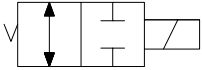
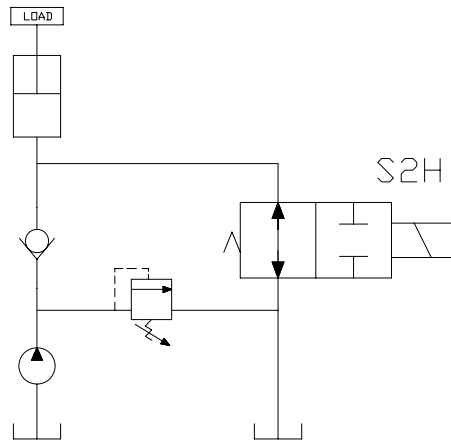


2 Way 2 Position Normally Open Spool Valves

	GPM	PSI	LPM	BAR	MODEL	CAVITY	PAGE
	3	3000	11	207	MA-S2H	5/8"-18	82
	3	4000	11	276	HA-S2H	5/8"-18	84
	5	3000	19	207	PB-S2H	3/4"-16	86
	8	3000	30	207	DE-S2H	7/8"-14	88
	8	4000	30	276	HE-S2H	7/8"-14	90

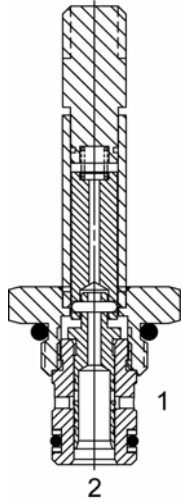
Typical Schematic

Typical application for the S2H is a pump unloading valve.



**WARNING:** The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**MA-S2H Direct Acting Spool, 2 Way, Normally Open**



**DESCRIPTION**

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally open, spool valve.

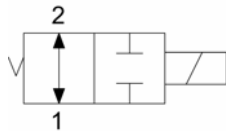
**OPERATION**

When de-energized the MA-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

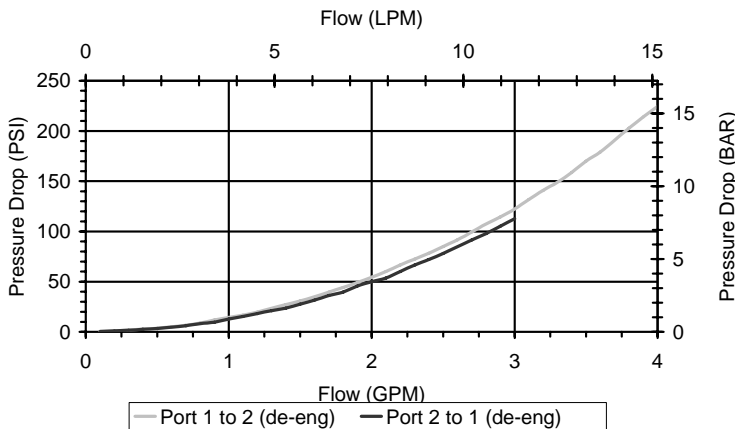
**HYDRAULIC SYMBOL**



HA-S2H should be specified where higher pressures or 2 to 1 shift operation is required.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

