

Valve Sensor Options

INTEGRAL POSITION SENSOR — EMI/RFI CE-RATED

HydraForce offers a Hall Effect style integral position sensor for selected cartridge valves. Hall Effect sensors are known for proven reliability in the field and are a cost-effective way to add sensing capability to a hydraulic control valve circuit.

This sensing element is compatible with two-position, on/off solenoid cartridge valves, including the 10-size spool and poppet valves, the 12-size poppet valves, 16-size poppet valve, and the 58-size poppet valves. It can be specified with both normally open and normally closed valve models.

Because the sensor is installed below the coil, it can still be used with valves that have a manual override.

- CE Rated for global application.
- Burst, endurance and pressure ratings same as standard models without the sensor.
- Ability to use manual override.
- Compatible with 58-size, 10-size, 12-size, and 16-size two-position poppet and spool valves. Refer to individual valve ordering information for availability.

POSITION SENSOR RATINGS

Neutral Sensing

Supply Voltage (Vcc): +4.5 to +28 Vdc

Output Voltage with Target Present: Vcc

Output Clamp Current: 40 mA min. to 65 mA max. for Vcc up to 28 V

Connectors: Deutsch DT04-4P: Part No. 4001960, M12-4P

IP Rating: IP67

Mechanical Shock: 50 Gs, 11 ms half-sine

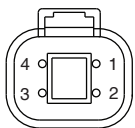
ESD: Nondestructive, ±15 KV Air Discharge

EMI: 20 MHz to 1 GHz, up to 100 V/m

Operating Temperature: -40 °C to 110 °C (-40 °F to 230 °F)

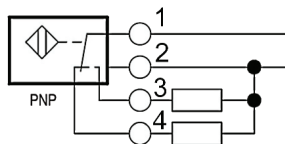
SENSOR WIRING

DT04-4P
DEUTSCH CONNECTOR

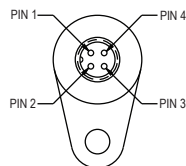


PIN 1 – (Red) Input Voltage
PIN 2 – (Black) Ground
PIN 3 – (White) N.O.
PIN 4 – (Green) N.C.

Mating Connector:
DT06-4S: Part No. 4001953

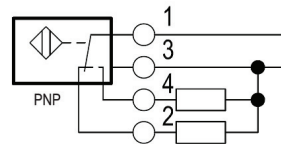


M12
CONNECTOR



PIN 1 – Input Voltage
PIN 2 – N.C.
PIN 3 – Ground
PIN 4 – N.O.

Mating Connector:
M12-4S: Available from www.turck.com or www.binder.com



Valve Sensor Options

INSTALLATION AND APPLICATION NOTES

Installation

This valve is fully assembled at the factory. Improper installation, by applying torque to the wrong element of this assembly, can cause damage to the internal components affecting operation. To ensure trouble-free operation, follow these installation steps:

1. Thread valve into appropriate cavity.
2. Torque valve, turning adapter only (hex closest to the cavity). See table for tool size and torque.
3. Install coil and coil nut.
4. Position coil to orient connector.
5. Torque coil nut to 5–7 ft•lb (7–9 N•m).
6. Rotate sensor housing to align connector if necessary.



Caution: Misapplied torque can cause valve failure. Torque only the adapter and coil nut. Do not torque any other components.

Installation Tool Size and Torque

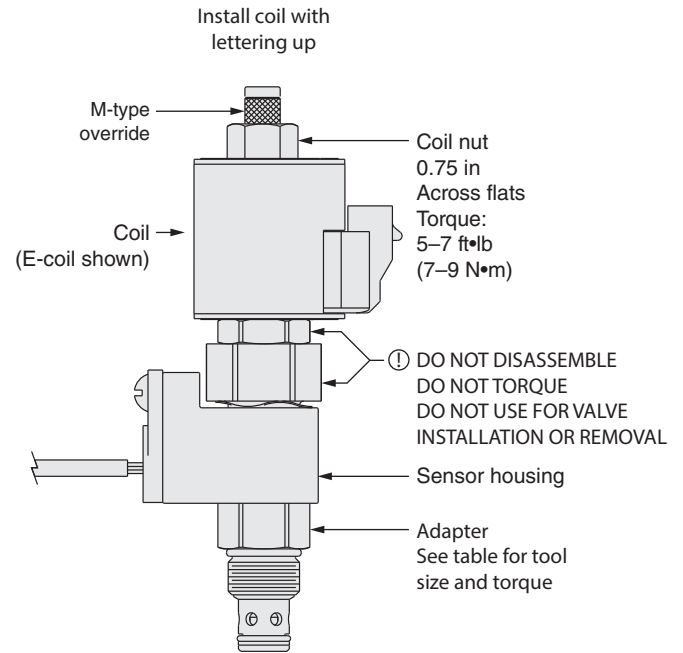
Cartridge size	Adapter tool size	Torque
SV58	1 in hex	19–21 ft•lb (26–28 N•m)
SV10	1 in hex	24–28 ft•lb (33–35 N•m)
HSV10	1 in hex	75–85 ft•lb (102–115 N•m)
SV12	1.25 in hex	33–37 ft•lb (45–50 N•m)
HSV12	1.25 in hex	115–125 ft•lb (156–170 N•m)
SV16	1.5 in hex	46–54 ft•lb (63–73 N•m)

