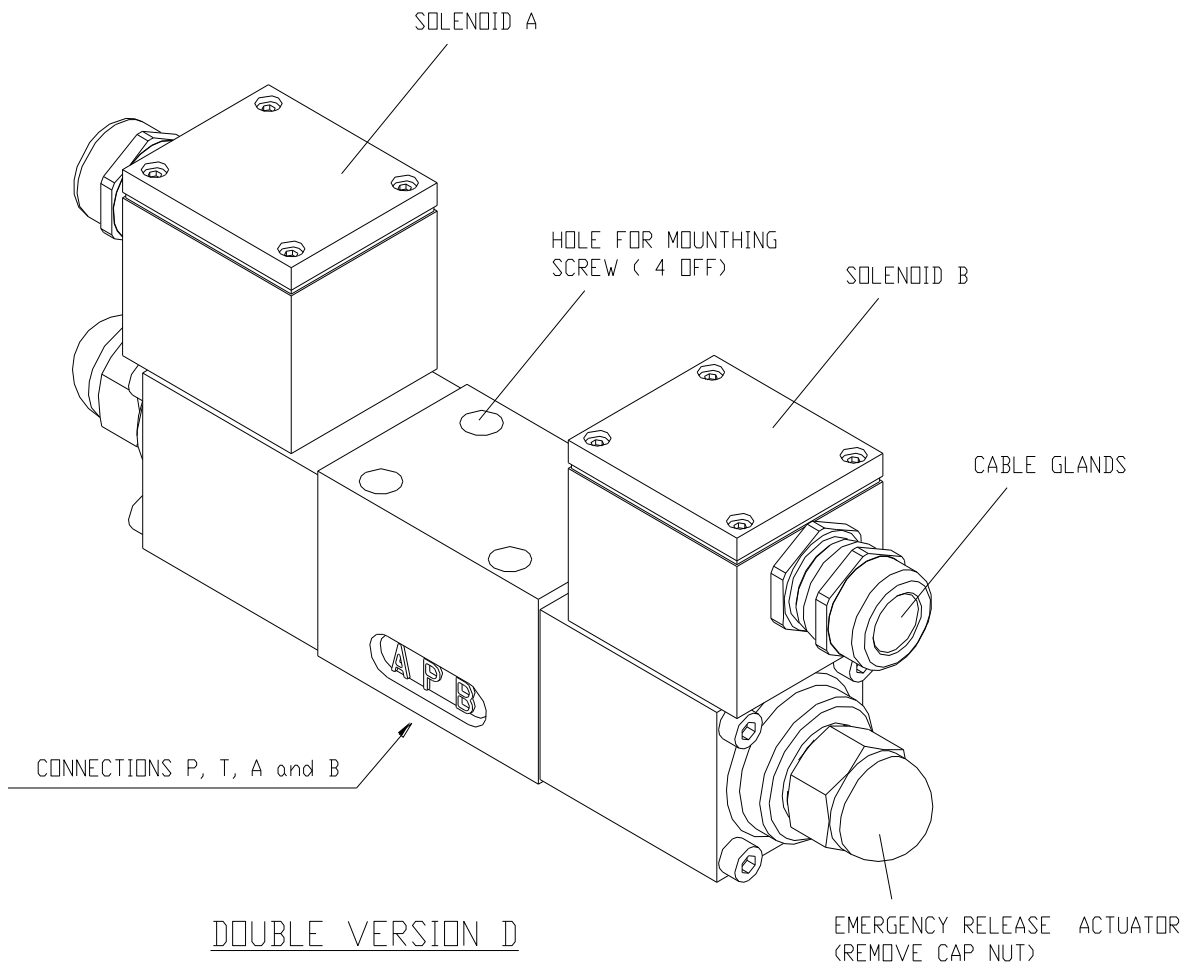


## DIRECTIONAL CONTROL VALVES 1STB4431\*\*\*\*.3AE

### GENERAL DESCRIPTION



*Figure 1 General Arrangement 1STB4431\*\*\*\*.3AE*





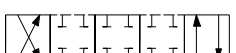
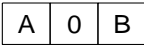
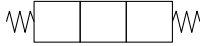
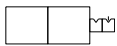

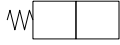

The Directional Control Valves 1STB4431\*\*\*\* are solenoid operated 4-ways seawater resistant valves for distribution and stopping of flow in hydraulic systems. The valves have the following characteristics:

- Delivered for gasket mounting to a sub plate according to ISO standard 4401, size 03.
- Seawater protected valve.
- Electrically controlled (on/off) – 24 VDC, 230AC.
- Direct operated solenoid valve.
- Solenoid of wet pin push type, which is pressure tight.
- Delivered with emergency manual override push pin.
- A number of possibilities for spool positioning, spring or detents.
- Flow capacity 60 l/min.