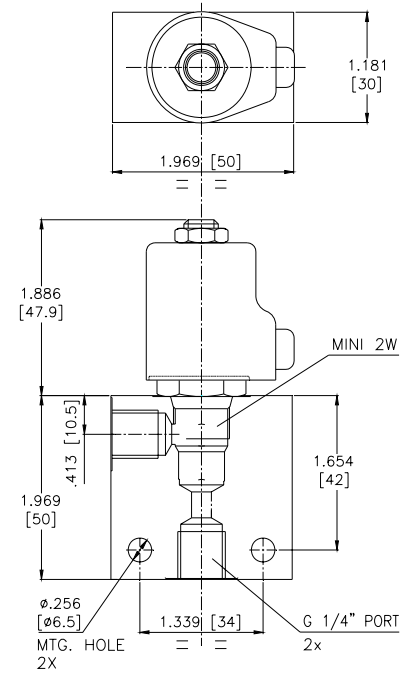
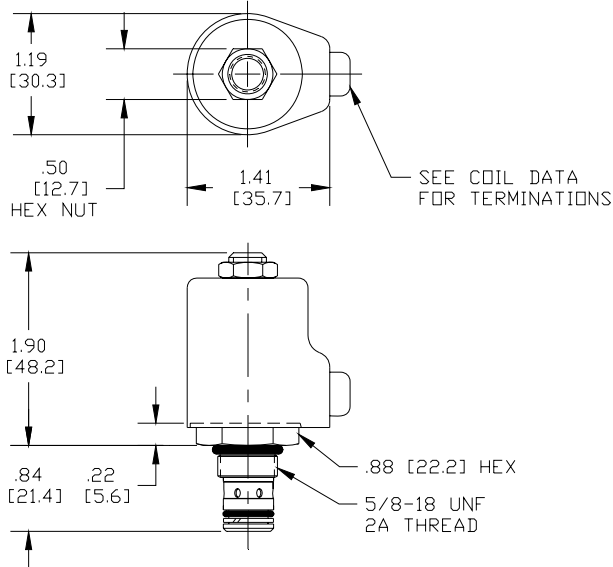


**VALVE SPECIFICATIONS**

Maximum Flow	3 GPM (11 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.12 lbs. (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (40 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Tools kit (form tool, reamer, tap)	40500003
Seal Kit	21191002

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



**ORDERING INFORMATION**

**MA-S2H** - - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**

**Note: Use screen only if flow direction is from (1) to (2).**

**"M" COIL TERMINATION**

- Double Lead **DL**
- (\* several types of termination can be attached on leads on request)
- DIN 43650 (Hirschman) – (AC&DC) **HC**

- Blank
- N**
- S**

**BODIES**

- Without Body
- 1/4" BSP Ports
- #6 SAE Ports

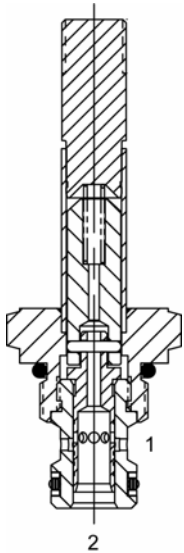
**VOLTAGE** (\*other voltages available on request)

- 12** 12 VDC
- 24** 24 VDC
- 22** 220 VAC with molded full wave rectifier

Approximate Coil Weight: .30 lbs (.14 kg.)

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**HA-S2H Direct Acting Spool, 2 Way, Normally Open**



**DESCRIPTION**

"High Pressure" 7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2-way normally open, spool valve.

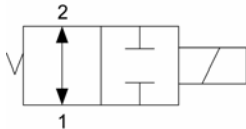
**OPERATION**

When de-energized the HA-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

**HYDRAULIC SYMBOL**

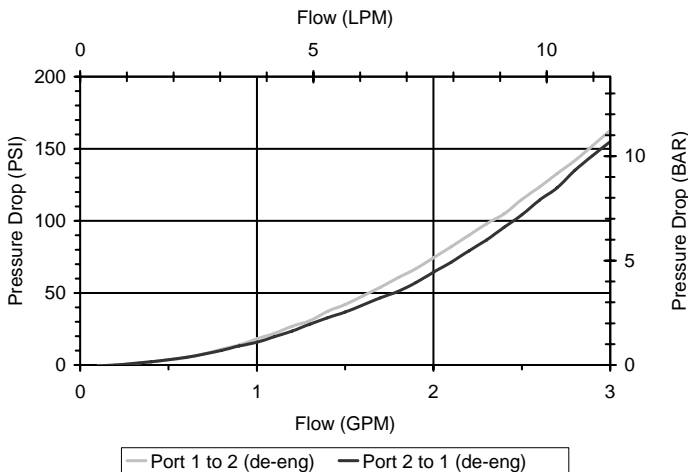


Operational shift limit 2 GPM (8 LPM).

