



## 2-way, direct-acting, solenoid-operated directional poppet valve with overlap

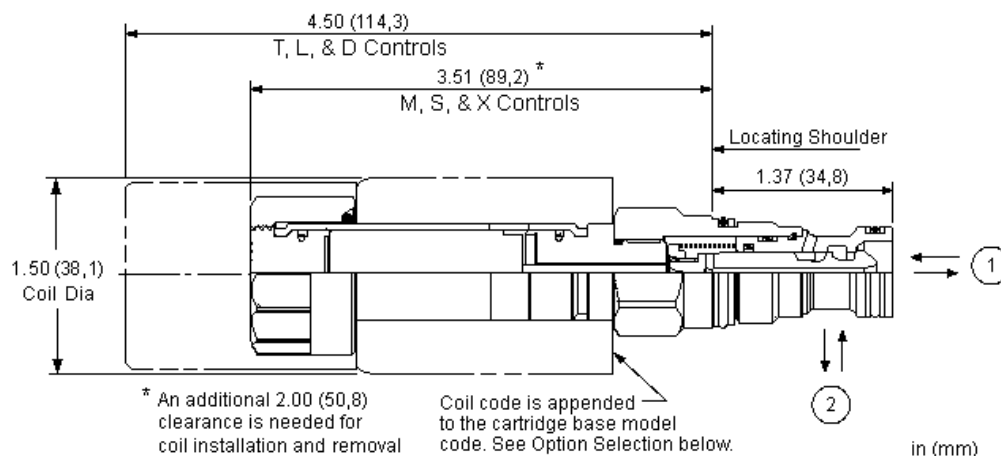
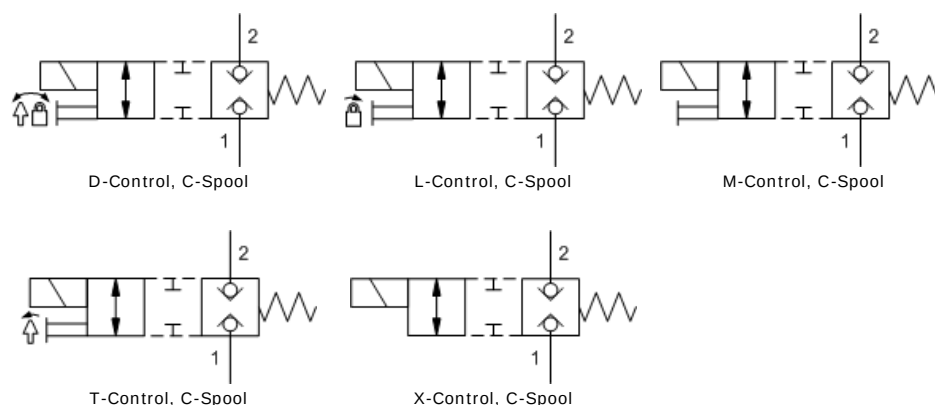
Capacity:  
6 gpm (23 L/min.)

Model:  
DTCA

### Product Description

This solenoid-operated 2-way, 2-position cartridge is a direct-acting, poppet-style directional valve. The valve is only available in a normally closed configuration and is well suited for load holding or load blocking applications where low leakage is a requirement.

Many poppet style directional valves pass a small amount of fluid when the pressure across them changes suddenly. This is due to the compressibility of the fluid. This valve has been designed to prevent this from happening.