For more details about types and options, please refer to section 'Modular Code'.

## Directional Control Valves 1STB4431

**MODULAR CODE**

Options	Remarks	Design Code	Fill in
<b>Mounting</b>			<b>1ST</b>
SUB Plate	ISO 4401	<b>B</b>	<b>B</b>
<b>Type</b>			
4-ways	No options	<b>4</b>	<b>4</b>
<b>Pressure</b>			
350 bar (P, A and B)	No options	<b>4</b>	<b>4</b>
<b>Operation</b>			
Solenoid	No options	<b>3</b>	<b>3</b>
<b>Size</b>			
NG6 (ISO-03)	60 l/min	<b>1</b>	<b>1</b>
<b>Spool Type</b>			
			
		<b>2C</b>	
		<b>01</b>	
		<b>0J</b>	
		<b>0Y</b>	
<b>Spring / Detents Positions</b>			
			
Spring centred 1 or 2 springs acc. to single or double solenoids		<b>1</b>	
Detents in positions B and 0, A blocked		<b>7</b>	
Spring offset to B, A blocked		<b>8</b>	
Spring centred, A blocked		<b>9</b>	
Spring centred, B blocked		<b>A</b>	
<b>Solenoid Type</b>			
Single	Solenoid A side	<b>F</b>	
Single	Solenoid on B side	<b>E</b>	
Double	Solenoid A and B side	<b>D</b>	
<b>Modification</b>			
	No options	<b>A.</b>	<b>A.</b>
<b>Voltage</b>			
24 V DC		<b>3AE</b>	
230 V AC		<b>3OE</b>	

In example a 1STB4431\*\*\*\*\*.3AE valve with spool type 2C, double solenoid will have modular code: **1STB44312C1DA.3AE**