For shifted performance consult chart.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

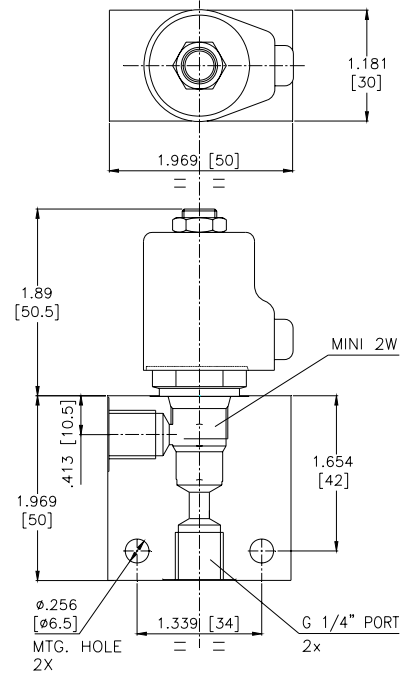
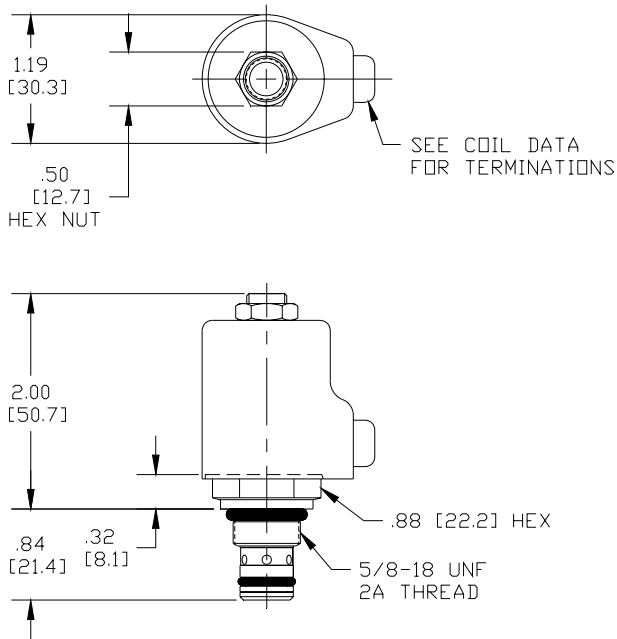


**VALVE SPECIFICATIONS**

Maximum Flow	3 GPM (11 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.14 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Tools kit (form tool, reamer, tap)	40500003
Seal Kit	21191002

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**DIMENSIONS**



**ORDERING INFORMATION**

**HA-S2H**

**OPTIONS**  
Buna Standard  
Viton Standard

00  
V0

Blank  
N  
S

**BODIES**  
Without Body  
1/4" BSP Ports  
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

12  
24  
22

**VOLTAGE** (\*other voltages available on request)  
12 VDC  
24 VDC  
220 VAC with molded full wave rectifier

**"M" COIL TERMINATION**

Double Lead  
(\* several types of termination can be attached on leads on request)  
DIN 43650 (Hirschman)

DL  
HC

Approximate Coil Weight: .30 lbs (.14 kg.)

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**PB-S2H Direct Acting Spool, 2 Way, Normally Open**

**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally open, spool valve.

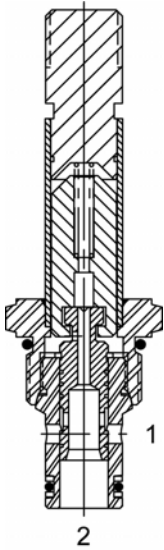
**OPERATION**

When de-energized the PB-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

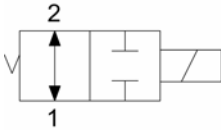
**OPERATION OF MANUAL OVERRIDE OPTION:** To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

