

new line

Zero overlap servoproportionals digital closed loop directional



Servoproportional valves, direct or pilot operated, ensure best accuracy & performance in electrohydraulic axis position controls thanks to their high dynamic response coupled to the zero overlap spools

New 2015

① DLHZO-TEB-SN-NP series 10 - zero overlap servoproportionals - basic [table GS208](#)

New digital servoproportional TEB valves replaces current analog TE valves. Sampling availability within the end of the year. During 2015 new TEB valves will progressively substitute current analog ones.

Improvements vs analog TE:

Ingress protection IP66/67
Rugged construction for vibration & shocks
Ambient temperature range -40°C ÷ $+60^{\circ}\text{C}$
White zinc protection coating on driver case
Tropical coating on electronic PCB

Valve performance:

same of current analog TE valves

Analog reference signal: $0\div\pm 10\text{ V}$ or $4\div 20\text{ mA}$

Valve setting: by software through USB port

Alternated P/Q control -SN = none

Fieldbus interface -NP = not present

Valve dimension:

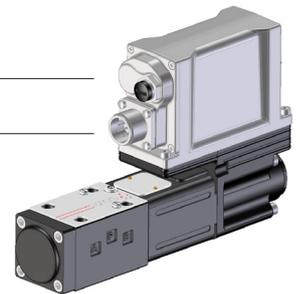
same of TES valves series 50

Prices = similar to analog TE valves

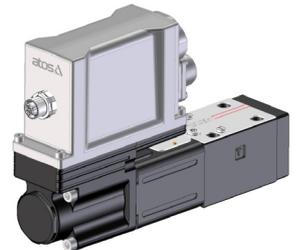
USB port for software setting

Standard 7 pin connector:
power supply, analog reference & monitor - $0\div\pm 10\text{ V}$ or $4\div 20\text{ mA}$

Optional 12 pin connector:
add enable & fault



LVDT main stage spool position port, for pilot operated valves



② DLHZO-TEB-SN-*** series 50 - zero overlap servoproportionals - full [table GS210](#)

Servoproportional TES valves series 50 replaces current digital TES valves series 40. Now available for serial supply.

Improvements vs TES series 40:

Ingress protection IP66/67
Rugged construction for high vibration & shocks
Ambient temperature range -40°C ÷ $+60^{\circ}\text{C}$
Black zinc protection coating on driver case
Tropical coating on electronic PCB
External diagnostic by leds (green/red)

TES series 50 improvements vs TEB

Optional Fieldbus communication
Optional P/Q controls
External diagnostic by leds (green/red)

Valve performance:

same of current TES valves series 40

Analog reference signal: $0\div\pm 10\text{ V}$ or $4\div 20\text{ mA}$

Valve setting: by software through USB port

Alternated P/Q control -SN = none

Fieldbus interface ***

for digital reference, valve's diagnostics & setting:

-NP = not present

-BC = CANopen

-BP = PROFIBUS DP

-EH = EtherCAT (not available for TES series 40)

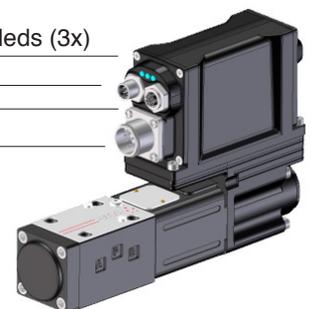
Prices = similar to TES valves series 40

Status leds (3x)

Fieldbus interface ports

Standard 7 pin connector:
power supply, analog reference & monitor - $0\div\pm 10\text{ V}$ or $4\div 20\text{ mA}$

Optional 12 pin connector:
add double supply, enable & fault



USB port for software setting

LVDT main stage spool position port, for pilot operated valves



③ **DLHZO-TEZ-S*-**** series 50 with **-S*** options for alternated **P/Q control** *table GS212*

Rugged servoproportional TES valves series 50 with -S options replaces current digital TES valves series 40. Now available for serial supply.

