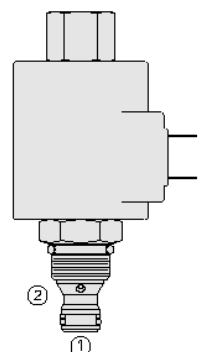
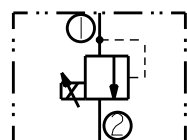


Pressure relieving proportional valve

Overview



SYMBOL



Description

TS58-20X is a direct-acting, poppet-type, proportional, pressure relieving valve. The regulated pressure is proportional to the input electrical current. Port 1 may be protected by 150 mesh screen. Back pressure additive to pressure setting at 1:1 ratio.

Operation

The TS58-20X blocks flow from port 1 to port 2 until sufficient pressure is present at port 1 to open the valve. With no current applied the valve will free flow from port 1 to port 2.

Ratings

Pressure Ratings

Pressure rating: 6200 psi [427.5 bar] note: Port 1

1000 psi [68.9 bar] note: Port 2

Proof pressure: 6500 psi [448.2 bar] note: Port 1

1500 psi [103.4 bar] note: Port 2

Burst pressure: 13700 psi [944.6 bar]

Adjustable pressure range: 0 to 344.7 bar (0 to 5000 psi)

Flow Ratings

Flow rating: 1.8 gpm [6.8 lpm] note: ΔP 80-120 psi [5.5-8.3 bar]

Maximum internal leakage: At 80% of maximum setting does not exceed 0.275 in³/min [4.5 ml/min]

Temperature Ratings

Operating fluid temperature: -40 °f to 212 °f [-40 °c to 100 °c] note: With Buna N seals

-15 °f to 400 °f [-26 °c to 204 °c] note: With fluorocarbon seals

-65 °f to 225 °f [-54 °c to 107 °c] note: With polyurethane seals

Storage temperature: -40 °f to 160 °f [-40 °c to 70 °c]

Ambient temperature: -40 °f to 160 °f [-40 °c to 70 °c]

Hysteresis: 3.5 % maximum note: At 200 Hz dither or PWM.

Pressure Ratings

Note: Maximum pressure factory adjustable between 275.8 to 344.7 bar (4000 to 5000 psi) in 6.9 bar (100 psi) increments

Flow Ratings

Hysteresis per cent: 3.5 % note: Maximum at 200 Hz dither or PWM

Operating Parameters

Response: 0.045 sec. note: While current step from 0 to maximum

Pressure relieving proportional valve

0.008 sec. note: While current step from maximum to 0

Fluids: Mineral based or synthetic with lubricating properties

Fluid viscosity range: 7.4-420 cSt

Maximum operating contamination level: 18/16/13 per ISO 4406

Properties

Corrosion protection: 960 hr salt spray per ASTM B117

Screen filter characteristics: Mesh: 150 X 150

Diameter of wire: 0.0026 in [0.066mm]

Opening: 0.0041 in [0.104 mm]

Percentage of open area: 20%

Unit weight: 0.40 lb [0.18 kg]

Internal wetted surface area: 18.3 in² [118 cm²]

Electrical Specifications

Dither PWM frequency: 200 Hz

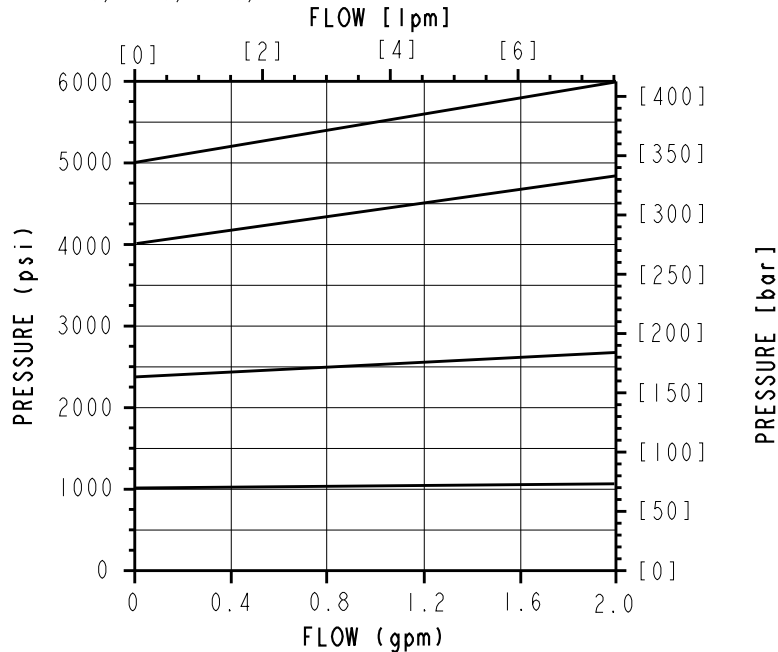
Coil	Coil resistance at 68°F [20°C]	Valve inductance	Maximum control current
D-Coil 12 VDC	7.2 ohms ±3%	141 mH	1.30 A
D-Coil 24 VDC	28.8 ohms ±5%	626 mH	0.66 A
E-Coil 12 VDC	7.1 ohms ±3%	139 mH	1.32 A
E-Coil 24 VDC	28.5 ohms ±5%	600 mH	0.66 A

