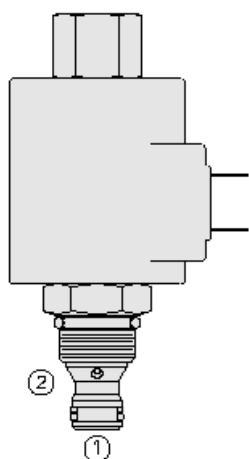




Overview



Description

TS38-20 is a direct-acting, single stage, poppet-type, proportional, pressure relieving valve. The regulated pressure is proportional to the input electrical current.

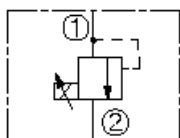
Operation

The TS38-20 blocks flow from port 1 to port 2 until sufficient pressure is present at port 1 to offset the electrically induced solenoid force. With no current applied, the valve will free flow from port 1 to port 2.

Features

- Industry common cavity.
- Manual override option.

Symbol



Ratings

Pressure Ratings

Pressure rating	248.2 bar (3600 psi)
Proof pressure	268.9 bar (3900 psi)
Burst pressure	751.5 bar (10900 psi)
Pressure drop	20 bar (290 psi) - Note: Cartridge only (a) 10.3 bar (150 psi) - Note: Cartridge only (b) 5.5 bar (80 psi) - Note: Cartridge only (c)
Adjustable pressure range	0 to 206.8 bar (0 to 3000 psi) - Note: (a) 0 to 137.9 bar (0 to 2000 psi) - Note: (b) 0 to 68.9 bar (0 to 1000 psi) - Note: (c)

Flow Ratings

Flow rating	11.4 lpm (3 gpm) - Note: Port 1 to port 2 (coil de-energized)
Maximum internal leakage	1 ml/min (20 drops/min) - Note: Port 2-1, at 3000 psi

Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F) - Note: With buna N seals -26 to 204 °C (-15 to 400 °F) - Note: With fluorocarbon seals -54 to 107 °C (-65 to 225 °F) - Note: With polyurethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)
Ambient temperature	-40 to 70 °C (-40 to 160 °F)

Other Ratings

Corrosion protection	960 hr salt spray per ASTM b117
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Operating Parameters

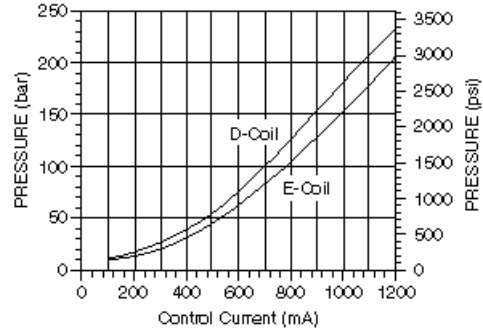
Fluids	Mineral based or synthetic hydraulic fluid with lubricating properties
Fluid viscosity range	7.4 to 420 cSt
Maximum operating contamination level	18/16/13 per ISO 4406

Properties

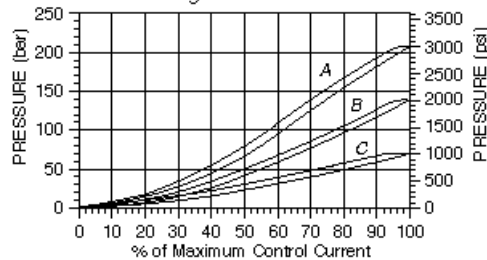
Unit weight	0.18 kg (0.39 lb)
Internal wetted surface area	130 cm ² (20.2 in ²)

Performance

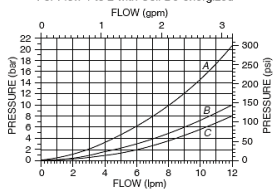
Relief Pressure vs. Current
D-Coil vs. E-Coil