-S* options:

add a pressure-force control to the valve standard spool-flow control (see fig. A); the alternated P/Q function is the same of current TES valves series 40.

Alternated P/Q control

- SP = pressure control (1 pressure transducer)
- SF = force control (2 pressure transducers)
- SL = force control (load cell)

Valve performance & features:

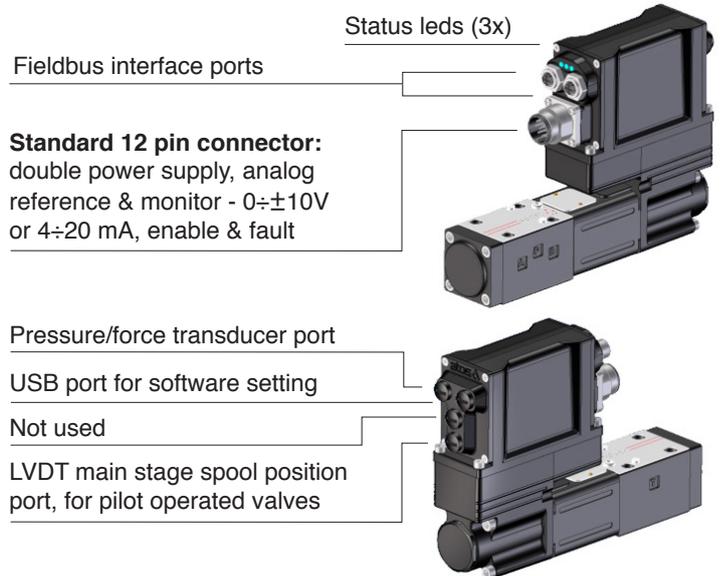
same of TES valves series 50

Analog reference signal: $0 \div \pm 10$ V or $4 \div 20$ mA

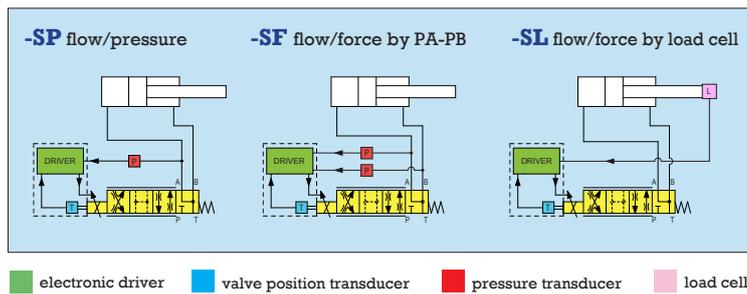
Valve setting: by software through USB port

Fieldbus interface **: see section ②

Prices = similar to -S option for TES valves series 40

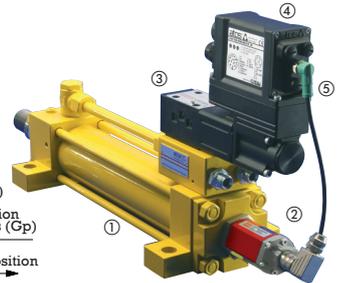
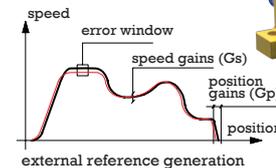


Pressure-force/spool-flow combined controls -S* option Fig.A



Servoproportional + Axis controller Fig.B

servocylinder ① with position transducer ②, servoproportional valve ③ with integral TEZ controller ④, connections to position transducers ⑤



④ **DLHZO-TEZ-S*-**** series 50 - servoproportional valves plus **axis controller** *table FS230*

Rugged servoproportional TEZ valves series 50 replaces current digital TEZ valves series 10. Now available for sampling. They will be released for serial supply within for the end of the year.

Axis controller:

digital servoproportional include valve's driver + axis controller to perform the position closed loop of any linear or rotative hydraulic actuator (see fig. B).

