

General Description

The DS161C and DS161N solenoid valves are used in circuits requiring on/off valves and low leakage. Single acting cylinder applications typically utilize valves of this type. Valves can be used for bleed down flow and/or raising and lowering a vertical cylinder. Normally open and normally closed configurations plus manual overrides are available.

Operation

Normally Closed

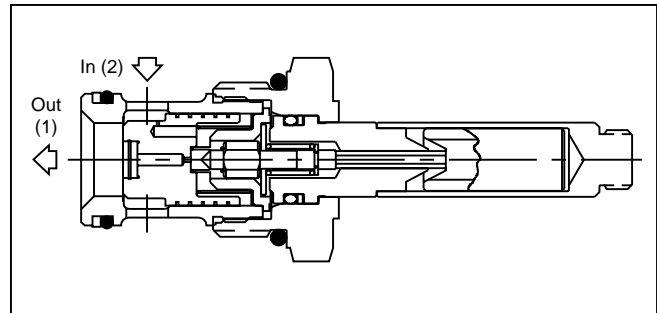
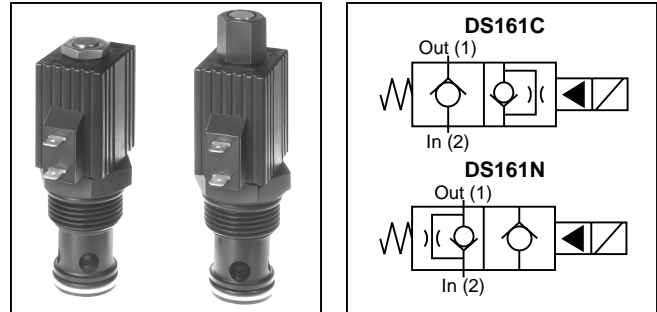
The valve pilot is held on its seat by spring force, blocking pilot flow. This allows pressure at the inlet to hold the poppet on its seat, thus, preventing flow through the valve (inlet to outlet). When the coil is energized, the valve pilot is pulled off its seat. This vents pressure inside the poppet to the outlet port, creating a pressure imbalance across the main poppet which allows flow from the inlet to the outlet.

Normally Open

The valve pilot is held off of its seat by spring force. Pilot flow is vented to the outlet port, creating a pressure imbalance which moves the main poppet off its seat, allowing flow from the inlet to the outlet. When the coil is energized, the valve pilot and main poppets are forced to close, thus blocking flow from the inlet to the outlet.

Features

- Low hysteresis
- Replaceable, one piece encapsulated, coils with minimal amperage draw
- Variety of coil terminations and voltages
- Variety of manual override options available

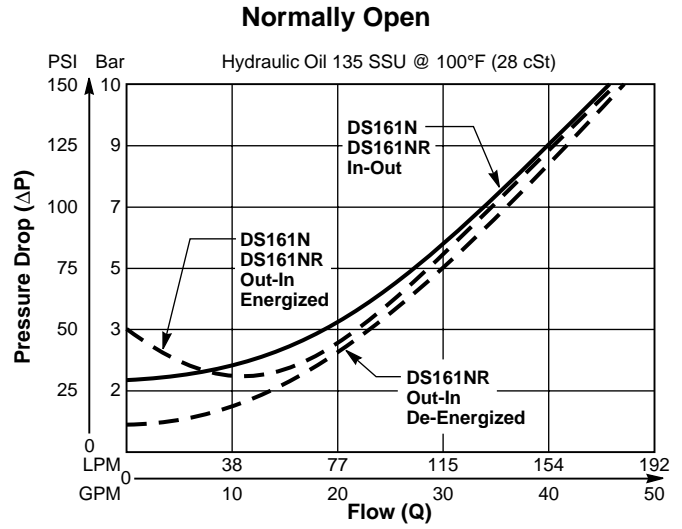
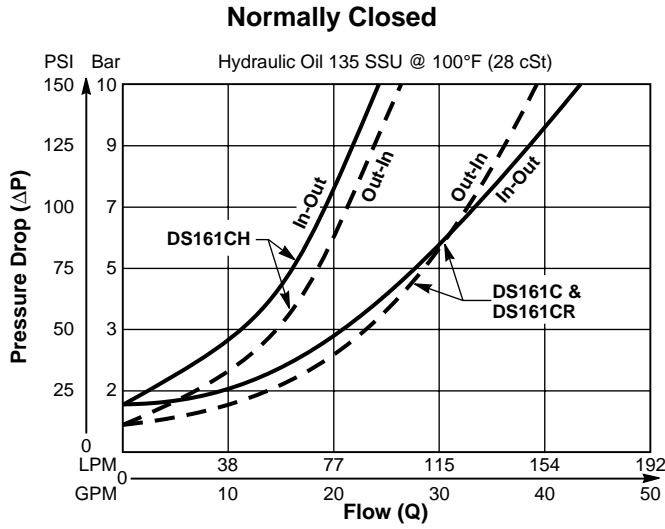