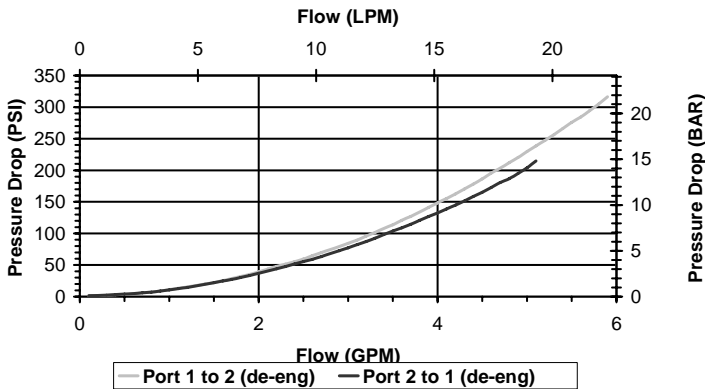


**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

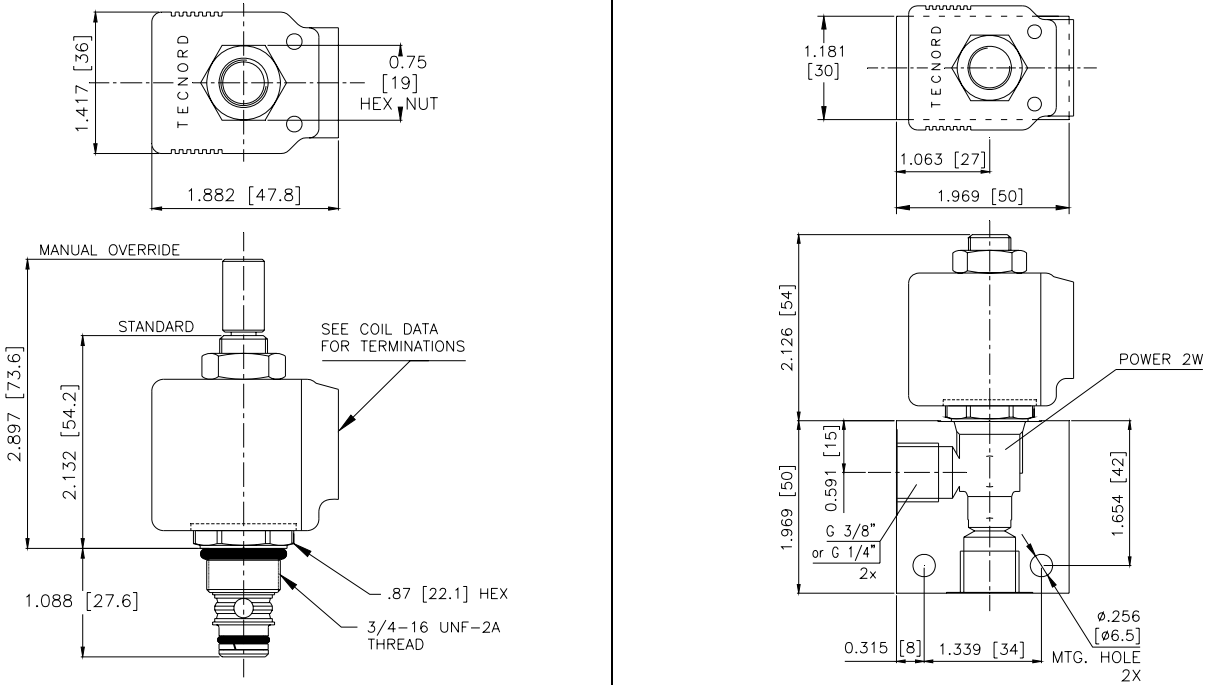


**VALVE SPECIFICATIONS**

Nominal Flow	5 GPM (19 LPM) from (1) to (2) 3 GPM (11 LPM) from (2) to (1)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.19 lbs. (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 2W
Cavity Tools kit (form tool, reamer, tap)	40500005
Seal Kit	21191102