Valve performance & features:

same of TES valves series 50

Analog reference signal: $0 \div \pm 10$ V or $4 \div 20$ mA

Valve setting: by software through USB port

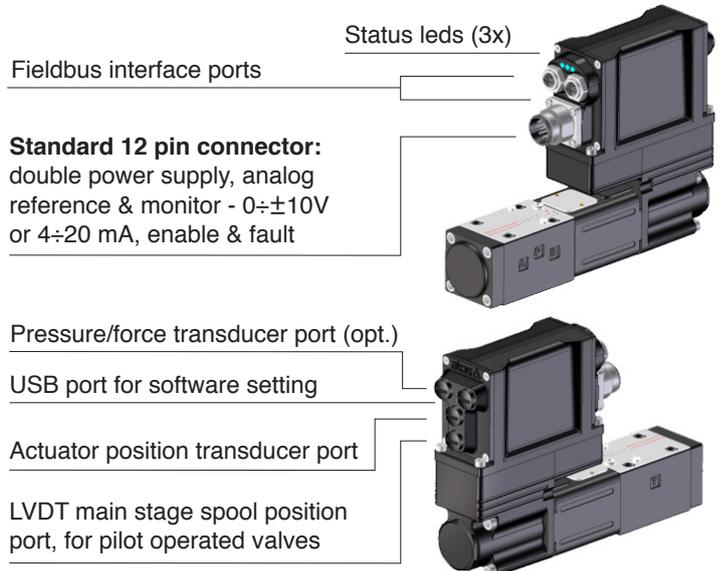
Axis position transducer *:

- A = analog or potentiometer
- D = digital SSI or incremental encoder

-S* options: see section ③

Fieldbus interface **: see section ②

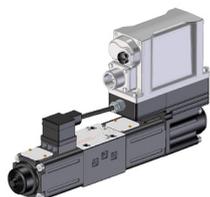
Prices = similar to TEZ valves series 10



Servoproportionals overview

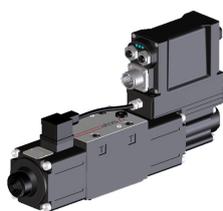
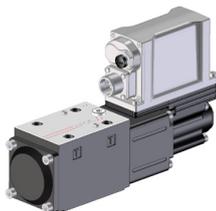
Direct, 4 way - Size 06 *technical tables FS168, FS180*

DHZO-TEB-SN-NP-070	DLHZO-TES-SN-NP-040	DLHZO-TES-SF-BC-060	DLHZO-TEZ-D-SN-BP-040
High case Height +21,5 mm	Low case Height +6,5 mm	High case Height +21,5 mm	High case Height -22 mm



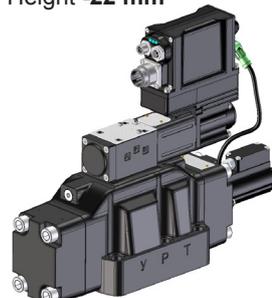
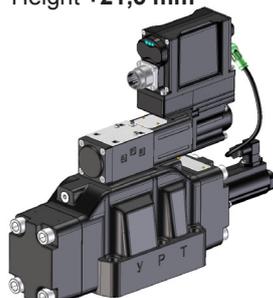
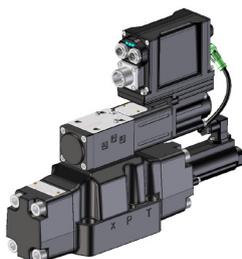
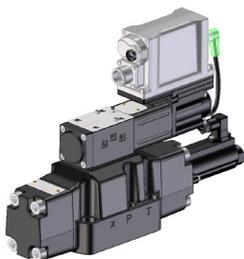
Direct, 4 way - Size 10 *technical tables FS168, FS180*