Specifications

Rated Flow (At 70 PSI ΔP)	DS161CH 60 LPM (15 GPM) All other versions 150 LPM (40 GPM)
Maximum Inlet Pressure	210 Bar (3000 PSI)
Leakage	20 drops/min. (1-1/3 cc/min.) at 210 Bar (3000 PSI)
Minimum Operating Voltage	80% of rated voltage at 210 Bar (3000 PSI)
Operating Temp. Range (Ambient)	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (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. C16-2

Performance Curves

Pressure Drop vs. Flow (Through cartridge only)



Solenoid Coil Specifications

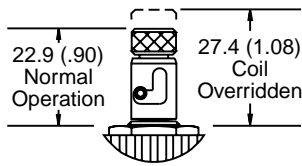
Voltage	6 VDC		10 VDC		12 VDC		18 VDC		24 VDC		36 VDC		48 VDC		120 VAC		240 VAC		480 VAC	
	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.	STD.	HD.
Watts	17	30	17	30	17	30	17	30	17	30	17	30	17	30	17	30	17	30	17	N/A
Amps	2.43	4.84	1.58	3.20	1.44	2.30	0.94	1.86	0.72	1.20	0.43	0.88	0.30	0.58	0.15	0.26	.075	.125	.038	N/A

Response Time (at nominal flow, 3000 PSI)	DS161C & DS161CR (Normally Closed)	DS161CH (N.C. Fast Res.)	DS161N & DS161NR (Normally Open)
Open	50ms	40ms	45ms
Close	130ms	60ms	75ms

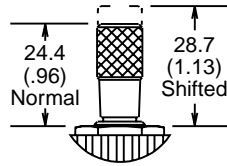
Wire Class	"H" for all voltages
A.C. Rectifiers	Integral full wave bridge

ds161.pm6.5, bl, ll

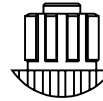
*Inch equivalents for millimeter dimensions are shown in (**)



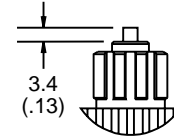
Push & Twist
(N.C. Valves Only)



Pull and Release
(N.C. Valves Only)

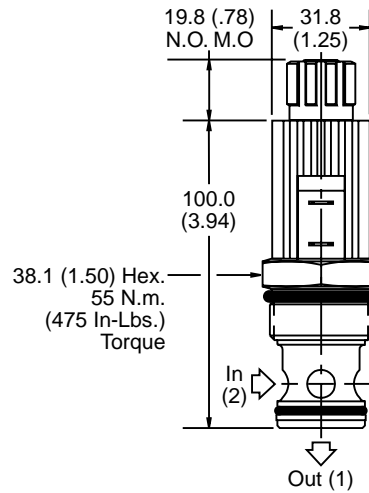
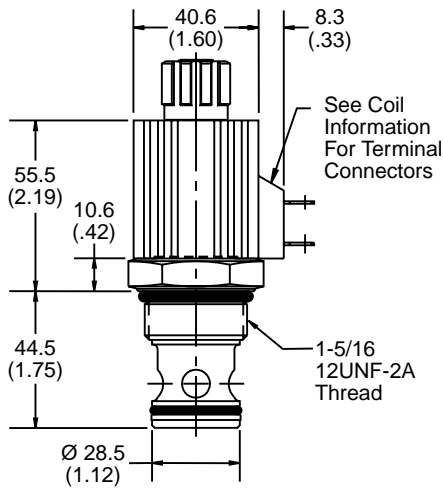


Flush Rod
(N.O. Valves Only)

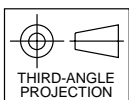
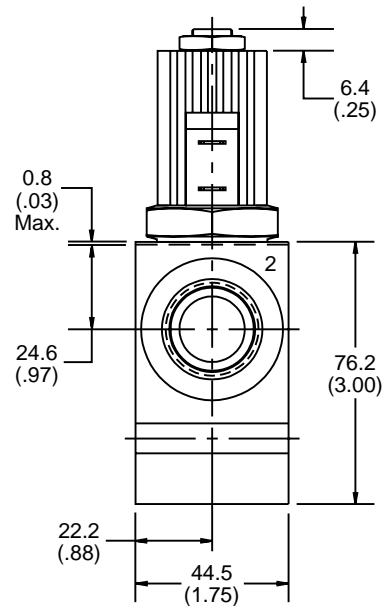
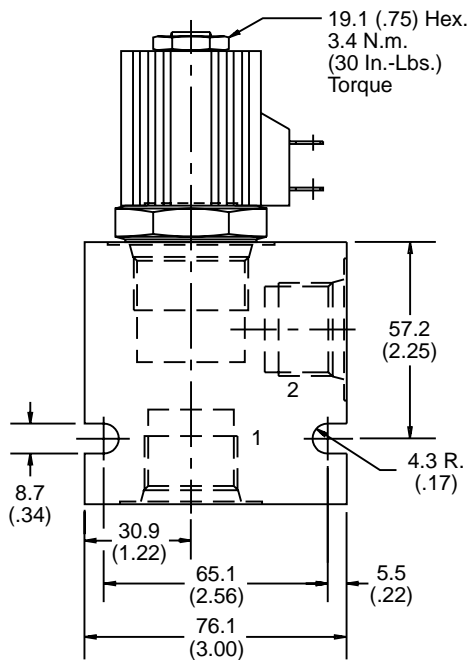