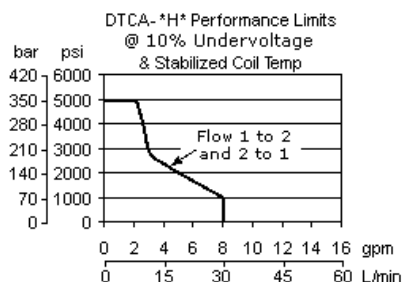
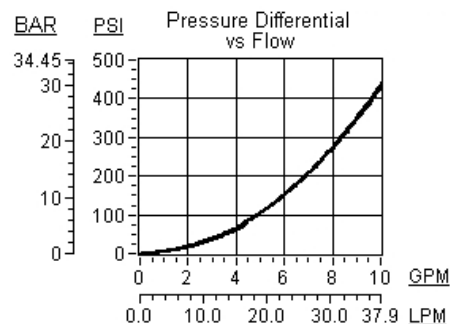
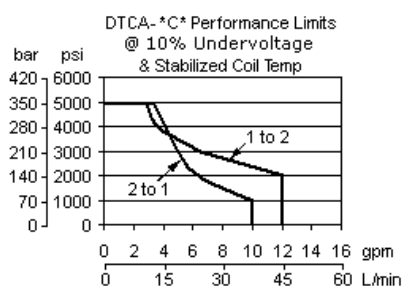
### Technical Features

- The solenoid tube assembly is fatigue rated for 5000 psi (350 bar) service.
- This valve is direct actuated and requires no minimum hydraulic pressure for operation.
- Valves exhibit extremely low leakage rates; less than 10 drops/min. @ 5000 psi (0,7 cc/min @ 350 bar).
- Suitable for load holding applications.
- This valve utilizes a wet armature design. This means that the working fluid surrounds the armature and is exposed to the heat generated by the coil. This can be a factor if the coil is energized for long periods of time. Some fluids, notably water/glycol mixtures, break down at these temperatures over time and form varnishes that will affect the function of the cartridge.
- The solenoid's unique magnetic design results in a high efficiency solenoid, yielding high spool actuating force per Watt expended, leading to reliable valve shifting.
- Coils are interchangeable with other Sun Series 1 solenoid products and can be mounted on the tube in either direction.
- Coil connector options offer ratings up to IP69K. See individual coil product pages for details. Additional weatherized coils and kits are available for more complete environmental protection.

- This cartridge has several manual override choices, including no manual override. See Option Selection below.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.
- Provides a combination seat/spool design for increased sealing integrity.

## Technical Data

|                                           | U.S. Units              | Metric Units           |
|-------------------------------------------|-------------------------|------------------------|
| Cavity                                    | T-13A                   |                        |
| Capacity                                  | 6 gpm                   | 23 L/min.              |
| Manual Override Force Requirement         | 5 lbs/1000 psi @ Port 1 | 3 kgs/100 bar @ Port 1 |
| Manual Override Stroke                    | .10 in.                 | 2,5 mm                 |
| Maximum Operating Pressure                | 5000 psi                | 350 bar                |
| Maximum Valve Leakage at 110 SUS (24 cSt) | 10 drops/min.@5000 psi  | 0,7 cc/min.@350 bar    |
| Response Time - Typical                   | 50 ms                   |                        |
| Series (from Cavity)                      | Series 1                |                        |
| Switching Frequency                       | 15000 cycles/hr         |                        |
| Solenoid Tube Diameter                    | .75 in.                 | 19 mm                  |
| Valve Hex Size                            | 7/8 in.                 | 22,2 mm                |
| Valve Installation Torque                 | 30 - 35 lbf ft          | 40 - 50 Nm             |
| Seal Kits - Cartridge                     | Buna: 990-413-007       |                        |
| Seal Kits - Cartridge                     | Viton: 990-413-006      |                        |
| Seal Kits - Coil                          | Viton: 990-770-006      |                        |
| Model Weight                              | 0.65 lb.                | 0.29 kg.               |

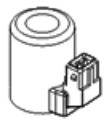
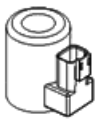
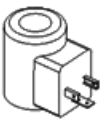
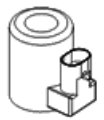


## DTCA-XCN- \* \* \*

| Control                               | Spool Configuration | Seal Material    | Coil                       |
|---------------------------------------|---------------------|------------------|----------------------------|
| Standard Options                      | Standard Options    | Standard Options | *** See Coil Options Below |
| D Twist/Lock (Dual) Manual Override   | C Normally Closed   | N Buna-N         |                            |
| L Twist/Lock (Detent) Manual Override |                     | V Viton          |                            |
| M Manual Override                     |                     |                  |                            |
| T Twist (Momentary) Manual Override   |                     |                  |                            |