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



**ORDERING INFORMATION**

**PB-S2H**

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Nondetent **B1**
- Viton, Override, Nondetent **V1**
- Buna, Screen, Override, Nondetent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

**Note: Use screen only if flow direction is from (1) to (2).**

**"K" COIL TERMINATION**

(All DC Except as Noted)

- DL** Double Lead  
(\*several types of termination can be attached on leads on request)
- HC** Din 43650 (Hirschmann) – (AC & DC)
- DI** Deutsch – Integral DT04-2P

**BODIES**

- Blank
- N** 1/4" BSP Ports
- N1** 3/8" BSP Ports
- S** #6 SAE Ports

**VOLTAGE**

(\*other voltages available on request)

- 12** 12 VDC
- 24** 24 VDC
- 22** 220 VAC without internal rectifier

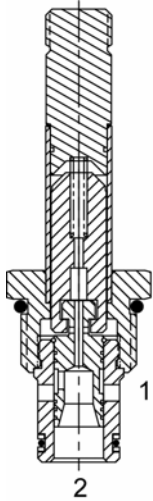
**IMMERSION PROOF "P" TYPE**

- PIA** "I" Coil AMP Superseal - Integral
- PID** "I" Coil Deutsch – Integral DT04-2P
- PIJ** "I" Coil AMP Jr. Timer – Integral
- PIM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs/.19 kg.

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DE-S2H Direct Acting Spool, 2 Way, Normally Open**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally open, spool valve

**OPERATION**

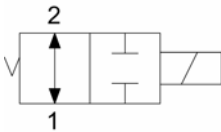
When de-energized the DE-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

**OPERATION OF MANUAL OVERRIDE OPTION:** To override, turn the manual override screw counter-clockwise. To release turn the manual override screw clockwise

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

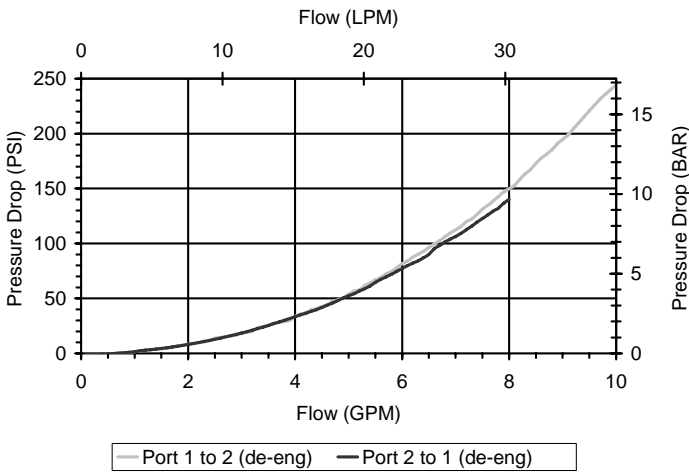
**HYDRAULIC SYMBOL**



For higher pressure systems see HE-S2H

**PERFORMANCE**

Actual Test Data (Cartridge Only)



