - signal zero for MONITOR signal (INPUT+ signal only for /Z and /W options)	Gnd - analog signal
F	6	MONITOR	Monitor analog output: ± 5 Vdc maximum range; Default setting $1V = 1A$	Output - analog signal
-	7	NC	do not connect	
-	8	MONITOR 2	2nd monitor analog output: ± 5 Vdc maximum range (only for /W option)	Output - analog signal
-	9	VL+	Power supply 24 Vdc for driver logic	Input - power supply
-	10	VL0	Power supply 0 Vdc for driver logic	Gnd - power supply
-	11	FAULT	Fault (0 Vdc) or normal working (24 Vdc)	Output - on/off signal
G	PE	EARTH	Internally connected to the driver housing	

Note: A minimum time of 270 to 340 ms have to be considered between the driver energizing with the 24 VDC power supply and when the valve is ready to operate. During this time the current to the valve coils is switched to zero.

11.2 ELECTRONIC CONNECTIONS - 5 PIN COMMUNICATION AND PRESSURE TRANSDUCER CONNECTORS

PIN	-PS Serial		-BC CANopen		-BP PROFIBUS DP		/W option	
	SIGNAL	TECHNICAL SPECIF.	SIGNAL	TECHNICAL SPECIF.	SIGNAL	TECHNICAL SPECIF.	SIGNAL	TECHNICAL SPECIF.
1	NC	do not connect	CAN_SHLD	Shield	+5V	for termination	VT	transducer power supply 24 Vdc
2	NC	do not connect	NC	do not connect	LINE-A	Bus line (high)	TR	transducer signal $0 \div 10$ Vdc
3	RS_GND	Signal zero data line	CAN_GND	Signal zero data line	DGND	Data line and termination Signal zero	AGND	Signal zero for power supply and signal
4	RS_RX	Receiving data line	CAN_H	Bus line (high)	LINE-B	Bus line (low)	NC	do not connect
5	RS_TX	Transmitting data line	CAN_L	Bus line (low)	SHIELD	do not connect	NC	do not connect

12 SOFTWARE TOOLS

The driver configuration and parameters can be easily set with the Atos E-SW programming software, available in three different versions according to the driver's communication execution: E-SW-PS (Serial), E-SW-BC (CANopen) and E-SW-BP (PROFIBUS DP). Programming software E-SW-BC and E-SW-BP, for BC and BP drivers, can be also used to modify the valve's parameterization through the serial communication interface, without disconnecting the valve from the machine's bus line.

For a more detailed description of software interface, PC requirements, adapters, cables and terminators, please refer to technical table G500.

Programming software, must be ordered separately:

E-SW-* (mandatory - first supply) = Dvd including E-SW-* software installer and operator manuals; it allows the registration to Atos digital service

E-SW-*-N (optional - next supplies) = as above but not allowing the registration to Atos digital service

On first supply of the E-SW-* software, it is required to apply for the registration in the Atos download area: www.download.atos.com.

Once the registration is completed, the password will be sent by email.

The software remains active for 10 days from the installation date and then it stops until the user inputs his password.

With the password you can also download, in your personal area, the latest releases of the Atos software, manuals, drivers and configuration files.

13 MAIN CHARACTERISTICS OF PROPORTIONAL DIRECTIONAL VALVES

Assembly position	Any position		
Subplate surface finishing	Roughness index, \sqrt{Ra} flatness ratio 0,01/100 (ISO 1101)		
Ambient temperature	$-20^{\circ}\text{C} \div +70^{\circ}\text{C}$ for -A execution; $-20^{\circ}\text{C} \div +60^{\circ}\text{C}$ for -AE, -AES, -AEG and -AEZ executions		
Fluid	Hydraulic oil as per DIN 51524 ... 535 for other fluids see section [I]		
Recommended viscosity	$15 \div 100$ mm ² /s at 40°C (ISO VG 15÷100)		
Fluid contamination class	ISO 18/15 achieved with in line filters of 10 μm and $\beta_{10} \geq 75$ (recommended)		
Fluid temperature	$-20^{\circ}\text{C} \div +60^{\circ}\text{C}$ (standard and /WG seals) $-20^{\circ}\text{C} \div +80^{\circ}\text{C}$ (/PE seals)		
Coil voltage	12 Vdc coil	6 Vdc coil	18 Vdc coil
Coil resistance R at 20°C	$3 \div 3,3 \Omega$	$2 \div 2,2 \Omega$	$13 \div 13,4 \Omega$
Max. solenoid current	1,9 A	2,35 A	0,9 A
Max. power	30 Watt		
Protection degree (CEI EN-60529)	IP65 for -A execution; IP67 for -AE, -AES, -AEG and -AEZ executions		
Duty factor	Continuous rating (ED=100%)		