X No Manual Override

*Standard Coil Options*

|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| AMP Junior Timer                                                                  | Deutsch DT04-2P                                                                   | DIN 43650 4 pin<br>(Hirschman)                                                    | Metri-Pack                                                                        | SAE J858A                                                                           | Twin Lead                                                                           |

\*\*\* no coil

|     |                                        |     |                         |     |                        |
|-----|----------------------------------------|-----|-------------------------|-----|------------------------|
| 211 | DIN 43650 4 pin<br>(Hirschman) 115 VAC | 524 | SAE J858A 24 VDC        | 812 | Metri-Pack 12 VDC      |
| 212 | DIN 43650 4 pin<br>(Hirschman) 12 VDC  | 528 | SAE J858A 28 VDC        | 814 | Metri-Pack 14 VDC      |
| 214 | DIN 43650 4 pin<br>(Hirschman) 14 VDC  | 536 | SAE J858A 36 VDC        | 824 | Metri-Pack 24 VDC      |
| 223 | DIN 43650 4 pin<br>(Hirschman) 230 VAC | 612 | AMP Junior Timer 12 VDC | 828 | Metri-Pack 28 VDC      |
| 224 | DIN 43650 4 pin<br>(Hirschman) 24 VDC  | 614 | AMP Junior Timer 14 VDC | 836 | Metri-Pack 36 VDC      |
| 228 | DIN 43650 4 pin<br>(Hirschman) 28 VDC  | 624 | AMP Junior Timer 24 VDC | 848 | Metri-Pack 48 VDC      |
| 236 | DIN 43650 4 pin<br>(Hirschman) 36 VDC  | 628 | AMP Junior Timer 28 VDC | 912 | Deutsch DT04-2P 12 VDC |
| 248 | DIN 43650 4 pin<br>(Hirschman) 48 VDC  | 636 | AMP Junior Timer 36 VDC | 914 | Deutsch DT04-2P 14 VDC |
| 297 | DIN 43650 4 pin<br>(Hirschman) 24 VAC  | 712 | Twin Lead 12 VDC        | 924 | Deutsch DT04-2P 24 VDC |
| 298 | DIN 43650 4 pin<br>(Hirschman) 220 VDC | 724 | Twin Lead 24 VDC        | 928 | Deutsch DT04-2P 28 VDC |
| 299 | DIN 43650 4 pin<br>(Hirschman) 127 VDC | 728 | Twin Lead 28 VDC        | 936 | Deutsch DT04-2P 36 VDC |
| 514 | SAE J858A 14 VDC                       | 736 | Twin Lead 36 VDC        | 948 | Deutsch DT04-2P 48 VDC |

*Embedded Coil Options*

|       |                                                                                             |       |                                                                                  |       |                                                                                  |
|-------|---------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------|
| 2E12V | DIN 43650 4 pin<br>(Hirschman) programmable<br>via IR link coil/power saver<br>12 VDC 0-10V | 4E12V | Deutsch DT04-6P<br>programmable via IR link<br>coil/power saver 12 VDC 0-<br>10V | 4E24V | Deutsch DT04-6P<br>programmable via IR link<br>coil/power saver 24 VDC 0-<br>10V |
| 2E24V | DIN 43650 4 pin<br>(Hirschman) programmable<br>via IR link coil/power saver<br>24 VDC 0-10V |       |                                                                                  |       |                                                                                  |

*Additional Options**Additional Coils*

|     |                         |       |                                                                              |       |                                                                             |
|-----|-------------------------|-------|------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------|
| 512 | SAE J858A 12 VDC        | 71219 | Twin Lead to Delphi<br>Weather-Pack Connector, 9<br>inch lead length, 12 VDC | 72419 | Twin Lead to Delphi<br>Weather-Pack Connector, 9<br>inch lead length 24 VDC |
| 548 | SAE J858A 48 VDC        | 714   | Twin Lead 14 VDC                                                             | 748   | Twin Lead 48 VDC                                                            |
| 648 | AMP Junior Timer 48 VDC |       |                                                                              |       |                                                                             |