Performance

TYPICAL RELIEF PRESSURE VS FLOW CHARACTERISTIC

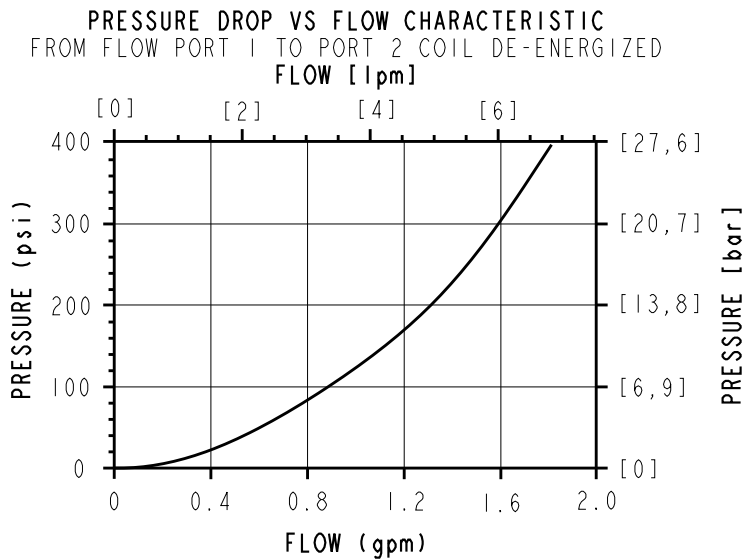
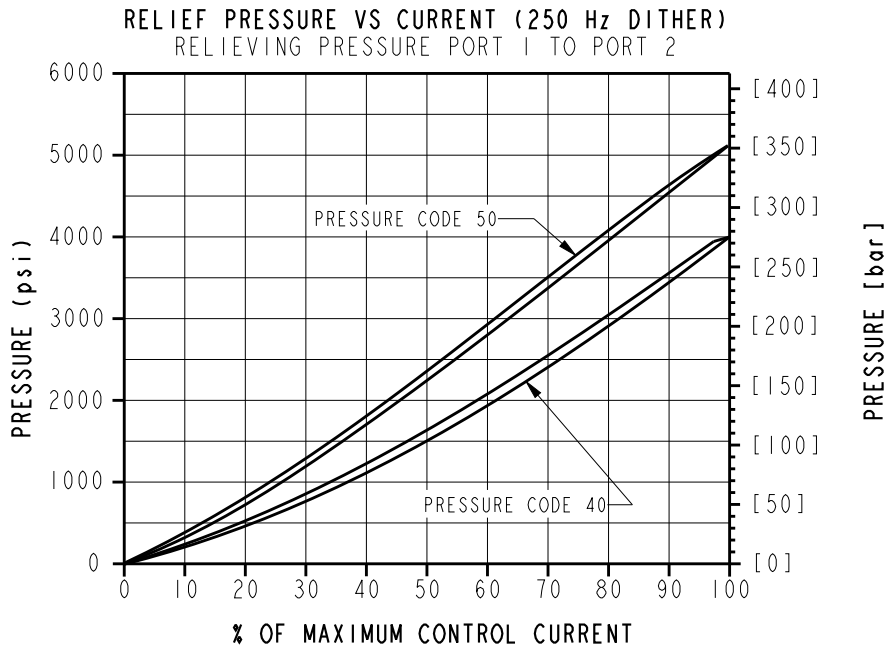
TYPICAL RELIEVING PRESSURE PORT 1 TO PORT 2