DLKZOR-TEB-SN-NP-140	DKZOR-TES-SN-EH-170	DLKZOR-TES-SL-BC-140	DLKZOR-TEZ-A-SF-BP-160
Low case Height +6,5 mm	High case Height +21,5 mm	High case Height +21,5 mm	High case Height -22 mm



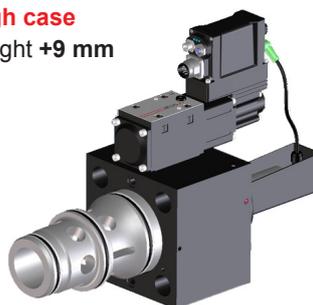
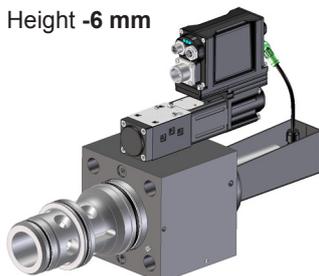
Piloted, 4 way - Size 10 ÷ 35 *technical table FS178*

DPZO-LEB-SN-NP-260	DPZO-LES-SN-EH-260	DPZO-LES-SP-NP-470	DPZO-LEZ-D-SN-BC-460
Low case Height +6,5 mm	Low case Height +6,5 mm	High case Height +21,5 mm	High case Height -22 mm



Piloted, 3 way - Size 25 ÷ 80 *technical tables FS340*

LIQZO-LEB-SN-NP-323	LIQZP-LES-SN-BC-503	LIQZP-LES-SP-BP-633
Low case Height -6 mm	Low case Height -6 mm	High case Height +9 mm



Hydraulic configurations

Size 06 & 10

single solenoid DLH/DLK



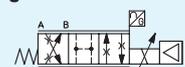
configuration --40
fail safe 1

single solenoid DLH/DLK



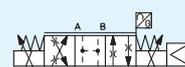
configuration --40
fail safe 3

single solenoid DLH/DLK



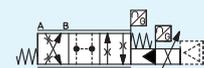
configuration --60
no fail safe

two solenoids DH/DK

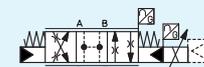


configuration --70

Size 10 ÷ 35

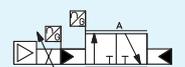


configuration --60



configuration --70

Size 25 ÷ 80



configuration 3 way

Note: "Height" data are referred to the highness difference respect the correspondent product of actual standard range

new line

Positive overlap HP proportionals digital closed loop directional



High Performance proportional valves, direct or pilot operated, perform high dynamics and precise directional/flow control with safety rest position thanks to positive overlap spools. They can also be used in speed closed loop controls

New 2015

⑤ DHZO-TEB-SN-NP series 10 - positive overlap HP proportionals - **basic** *table GS208*

New digital High Performance TEB valves replaces current analog TE valves. Sampling availability within the end of the year. During 2015 new TEB valves will progressively substitute current analog ones.

Improvements vs analog TE:

Ingress protection IP66/67

Rugged construction for vibration & shocks

Ambient temperature range $-40^{\circ}\text{C} \div +60^{\circ}\text{C}$

White zinc protection coating on driver case

Tropical coating on electronic PCB

Valve performance:

same of current analog TE valves

Analog reference signal: $0 \div \pm 10\text{ V}$ or $4 \div 20\text{ mA}$

Valve setting: by software through USB port

Alternated P/Q control -SN = none

Fieldbus interface -NP = not present

Valve dimension:

same of TES valves series 50

Prices = similar to analog TE valves

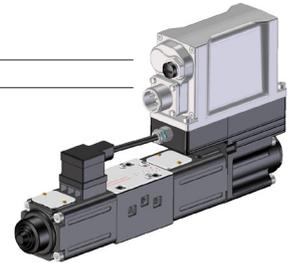
USB port for software setting

Standard 7 pin connector:

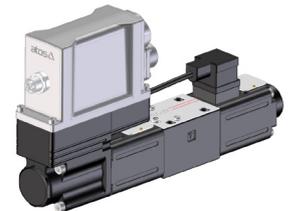
power supply, analog reference & monitor - $0 \div \pm 10\text{ V}$ or $4 \div 20\text{ mA}$

Optional 12 pin connector:

add enable & fault



LVDT main stage spool position port, for pilot operated valves



⑥ DHZO-TES-SN-*** series 50 - positive overlap HP proportionals - **full** *table GS210*

High Performance TES valves series 50 replaces current digital TES valves series 40. Now available for serial supply.

