

General Description

The DSH085, 4-way spool valves are used in applications with double acting cylinders, with hydraulic motors, to pilot two functions, or any other application that requires a three-position, four-way solenoid.

Operation

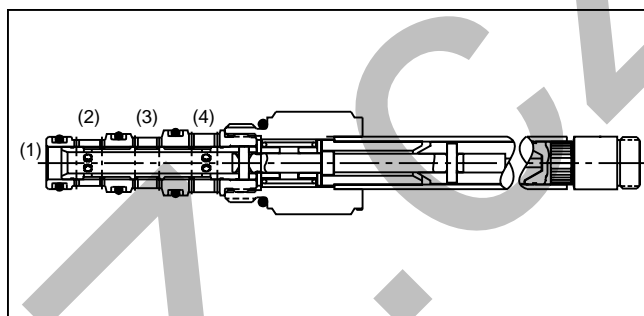
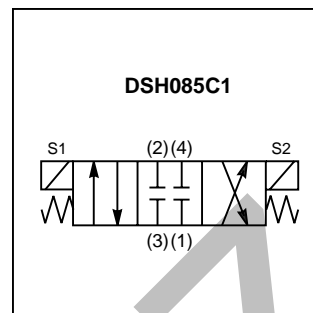
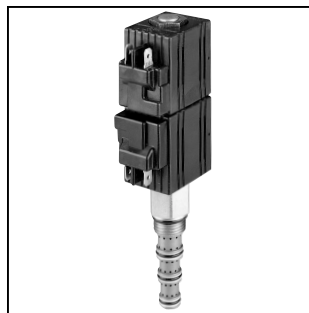
In the de-energized mode, the spool is held in the neutral position by spring force. When the top solenoid (S1) is energized the spool will be shifted to the upper position in the valve. When the bottom solenoid (S2) is energized the spool is pushed down. Flow will be directed according to spool type selected.

Features

- High flow capacity with reduced space requirements
- Standard valve bodies and common cavities
- One-piece encapsulated coil with minimal amperage draw
- Manual overrides, seal variations and other options available
- No dynamic seals
- Variety of manual override options available

Specifications

| | |
|--|---|
| Rated Flow | 11.4 LPM (3 GPM) |
| Maximum Inlet Pressure | 345 Bar (5000 PSI) - Steel 210 Bar (3000 PSI) - Aluminum |
| Leakage | 160 cc/min. (10 cu. in./min.) maximum at 345 Bar (5000 PSI) |
| Minimum Operating Voltage | 90% of rated voltage at 345 Bar (5000 PSI) |
| Operating Temp. Range (Ambient) | -40°F to +200°F (Nitrile) (-40°F to +200°F) -25°F to +250°F (Fluorocarbon) (-25°F to +250°F) |
| Cartridge Material | All parts steel. All operating parts hardened steel. |
| Body Material | Steel or Aluminum |
| Filtration | ISO Code 16/13, SAE Class 4 or better |
| Mounting | No Restrictions |
| Cavity | Common Cavity No. C08-4 |



Solenoid Coil Specifications

| Voltage | Watts | Amps |
|---------|-------|------|
| 10 VDC | 14 | 1.45 |
| 12 VDC | 14 | 1.17 |
| 24 VDC | 14 | 0.57 |
| 120 VAC | 14 | .144 |
| 240 VAC | 14 | .079 |

Response Time

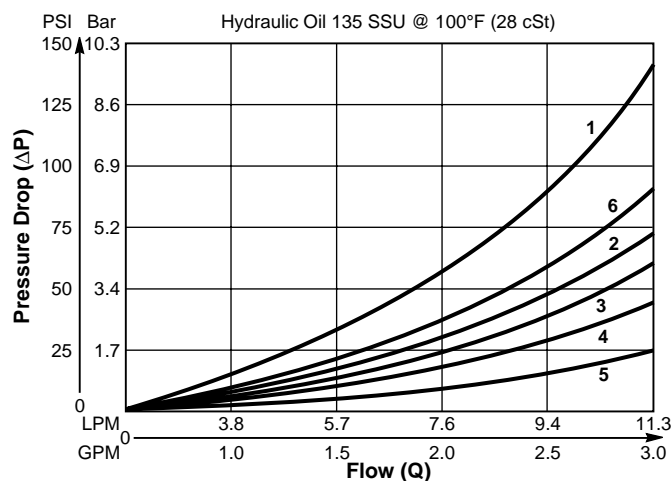
At nominal flow 345 Bar (5000 PSI)

| | |
|------------------------|----------|
| Normally Closed | 50—150ms |
| Normally Open | 50—150ms |