AT 100%, 75%, 50%, AND 25% OF MAXIMUM CONTROL CURRENT



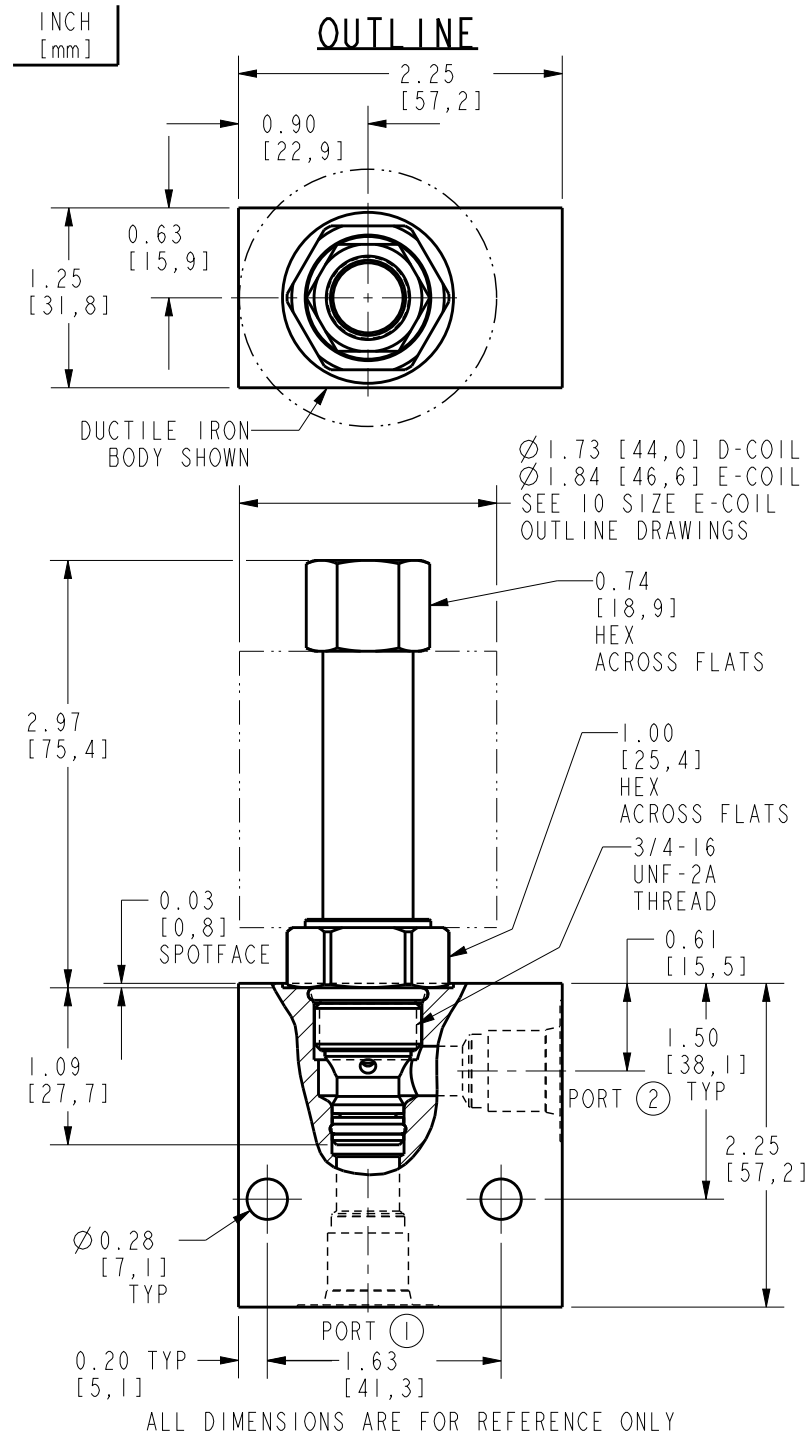
NOTE: ALL TESTS DONE IN ENGINEERING LAB WITH MOBIL DTE24,
32 cSt AT 104°F [40°C]

Pressure relieving proportional valve



Pressure relieving proportional valve

Dimensions



Installation Specifications

Cavity: VC08-2

Cartridge installation torque: 24-26 ft-lb [32.5-35.3 N-m]

Coil nut torque: 4-5 ft-lb [5.4-6.8 N-m]

Orientation restriction: None

Pressure relieving proportional valve

Accessories

Seal kit: SK08-2X-B note: X = seal option

Order Code

ORDERING INFORMATION:

TS58-20X-XX-X-X-XXXX

BASE MODEL NUMBER:

SCREEN OPTION:

NONE - BLANK

SCREEN - S

* PRESSURE CODE:

(FOR EXAMPLE:)

0-4000 psi - 40

[0-275,8 bar]

0-5000 psi - 50

[0-344,7 bar]

PORTING:

CARTRIDGE ONLY - 0

SEAL OPTION:

BUNA N - N

FLUOROCARBON - V

POLYURETHANE - P

COIL VOLTAGE:

LESS COIL - 00

12 VDC COIL - 12

24 VDC COIL - 24

COIL TERMINATIONS

DEUTSCH DT04-2P - ER

DUAL SPADES - DS

LEAD WIRES (2) - DL

* MAXIMUM PRESSURE FACTORY ADJUSTABLE BETWEEN 4000 psi [275,8 bar] & 5000 psi [344,7 bar] IN 100 psi [6,9 bar] INCREMENTS

Model Options

TS58-20DG-H-J-L

D Regulating Pressure Range

CODE	DESCRIPTION
40	4000 psi Max Setting
41	4100 psi Max Setting
42	4200 psi Max Setting
43	4300 psi Max Setting
44	4400 psi Max Setting
45	4500 psi Max Setting
46	4600 psi Max Setting
47	4700 psi Max Setting
48	4800 psi Max Setting
49	4900 psi Max Setting
50	5000 psi Max Setting

G Screen

CODE	DESCRIPTION
BLANK	NONE
S	150 Mesh Screen

Pressure relieving proportional valve

H Line Body

CODE	DESCRIPTION
0	No Body
4T	Aluminum SAE 4
6T	Aluminum SAE 6
8T	Aluminum SAE 8
6TD	Ductile Iron SAE 6
8TD	Ductile Iron SAE 8
2B	Aluminum BSPP 1/4" (2)
3B	Aluminum BSPP 3/8" (3)
3BD	Ductile Iron BSPP 3/8" (3)

J Seal

CODE	DESCRIPTION
N	Buna-N
V	Fluorocarbon
P	Polyurethane

L Coil

CODE	DESCRIPTION
0	No Coil
10DG	10 VDC, D-Coil, DIN 43650
10DL	10 VDC, D-Coil, Dual Lead Wires
10DS	10 VDC, D-Coil, Dual Spade
10EL	10 VDC, E-Coil, Dual Lead Wires
10ER	10 VDC, E-Coil, Deutsch
12DG	12 VDC, D-Coil, DIN 43650
12DL	12 VDC, D-Coil, Dual Lead Wires, 18 inches long
12DL/36	12 VDC, D-Coil, Dual Lead Wires, 36 inches long
12DL/W	12 VDC, D-Coil, Dual Lead Wires with Weatherpak
12DR	12 VDC, D-Coil, Deutsch
12DS	12 VDC, D-Coil, Dual Spade
12EG	12 VDC, E-Coil, DIN 43650
12EJ	12 VDC, E-Coil, AMP Jr.
12EL	12 VDC, E-Coil, Dual Lead Wires, 18 inches long
12EL/36	12 VDC, E-Coil, Dual Lead Wires, 36 inches long
12ER	12 VDC, E-Coil, Deutsch
12EY	12 VDC, E-Coil, Metri-Pack 150
20DS	20 VDC, D-Coil, Dual Spade
20ER	20 VDC, E-Coil, Deutsch
24AG	24 VDC, D-Coil, DIN 43650
24AP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
24DG	24 VDC, D-Coil, DIN 43650
24DL	24 VDC, D-Coil, Dual Lead Wires
24DL/W	24 VDC, D-Coil, Dual Lead Wires with Weatherpak
24DP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
24DR	24 VDC, D-Coil, Deutsch
24DS	24 VDC, D-Coil, Dual Spade
24EG	24 VDC, E-Coil, DIN 43650
24EJ	24 VDC, E-Coil, AMP Jr.
24EL	24 VDC, E-Coil, Dual Lead Wires, 18 inches long

Pressure relieving proportional valve

CODE	DESCRIPTION
24EL/36	24 VDC, E-Coil, Dual Lead Wires, 36 inches long
24ER	24 VDC, E-Coil, Deutsch
24EY	24 VDC, E-Coil, Metri-Pack 150
36DS	36 VDC, D-Coil, Dual Spade