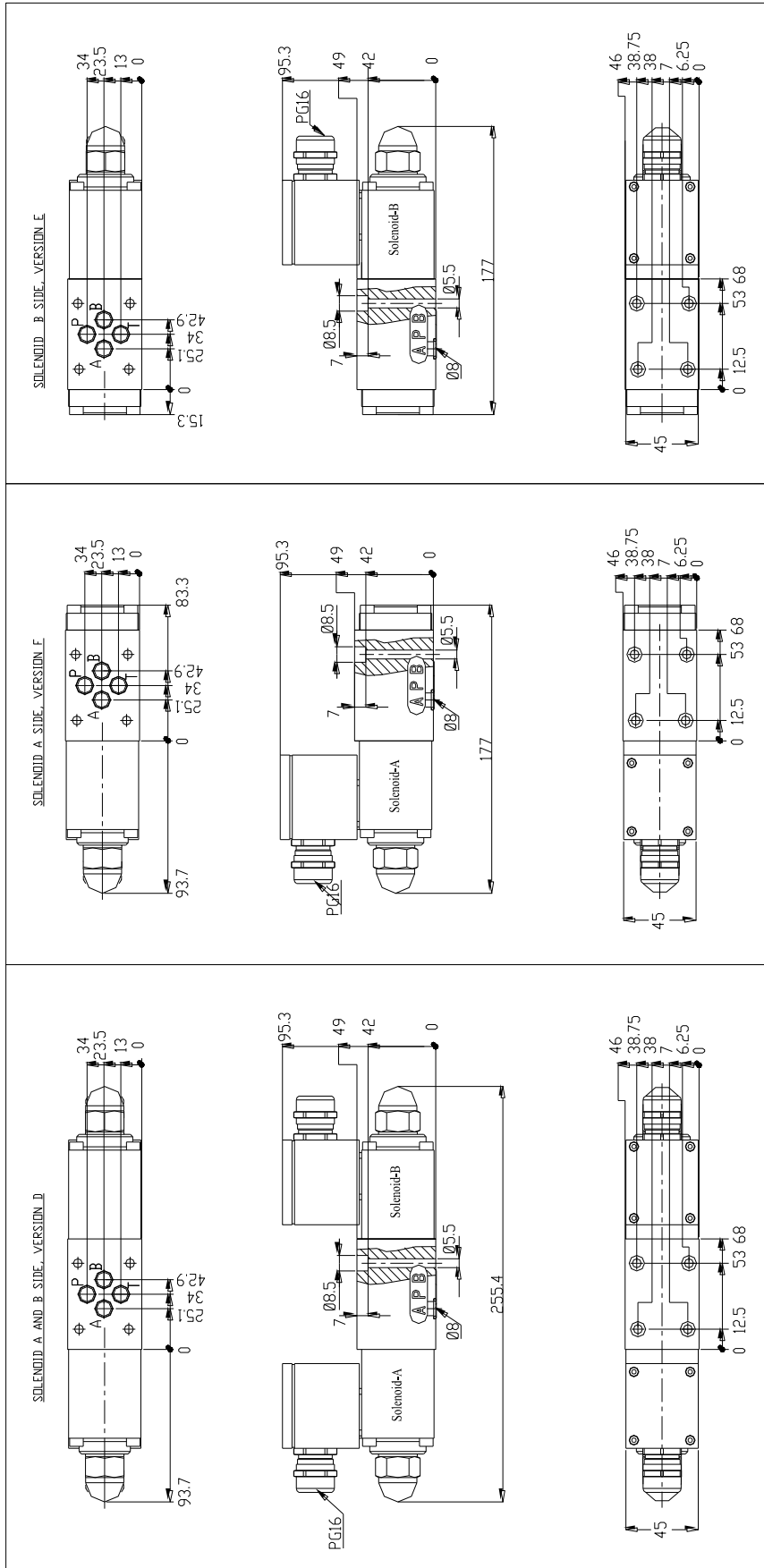
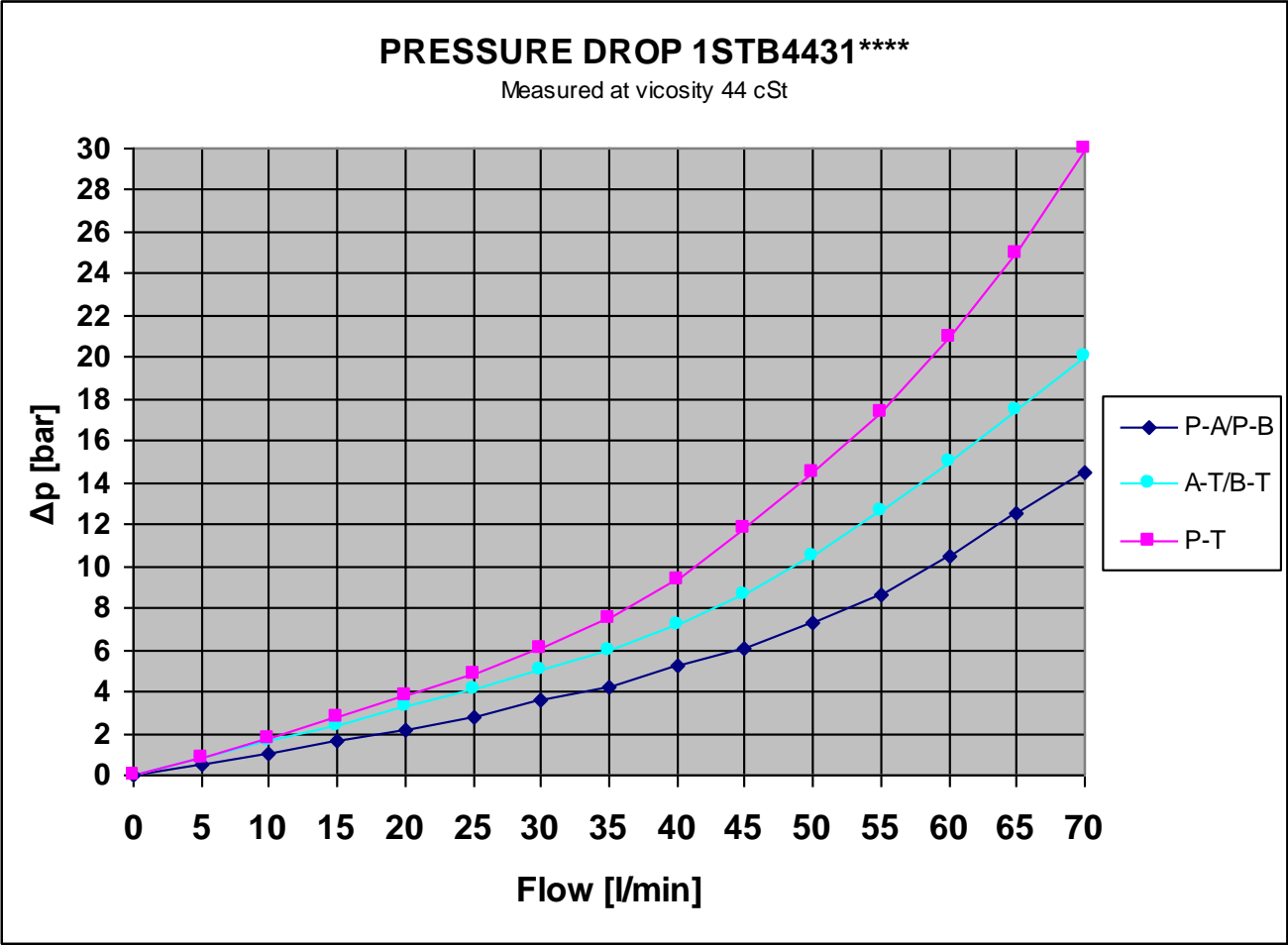