14 DIAGRAMS (based on mineral oil ISO VG 46 at 50 °C)

14.1 Regulation diagrams

- DPZO-1:
1 = linear spool L5
2 = differential spool S5, D5
- DPZO-2:
3 = progressive spool S3, D3
4 = progressive spool S5, D5
5 = linear spool L5
- DPZO-3:
6 = linear spool L5
7 = progressive spool S5, D5
- DPZO-6:
8 = linear spool L5
9 = progressive spool S5, D5

Note:

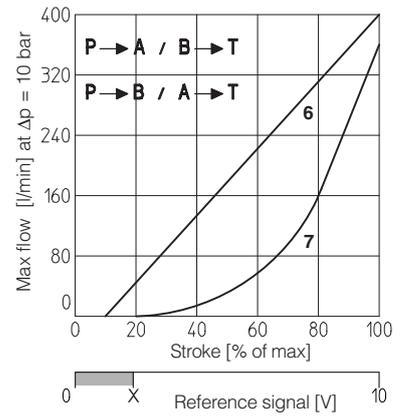
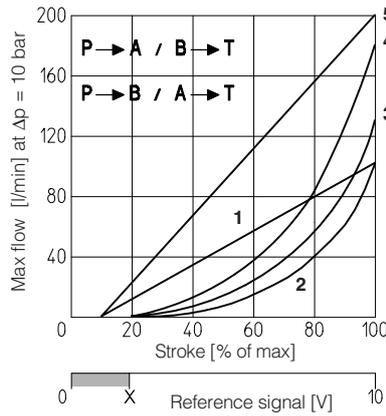
Hydraulic configuration vs reference signal for:
 - double solenoid valves (standard and option /B)

Reference signal $0 \div +10 \text{ V}$ } $P \rightarrow A / B \rightarrow T$
 $12 \div 20 \text{ mA}$

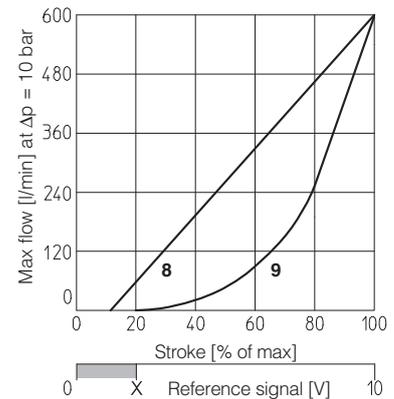
Reference signal $0 \div -10 \text{ V}$ } $P \rightarrow B / A \rightarrow T$
 $4 \div 12 \text{ mA}$

Hydraulic configuration vs reference signal
 for single solenoid valves:

Reference signal:
 $0 \div +10 \text{ V}$ } $P \rightarrow A / B \rightarrow T$ (standard)
 $4 \div 20 \text{ mA}$ } $P \rightarrow B / A \rightarrow T$ (option /B)



X = Threshold for bias activation depending to the valve type and amplifier type



14.2 Flow /Δp diagram

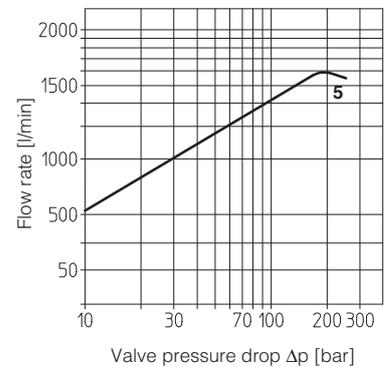
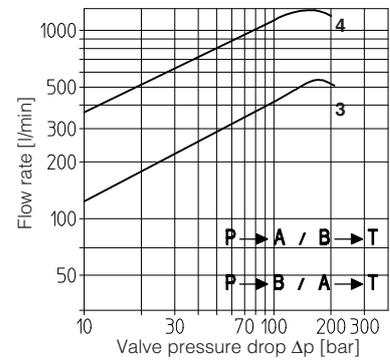
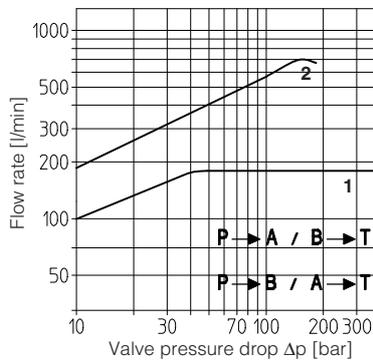
Stated at 100% of valve stroke