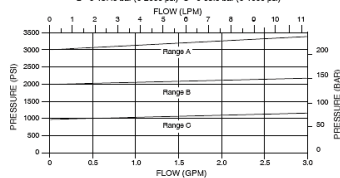
Relief Pressure vs.
Current (DC) 250 Hz Dither
Relieving Pressure ① to ②



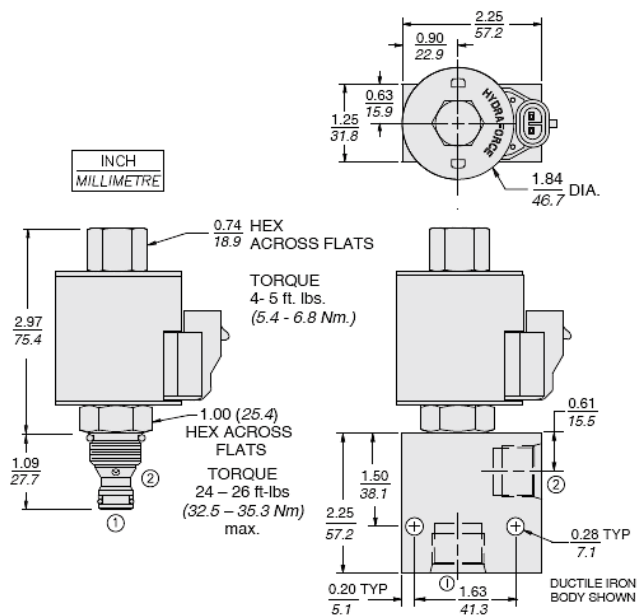
Pressure Drop vs. Flow Characteristic
For Flow 1 to 2 with Coil De-energized



TYPICAL RELIEF PRESSURE VS. FLOW CHARACTERISTIC
Typical Relieving Pressure Port 1 to Port 2
Pressure Range A - 0-205.8 bar (0-3000 psi)
B - 0-137.9 bar (0-2000 psi) C - 0-68.9 bar (0-1000 psi)



Dimensions



Installation Specifications

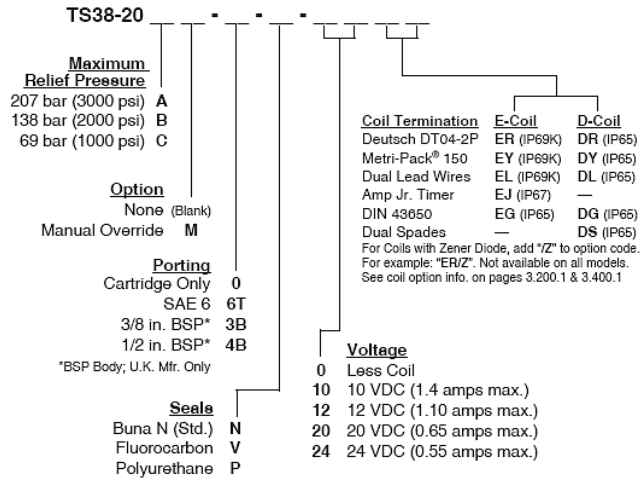
Cavity	VC08-2
Cartridge installation torque	25.8 to 28.5 N-m (19 to 21 ft-lb)
Coil nut torque	5.4 to 6.8 N-m (4 to 5 ft-lb)
Orientation restriction	None



Accessories

Seal kit SK08-2X-B - **Note:** Seal option)

Order Code



Model Options

TS38-20DE-H-J-L

D Regulating Pressure Range

CODE	DESCRIPTION
A	0 to 206.8 bar (0 to 3000 psi) Pressure Range
B	0 to 138.0 bar (0 to 2000 psi) Pressure Range
C	0 to 68.9 bar (0 to 1000 psi) Pressure Range

E Manual Override

CODE	DESCRIPTION
BLANK	NONE
M	Minimum Regulated Pressure Override, 3/16" Internal Hex

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



CODE	DESCRIPTION
U	PPDI Urethane

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
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