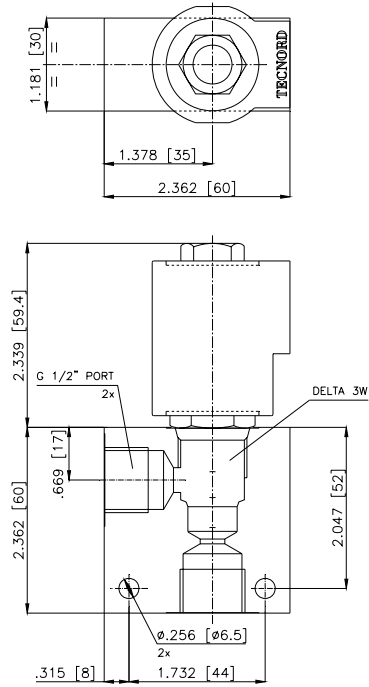
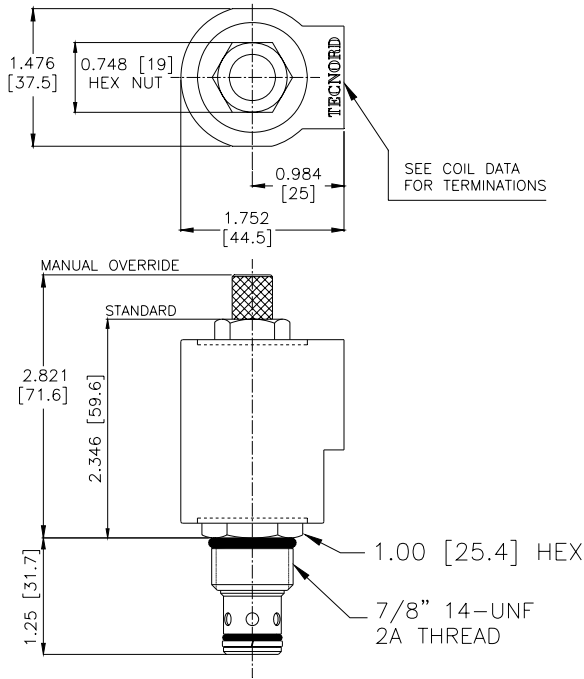
**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM) from (1) to (2) 4 GPM (15 LPM) from (2) to (1)
Rated Operating Pressure	3500 PSI (245 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.26 lbs. (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 2W
Cavity Tools kit (form tool, reamer, tap))	40500000
Seal Kit	21191202

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



**DIMENSIONS**



**ORDERING INFORMATION**

**DE-S2H** - - - - -

- OPTIONS**
- Buna Standard **00**
  - Viton Standard **V0**
  - Buna, Override **0M**
  - Viton, Override **VM**
  - Buna, Screen **A0**
  - Viton, Screen **W0**
  - Buna, Screen, Override **B3**
  - Viton, Screen, Override **V3**

- BODIES**
- Blank
  - N** 1/2" BSP Ports
  - S** #8 SAE Ports
- VOLTAGE** (\*other voltages available on request)
- 12** 12 VDC
  - 24** 24 VDC
  - 22** 220 VAC without internal rectifier

**Note: Use screen only if flow direction is from (1) to (2).**

**"V" COIL TERMINATION**  
(All DC Except as Noted)

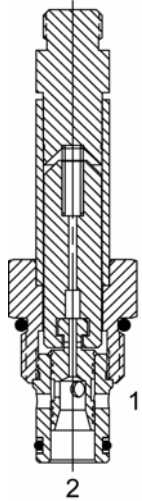
- DL** Double Lead  
(\* several types of termination can be attached on leads on request)
- HC** DIN 43650 (Hirschman) – (AC & DC)
- DI** Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
- DIA** "I" Coil AMP Superseal - Integral
  - DID** "I" Coil Deutsch – Integral DT04-2P
  - DIJ** "I" Coil AMP Jr. Timer - Integral
  - DIM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs/.33 kg.

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**HE-S2H Direct Acting Spool, 2-Way, Normally Open**



**DESCRIPTION**

"High Pressure" 10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally open, spool valve