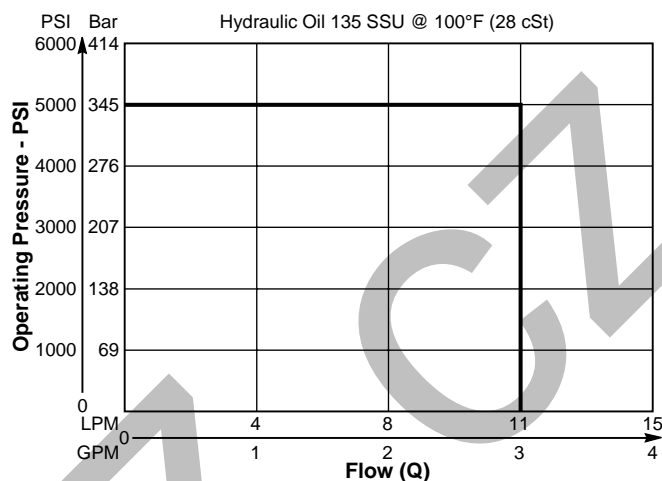
| | |
|------------------------|---------------------------|
| Wire Class | "H" for all voltages |
| A.C. Rectifiers | Integral full wave bridge |

Performance Curves

Pressure Drop vs. Flow (Through cartridge only)