Improvements vs TES series 40:

Ingress protection IP66/67

Rugged construction for high vibration & shocks

Ambient temperature range $-40^{\circ}\text{C} \div +60^{\circ}\text{C}$

Black zinc protection coating on driver case

Tropical coating on electronic PCB

External diagnostic by leds (green/red)

TES series 50 improvements vs TEB

Optional Fieldbus communication

Optional P/Q controls

External diagnostic by leds (green/red)

Valve performance:

same of current TES valves series 40

Analog reference signal: $0 \div \pm 10\text{ V}$ or $4 \div 20\text{ mA}$

Valve setting: by software through USB port

Alternated P/Q control -SN = none

Fieldbus interface **

for digital reference, valve's diagnostics & setting:

-NP = not present

-BC = CANopen

-BP = PROFIBUS DP

-EH = EtherCAT (not available for TES series 40)

Prices = similar to TES valves series 40

Status leds (3x)

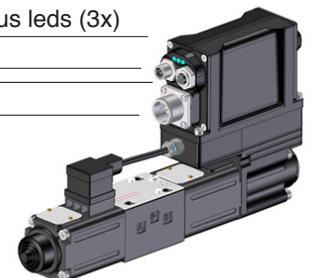
Fieldbus interface ports

Standard 7 pin connector:

power supply, analog reference & monitor - $0 \div \pm 10\text{ V}$ or $4 \div 20\text{ mA}$

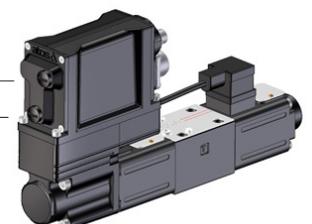
Optional 12 pin connector:

add double supply, enable & fault



USB port for software setting

LVDT main stage spool position port, for pilot operated valves



⑦ **DHZO-TES-S*-**** series 50 with **-S*** options for alternated P/Q control *table GS212*

Rugged High Performance TES valves series 50 with -S options replaces current digital TES valves series 40. Now available for serial supply.

-S* options:

add a pressure-force control to the valve standard spool-flow control (see fig. A); the alternated P/Q function is the same of current TES valves series 40.

Alternated P/Q control

- SP = pressure control (1 pressure transducer)
- SF = force control (2 pressure transducers)
- SL = force control (load cell)

Valve performance & features:

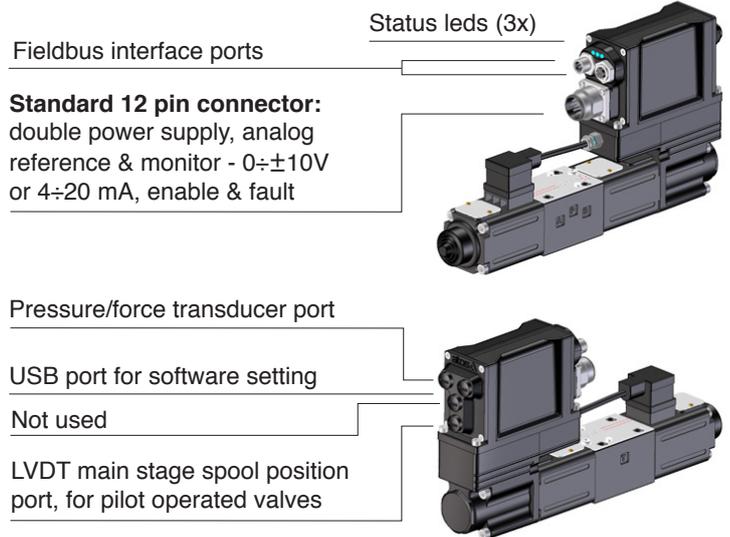
same of TES valves series 50

Analog reference signal: 0÷±10V or 4÷20 mA

Valve setting: by software through USB port

Fieldbus interface **: see section ⑥

Prices = similar to -S option for TES valves series 40



new line
Positive overlap proportionals
 2 stage digital single closed loop directional