Extended Rod
(N.O. Valves Only)

Cartridge Only



Cartridge In Body



DS	16	1							
Solenoid Valve	Size	Poppet Type	Style	Override Option	Seals	Coil Voltage	Coil Wattage	Coil Termination	Body Option

Code	Style
16	1-5/16" - 12UNF-2B

Code	Type
Omit	Nitrile
V	Fluorocarbon

Code	Type
Omit	Without Manual Override
E	Push Type Manual Override with Extended Rod (Normally Open Only)
M	Push Type Manual Override with Flush Rod (Normally Open Only)
P	Pull and Release Manual Override (Normally Closed Only)
T	Push & Twist Manual Override

Code	Type
Omit	Cartridge without Coil
L	17 Watt
H	30 Watt

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)
S1	Single 8-32 Screw & Nut, internally ground (DC Only)
W	Double Wire, 24" 18 AWG (DC Only)
W1	Single Wire, internally ground, 24" 18 AWG (DC Only)

Code	Description
Omit	Cartridge without Coil
D006	6 VDC
D010	10 VDC
D012	12 VDC
D018	18 VDC
D024	24 VDC
D036	36 VDC
D048	48 VDC
A120	120/110 VAC, 60/50 Hz
A240	240/220 VAC, 60/50 Hz
A480	480/440 VAC, 60/50 Hz

Code	Port Size & Material
Omit	Cartridge Only
8P	1/2" NPTF (B16-2-8P) Steel
A8P	1/2" NPTF (B16-2-A8P) Aluminum
12P	3/4" NPTF (B16-2-12P) Steel
A12P	3/4" NPTF (B16-2-A12P) Aluminum
16P	1" NPTF (B16-2-16P) Steel
A16P	1" NPTF (B16-2-A16P) Aluminum
8T	SAE-8 (B16-2-8T) Steel
A8T	SAE-8 (B16-2-A8T) Aluminum
12T	SAE-12 (B16-2-12T) Steel
A12T	SAE-12 (B16-2-A12T) Aluminum
16T	SAE-16 (B16-2-16T) Steel
A16T	SAE-16 (B16-2-A16T) Aluminum
8B	1/2" BSPG (B16-2-8B) Steel
A8B	1/2" BSPG (B16-2-A8B) Aluminum
12B	3/4" BSPG (B16-2-12B) Steel
A12B	3/4" BSPG (B16-2-A12B) Aluminum
16B	1" BSPG (B16-2-16B) Steel
A16B	1" BSPG (B16-2-A16B) Aluminum

Code	Description
Omit	Without Manual Override
E	Push Type Manual Override with Extended Rod (Normally Open Only)
M	Push Type Manual Override with Flush Rod (Normally Open Only)
P	Pull and Release Manual Override (Normally Closed Only)
T	Push & Twist Manual Override

Code	Description
Omit	Normally Closed, Metered reverse flow.
CH	Normally Closed, Metered reverse flow. Fast response (15 GPM Max.)
CR	Normally Closed, Full reverse flow.
N	Normally Open, Metered reverse flow.
NR	Normally Open, Full reverse flow.

Shipping Weight

Cartridge Only .58 kg (1.3 lbs.)

Cartridge in Body 2.0 kg (4.4 lbs.)

SERVICE PARTS	
DIN Connector:	Coil Assemblies
Grey — 692914	851017***** 17 Watt Conduit Coil
Black — 692915	851018***** 30 Watt Conduit Coil
Coil Nut:	851019***** 17 Watt DIN (Hirschmann) Coil
DS161C, CH, CR—	851020***** 30 Watt DIN (Hirschmann) Coil
118127-00	851021***** 17 Watt Double Spade Coil
DS161N, NR—	851022***** 30 Watt Double Spade Coil
118113-00	851023***** 17 Watt Double Wire Coil
Nitrile Seal Kit:	851024***** 30 Watt Double Wire Coil
SK16-2	851025***** 17 Watt Single Screw Coil
Fluorocarbon Seal Kit:	851026***** 30 Watt Single Screw Coil
SK16-2V	851027***** 17 Watt Single Wire Coil
	851028***** 30 Watt Single Wire Coil
	(*****Calls out voltage. For example: 851021-012VDC is a 12 volt, 17 watt Double Spade Coil.)