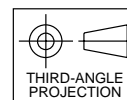
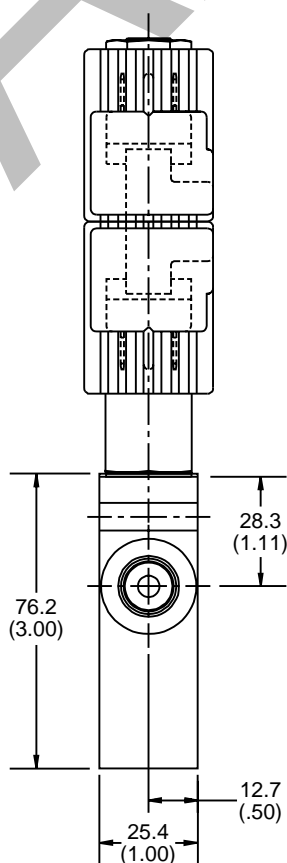
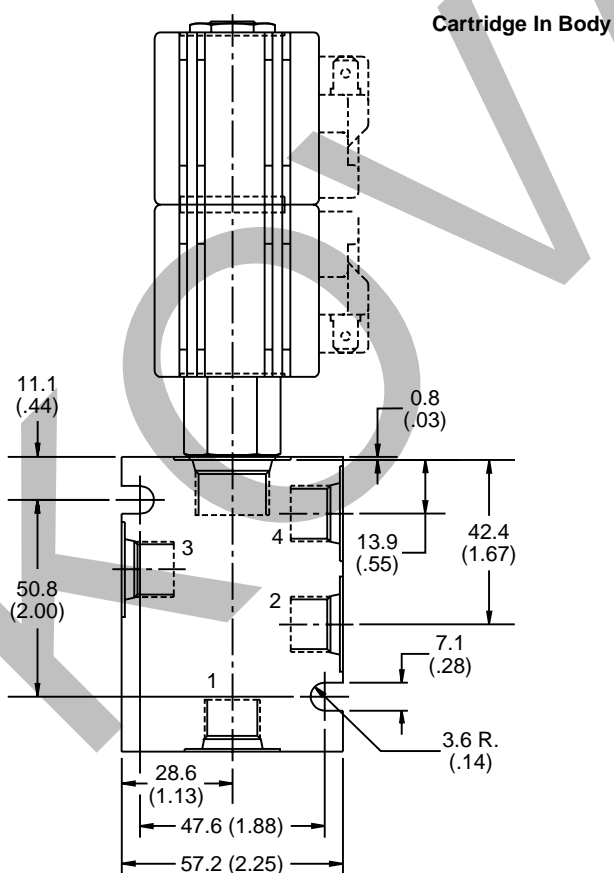
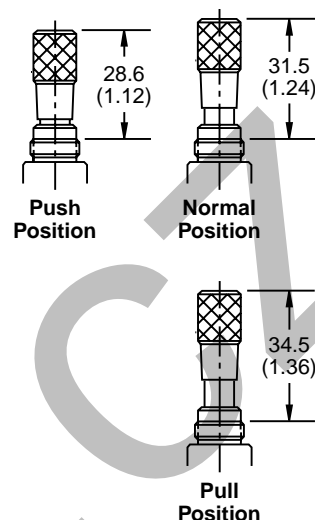
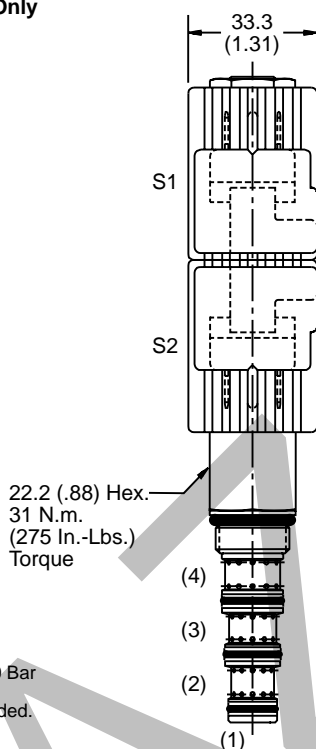
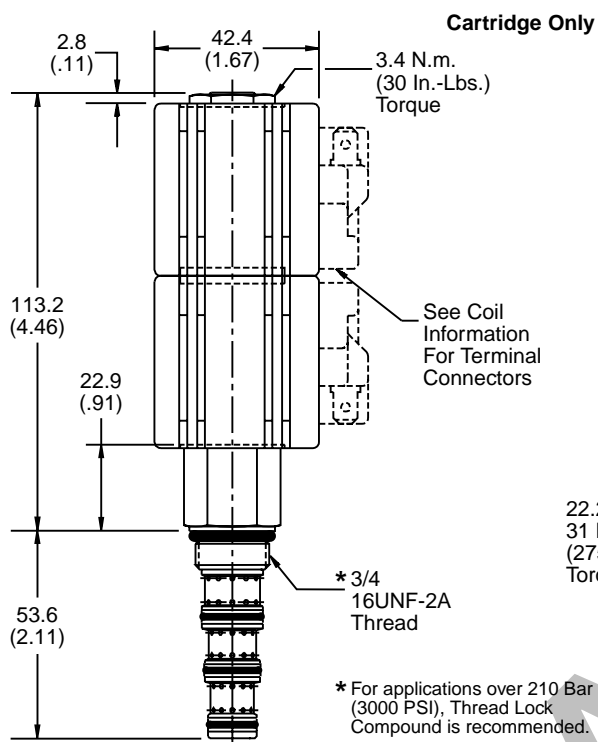
Operating Characteristics (Through cartridge only)



Curve Selection Chart

| SPOOL CODE | SPOOL SHIFTED | | | | SPOOL CENTERED | | |
|------------|---------------|--------|--------|--------|----------------|--------|--------|
| | 3 to 2 | 3 to 4 | 2 to 1 | 4 to 1 | 3 to 1 | 2 to 1 | 4 to 1 |
| C1 | 1 | 1 | 3 | 2 | — | — | — |
| C2 | 1 | 1 | 2 | 3 | 5 | 3 | 2 |
| C4 | 6 | 6 | 2 | 4 | — | — | — |
| C14 | 1 | 1 | 6 | 2 | 5 | 4 | — |
| C7 | 1 | 1 | 2 | 4 | 5 | — | 2 |
| C9 | 1 | 1 | 2 | 2 | 5 | — | — |