Figure 2 Dimensions 1STB4431\*\*\*\*.3AE

Directional Control Valves 1STB4431

**PRESSURE DROP CURVES FOR SPOOLS 01, 0Y, 0J AND 2C.**



**TECHNICAL DATA**

Description	Symbol	Data
Max. operating pressure in port P, A, B	$P_{nom}$	350 bar
Max. pressure in port T	$T_{max}$	160 bar
Test Pressure	$P_{max}$	420 bar
Solenoid protection, See Note 1		IP 65
Solenoid Power 24VDC	P	30 W
Solenoid Current 24VDC	I	1.25 Amp
Resistance R, 24VDC	$\Omega$	21.8 Ohm
Hydraulic fluid		Mineral oils for hydraulic system
Viscosity range:	V	10 to 320 mm <sup>2</sup> /s (cST)
Viscosity index:	VI	> 120
Filtration, recommended filter with $\beta_{20} \geq 100$		Class 9 according to NAS 1638, 18/15 according to ISO 4406
Fluid temperature range:	T	-20°C to + 70°C
Ambient temperature range	T	-20°C to + 50°C
Standard O-rings		Nitrile shore 70

Note 1: Pressure sealed sea water protected solenoid.

**Flow and Weight:**

Type	Max. Flow	Weight
D	60 l/min	2.4 kg
E/F	60 l/min	1.9 kg

**Interfaces:**

Description	Data
<b>Electrical Connection:</b> Cable Glands PG16	Cable dim. Ø10-Ø14.
<b>Screws</b>	<b>Tightening Torque [Nm]</b>
4 off M 5 x 50 - DIN 912 (To be order separately)	5.5
<b>O-rings</b>	<b>Size [mm]</b>
4 off	9,25 x 1,78

## Directional Control Valves 1STB4431

### INSTALLATION

The Direction Control Valves 1STB4431 are installed with 4 off screws to a SUB plate (ISO 4401, size 03). Please refer to section 'Interfaces' for details about electrical connection, screws and o-rings.

### OPERATION

When solenoid is energized, a push pin moves the spool to the requested position – on/off.

4/2 way spool valve:

1 solenoid and 2 spool positions, spring offset. With the solenoid de-energized the spool return to offset position.

4/3 way spool valve:

2 solenoids and 3 spool positions, spring centred. With the solenoid de-energized the spool return to the centre position.

4/2 way detent spool valve:

2 solenoids and 2 detent positions. With the solenoids de-energized the spool remains in the last switched position.

Emergency manual override: The valve has manual override by moving a push pin on the solenoid. To release the push pin, remove the protective Cap nut.

### MAINTENANCE

Check the valve for proper function. Visually check the valve and if required, paint unpainted (damaged) areas.

### STORAGE

If storage longer than 6 months is expected, the valve must be kept in a dry room, free from dust and protected against sudden large temperature variations. For storage longer than 12 months, the valve must be filled with inhibition oil. Before use check all visible seals and flush with clean oil.

### MARKING

Inlets and outlets are marked, refer to figure in section 'General Description'.