New 2015

⑧ **DPZO-TEB-SN-NP** series 50 - 2 stage positive overlap proportionals - **basic** *table GS208*

New digital TEB valves replaces current analog TE pilot operated proportional valves. Sampling availability within the end of the year. During 2015 new TEB valves will progressively substitute current analog ones.

Improvements vs analog TE:

- Ingress protection IP66/67
- Rugged construction for vibration & shocks
- Ambient temperature range -40°C÷+60°C
- White zinc protection coating on driver case
- Tropical coating on electronic PCB

Valve performance:

same of current analog TE valves

Analog reference signal: 0÷±10V or 4÷20 mA

Valve setting: by software through USB port

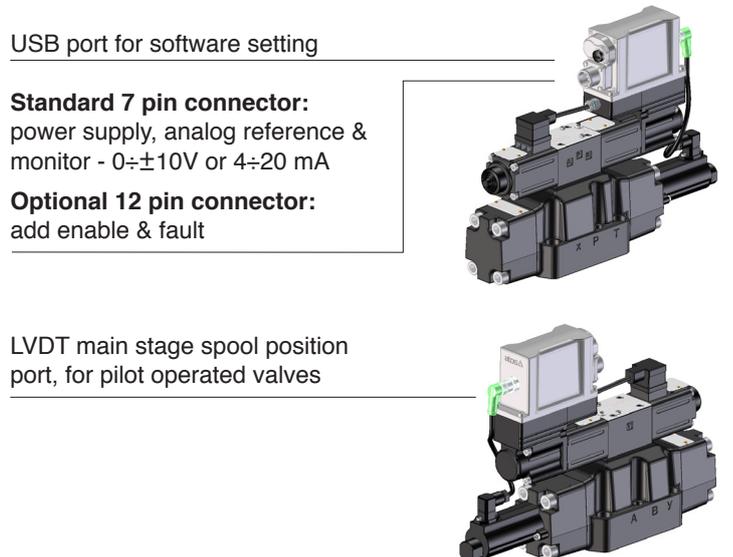
Alternated P/Q control -SN = none

Fieldbus interface -NP = not present

Valve dimension:

same of TES valves series 50

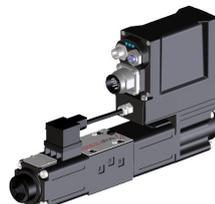
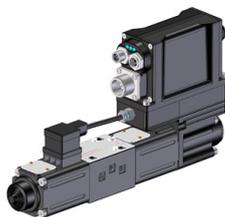
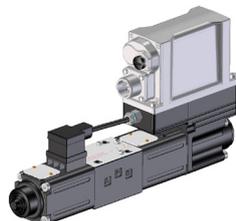
Prices = similar to analog TE valves



High Performance proportionals overview

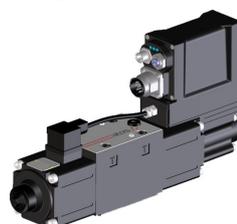
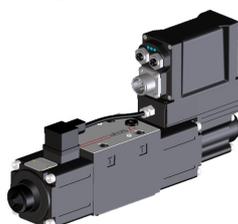
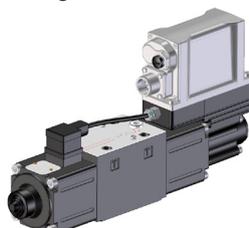
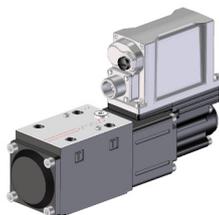
Direct, 4 way - Size 06 *technical table FS165*