DPZO-1:
1 = spool L5, S5, D5

DPZO-2:
2 = spool L5, S5, D5
3 = spool S3, D3

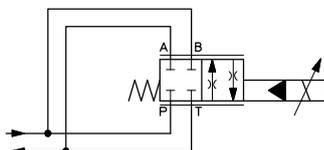
DPZO-3:
4 = spool L5, S5, D5

DPZO-6:
5 = spool L5, S5, D5



14.3 Operation as throttle valve

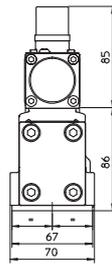
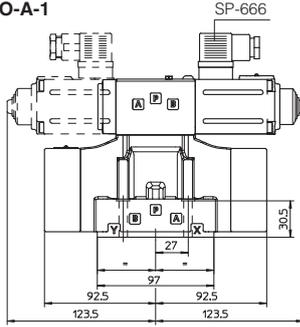
Single solenoid valves (*51) can be used as simple throttle valves:
 $P_{max} = 250 \text{ bar}$
 For this application, the use of valve -T, -TE or -TES (see tab. F172 and F175) is advisable (consult our technical office)



DPZO-*	151-L5	251-L5	351-L5	651-L5
Max flow [l/min]	320	650	1300	2000
Δp [bar]	30	30	30	30

DPZO-A(*)-1 (dotted line = double solenoid version)

DPZO-A-1



ISO 4401: 2005

Mounting surface: 4401-05-05-0-05 (see table P005)

Fastening bolts:

4 socket head screws M6x40 class 12.9

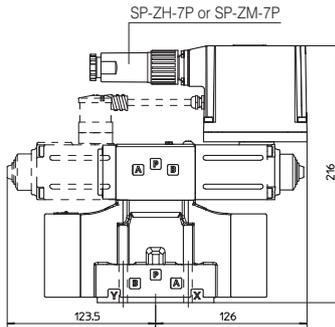
Tightening torque = 15 Nm

Seals: 5 OR 2050; 2 OR 108

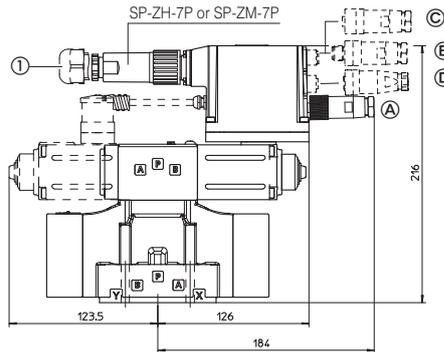
Diameter of ports A, B, P, T: $\varnothing = 11$ mm;

Diameter of ports X, Y: $\varnothing = 5$ mm;

DPZO-AE-1



DPZO-AES-(AEG, AEZ)-1



Mass [kg]

	A	AE, AES, AEG, AEZ
DPZO-*-15*	7,7	8,1
DPZO-*-17*	8,6	9

-AES EXECUTION

- ① Dotted line = 12 pin connector SP-ZH-12P for -AES option /Z, -AEG, -AEZ

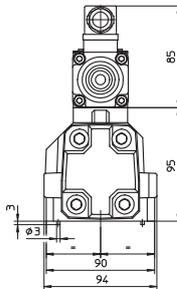
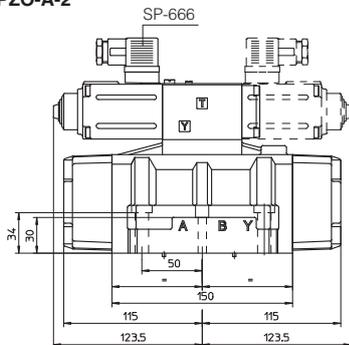
NOTE: The overall height is increased by 30 mm for /G option (0,9 kg).

For option /B the proportional solenoid and the electronics (in case of execution -AE and -AES) are at side of port B of the main stage.

- Ⓐ -PS communication interface, SP-ZH-5P connector
- Ⓑ -BP communication interface, SP-ZH-5P/BP connector
- Ⓒ -BC communication interface, SP-ZH-5P connector
- Ⓓ Pressure transducer interface (option /W) port, SP-ZH-5PM connector

DPZO-A(*)-2 (dotted line = double solenoid version)

DPZO-A-2



ISO 4401: 2005

Mounting surface: 4401-07-07-0-05 (see table P005)

Fastening bolts:

4 socket head screws M10x50 class 12.9

Tightening torque = 70 Nm

2 socket head screws M6x40 class 12.9

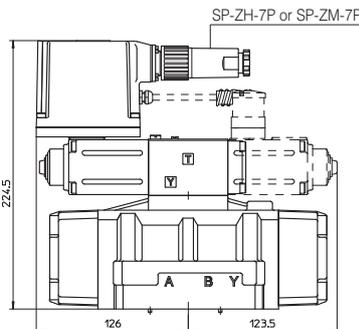
Tightening torque = 15 Nm

Seals: 4 OR 130; 3 OR 109/70

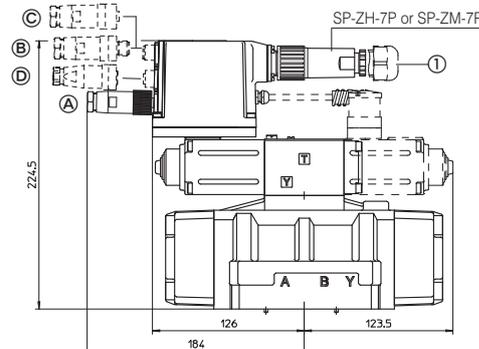
Diameter of ports A, B, P, T: $\varnothing = 20$ mm;

Diameter of ports X, Y: $\varnothing = 7$ mm;

DPZO-AE-2



DPZO-AES-(AEG, AEZ)-2



Mass [kg]

	A	AE, AES, AEG, AEZ
DPZO-*-25*	11,9	12,3
DPZO-*-27*	12,8	13,2

-AES EXECUTION

- ① Dotted line = 12 pin connector SP-ZH-12P for -AES option /Z, -AEG, -AEZ

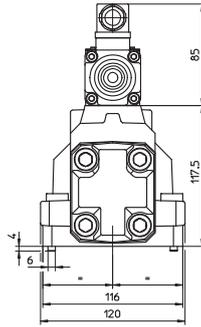
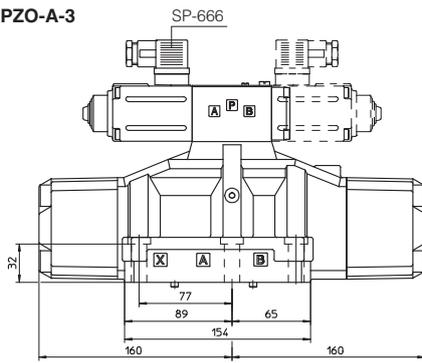
NOTE: The overall height is increased by 30 mm for /G option (0,9 kg).

For option /B the proportional solenoid and the electronics (in case of execution -AE and -AES) are at side of port B of the main stage.

- Ⓐ -PS communication interface, SP-ZH-5P connector
- Ⓑ -BP communication interface, SP-ZH-5P/BP connector
- Ⓒ -BC communication interface, SP-ZH-5P connector
- Ⓓ Pressure transducer interface (option /W) port, SP-ZH-5PM connector

DPZO-A(*)-3 (dotted line = double solenoid version)

DPZO-A-3



ISO 4401: 2005

Mounting surface: 4401-08-08-0-05 (see table P005)

Fastening bolts:

6 socket head screws M12x50 class 12.9

Tightening torque = 125 Nm

Seals: 4 OR 4112; 3 OR 3056

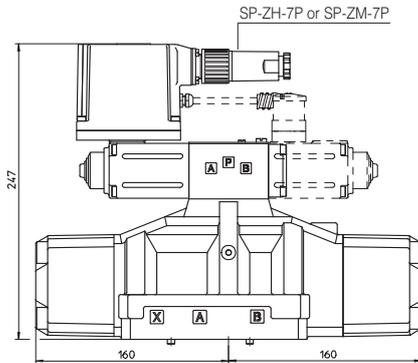
Diameter of ports A, B, P, T: $\varnothing = 24$ mm;

Diameter of ports X, Y: $\varnothing = 7$ mm;

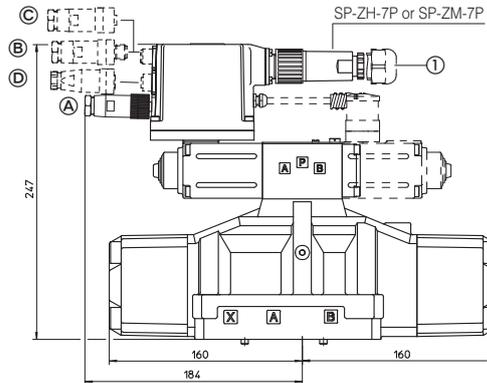
Mass [kg]