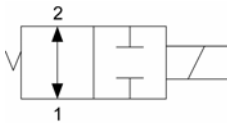
**OPERATION**

When de-energized the HE-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

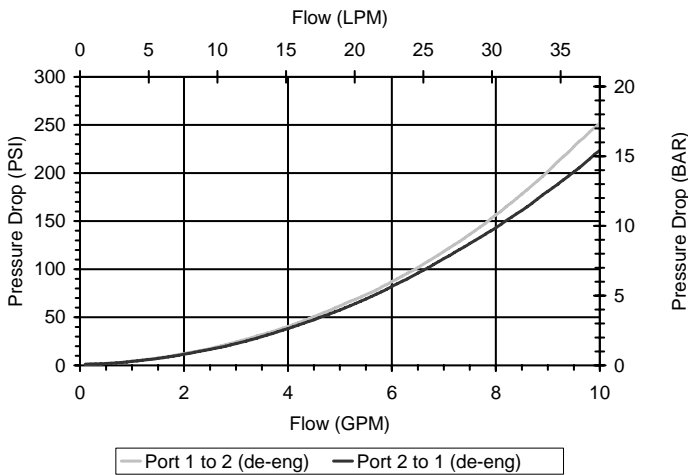
**HYDRAULIC SYMBOL**



Uses "L" Coil.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

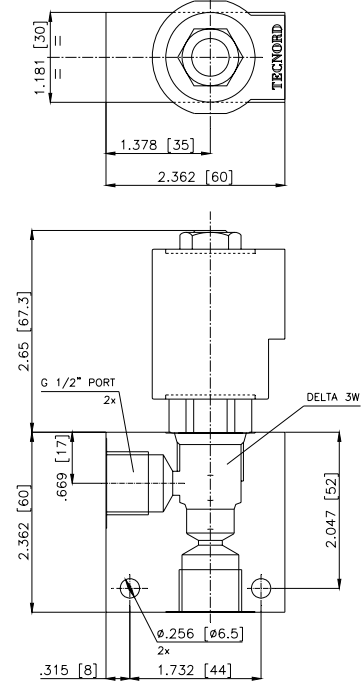
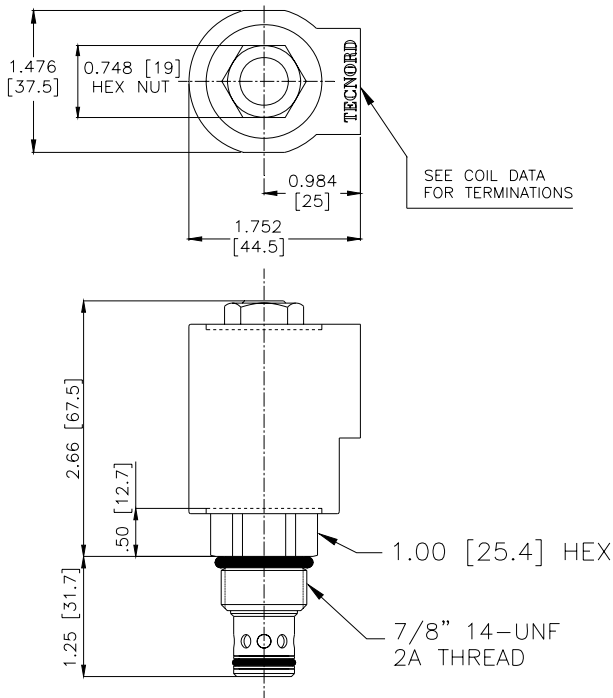


**VALVE SPECIFICATIONS**

Maximum Flow	8 GPM (30 LPM) from 1 to 2 4 GPM (15 LPM) from 2 to 1
Max Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.38 lbs. (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 2W
Cavity Tools (form tool, reamer, tap)	40500000
Seal Kit	21191202

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



**ORDERING INFORMATION**

**HE-S2H -**

**OPTIONS**  
 Buna Standard **00**  
 Viton Standard **VO**

Blank  
**N**  
**S**

**BODIES**  
 Without Body  
 1/2" BSP Ports  
 #8 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory options.

**VOLTAGE** (\*other voltages on request)  
 12 VDC  
 24 VDC  
 220 VAC without internal rectifier

**"L" - COIL TERMINATION**  
 (All DC Except as Noted)

**DL** Double Lead  
 (\* several types of termination can be attached on leads on request)

**HC** DIN 43650 (Hirschman) – (AC & DC)  
**DI** Deutsch – Integral DT04-2P

**LIA** IMMERSION PROOF "L" TYPE  
**LID** "I" Coil AMP Superseal - Integral  
**LIJ** "I" Coil Deutsch – Integral DT04-2P  
**LIM** "I" Coil AMP Jr. Timer - Integral  
 "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .56 lbs. (.25 kg.)

**WARNING:** The specifications/application data shown in our catalogs and data sheets is intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.