DHZO-TEB-SN-NP-053	DHZO-TEB-SN-NP-071	DHZO-TEB-SN-BC-071	DHZO-TEB-SL-BP-073
Low case Height +6,5 mm	High case Height +21,5 mm	High case Height +21,5 mm	High case Height +21,5 mm



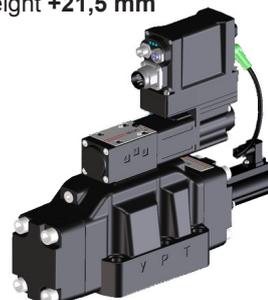
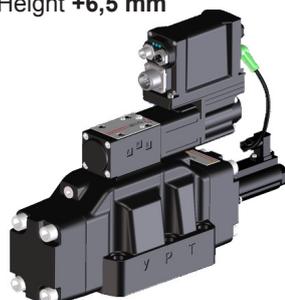
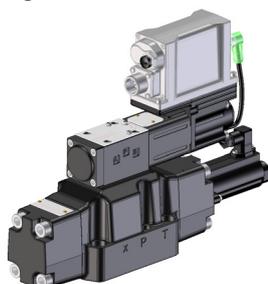
Direct, 4 way - Size 10 *technical table FS165*

DKZOR-TEB-SN-NP-151	DKZOR-TEB-SN-NP-171	DKZOR-TEB-SN-EH-173	DKZOR-TEB-SF-BC-173
Low case Height +6,5 mm	High case Height +21,5 mm	High case Height +21,5 mm	High case Height +21,5 mm



Piloted, 4 way - Size 10 ÷ 35 *technical table FS175*

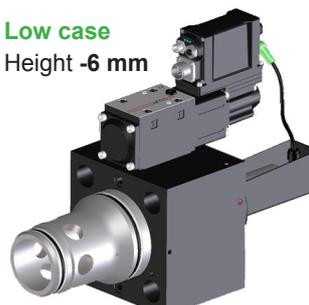
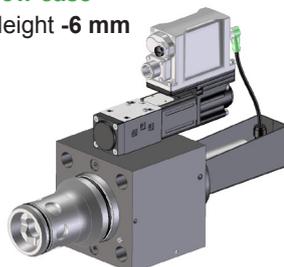
DPZO-LEB-SN-NP-273	DPZO-LES-SN-BP-471	DPZO-LES-SP-BC-473
Low case Height +6,5 mm	Low case Height +6,5 mm	High case Height +21,5 mm



New 2015 DPZO-TEB execution will included also configuration -*51 & -*53

Piloted, 2 way - Size 16 ÷ 100 *technical tables FS330*

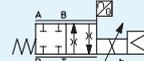
LIQZO-LEB-SN-NP-322	LIQZP-LEB-SN-NP-502	LIQZP-LES-SN-BP-632
Low case Height -6 mm	Low case Height -6 mm	Low case Height -6 mm



Hydraulic configurations

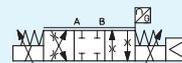
Size 06 & 10

single solenoid DH/DK



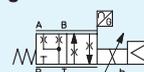
configuration -*51

two solenoids DH/DK



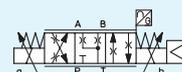
configuration -*71

single solenoid DH/DK



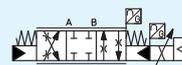
configuration -*53

two solenoids DH/DK

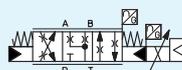


configuration -*73

Size 10 ÷ 35

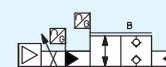


configuration -*71



configuration -*73

Size 16 ÷ 100



configuration 2 way

Note: "Height" data are referred to the highness difference respect the correspondent product of actual standard range