*Inch equivalents for millimeter dimensions are shown in (**)



| | | | | | | | | | |
|----------------|-----------|------------|-------|-----------------|-------|--------------|--------------|------------------|-------------|
| DSH | 08 | 5 | | | | | | | |
| Solenoid Valve | Size | Spool Type | Style | Override Option | Seals | Coil Voltage | Coil Wattage | Coil Termination | Body Option |

| Code | Style |
|------|--|
| 08 | 3/4" - 16UNF-2B Threaded Cavity with .625" Dia. Seat |

| Code | Type |
|------|--------------|
| Omit | Nitrile |
| V | Fluorocarbon |

| Code | Type |
|------|------------------------|
| Omit | Cartridge without Coil |
| L | 14 Watt |

| Code | Description |
|------|-------------|
| C1 | |
| C2 | |
| C4 | |
| C7 | |
| C9 | |
| C14 | |

| Code | Type |
|------|---------------------------|
| Omit | Without Manual Override |
| M | Push/Pull Manual Override |

| Code | Description |
|------|------------------------|
| Omit | Cartridge without Coil |
| D010 | 10 VDC |
| D012 | 12 VDC |
| D024 | 24 VDC |
| A120 | 120/110 VAC, 60/50 Hz |
| A240 | 240/220 VAC, 60/50 Hz |

| Code | Description |
|------|---|
| Omit | Cartridge without Coil |
| C | 1/2" NPTF Conduit Connector with 24" 18 AWG Wires |
| D | DIN 43650 (Hirschmann) Plug Face |
| P | SAE 1B-0.25 SAE Double Spade (DC Only) |
| W | Double Wire, 24" 18 AWG (DC Only) |
| WP | Waterproof Double Wire, 24" 16 AWG (DC Only) |

| Code | Port Size & Material |
|------|--------------------------------|
| Omit | Cartridge Only |
| 4P | 1/4" NPTF (B08-4-4P) Steel |
| A4P | 1/4" NPTF (B08-4-A4P) Aluminum |
| 6P | 3/8" NPTF (B08-4-6P) Steel |
| A6P | 3/8" NPTF (B08-4-A6P) Aluminum |
| 4T | SAE-4 (B08-4-4T) Steel |
| A4T | SAE-4 (B08-4-A4T) Aluminum |
| 6T | SAE-6 (B08-4-6T) Steel |
| A6T | SAE-6 (B08-4-A6T) Aluminum |
| 4B | 1/4" BSPG (B08-4-4B) Steel |
| A4B | 1/4" BSPG (B08-4-A4B) Aluminum |
| 6B | 3/8" BSPG (B08-4-6B) Steel |
| A6B | 3/8" BSPG (B08-4-A6B) Aluminum |

Shipping Weight
 Cartridge Only .20 kg (0.44 lbs.)
 Cartridge in Body .65 kg (1.44 lbs.)

SERVICE PARTS

| Code | Size | Code | Type | Code | Description | Code | Description |
|------|-----------|------|----------|------|------------------------|------|-------------|
| S8 | 1/2" I.D. | L | 14 Watts | C | Conduit | D010 | 10 VDC |
| SW8 | 1/2" I.D. | | | D | DIN 43650 | D012 | 12 VDC |
| | | | | P | Double Spade | D024 | 24 VDC |
| | | | | S | Double Screw | A120 | 120 VAC |
| | | | | W | Double Wire | A240 | 240 VAC |
| | | | | WP | Waterproof Double Wire | | |

DIN Connector:
 See Coil Data Sheet

Coil Nut:
 DSH085 — 118127-00

Nitrile Seal Kit:
 DSH085 — SK08-4

Fluorocarbon Seal Kit:
 DSH085 — SK08-4V

Notes: See Series 08 Coil Data Sheet.
 For other coil voltages and terminations, consult factory.
 S8 Coil applies to all terminations except WP.
 SW8 Coil applies to WP termination only.

NOTE:
 If system pressure does not exceed 210 Bar (3000 PSI), aluminum bodies can be used.
 Higher pressures require steel bodies.