	A	AE, AES, AEG, AEZ
DPZO-*-35*	17,1	17,5
DPZO-*-37*	18	18,4

DPZO-AE-3



DPZO-AES (AEG, AEZ)-3



-AES EXECUTION

- ① Dotted line = 12 pin connector SP-ZH-12P for -AES option /Z, -AEG, -AEZ

- Ⓐ -PS communication interface, SP-ZH-5P connector
- Ⓑ -BP communication interface, SP-ZH-5P/BP connector
- Ⓒ -BC communication interface, SP-ZH-5P connector
- Ⓓ Pressure transducer interface (option /W) port, SP-ZH-5PM connector

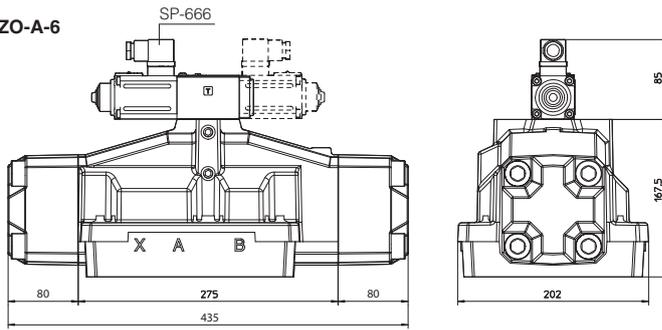
NOTE: The overall height is increased by 30 mm for /G option (0,9 kg).

For option /B the proportional solenoid and the electronics (in case of execution -AE and -AES) are at side of port B of the main stage.

17 INSTALLATION DIMENSIONS FOR DPZO-6 [mm]

DPZO-A(*)-6 (dotted line = double solenoid version)

DPZO-A-6



ISO 4401: 2005

Mounting surface: 4401-08-08-0-05 (see table P005)

Fastening bolts:

6 socket head screws M12x50 class 12.9

Tightening torque = 125 Nm

Seals: 4 OR 4112; 3 OR 3056

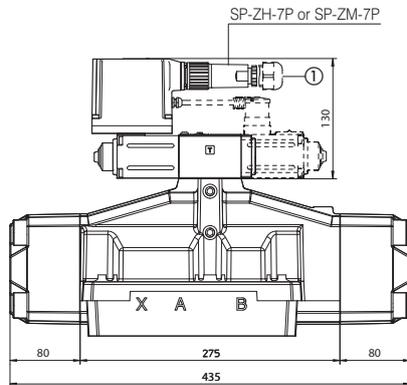
Diameter of ports A, B, P, T: $\varnothing = 24$ mm;

Diameter of ports X, Y: $\varnothing = 7$ mm;

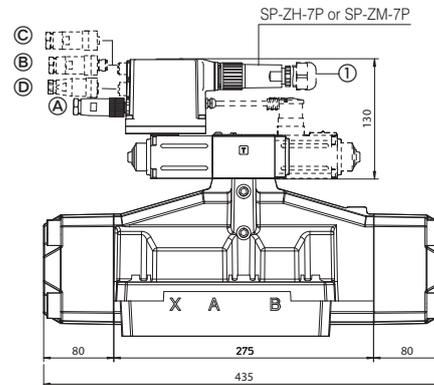
Mass [kg]

	A	AE, AES
DPZO-*35*	17,1	17,5
DPZO-*37*	18	18,4

DPZO-AE-6



DPZO-AES-3



-AES EXECUTION

- ① Dotted line = 12 pin connector SP-ZH-12P for -AES option /Z, /W
-AEG, -AEZ

- Ⓐ -PS communication interface, SP-ZH-5P connector
- Ⓑ -BP communication interface, SP-ZH-5P/BP connector
- Ⓒ -BC communication interface, SP-ZH-5P connector
- Ⓓ Pressure transducer interface (option /W) port, SP-ZH-5PM connector

NOTE: The overall height is increased by 30 mm for /G option (0.9 kg).

For option /B the proportional solenoid and the electronics (in case of execution -AE and -AES) are at side of port B of the main stage.

18 MODEL CODES OF POWER SUPPLY AND COMMUNICATION CONNECTORS (to be ordered separately)

VALVE VERSION	-A	-AE, -AES		-AES/Z -/W -AEG -AEZ	-AES/W (transducer)	-Serial (-PS) or CANopen (-BC)	PROFIBUS DP (-BP)
CONNECTOR CODE	SP-666	SP-ZH-7P	SP-ZM-7P	SP-ZH-12P	SP-ZH-5PM	SP-ZH-5P	SP-ZH-5P/BP
PROTECTION DEGREE	IP65	IP67	IP67	IP67	IP67	IP67	IP67
DATA SHEET	K500	G110, G115, G120, K500				G115, K500	

connectors supplied with the valve