Application

The position sensor requires a voltage supply between 4.5 and 28 Vdc, and a ground connection. It has a normally closed and a normally open output. Both outputs are pulled-down. The output changes state as the valve shifts. Output clamp current is 40 mA min. to 65 mA max.

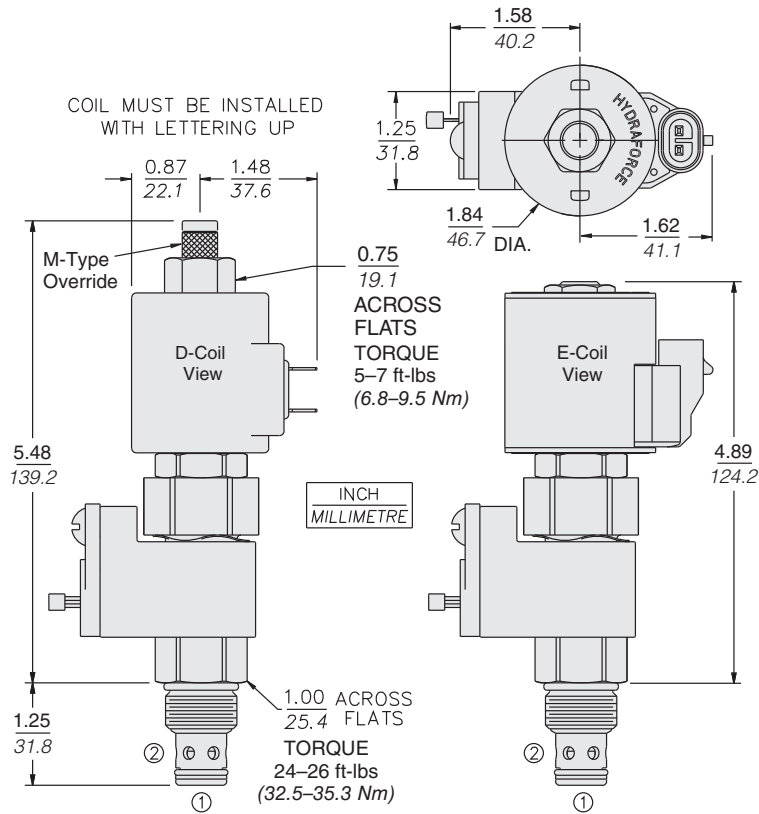


Caution: Exceeding voltage or current ratings can damage the sensor. Operate only using a power supply with surge and load-dump protection.



Valve Sensor Options

TYPICAL DIMENSIONS for 10 Size Valves with Sensor



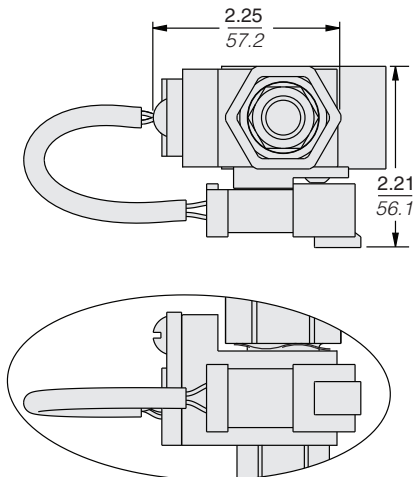
SV10-P20A

See catalog page 1.016.1 for more info. including complete ordering info.

SV10-P22A

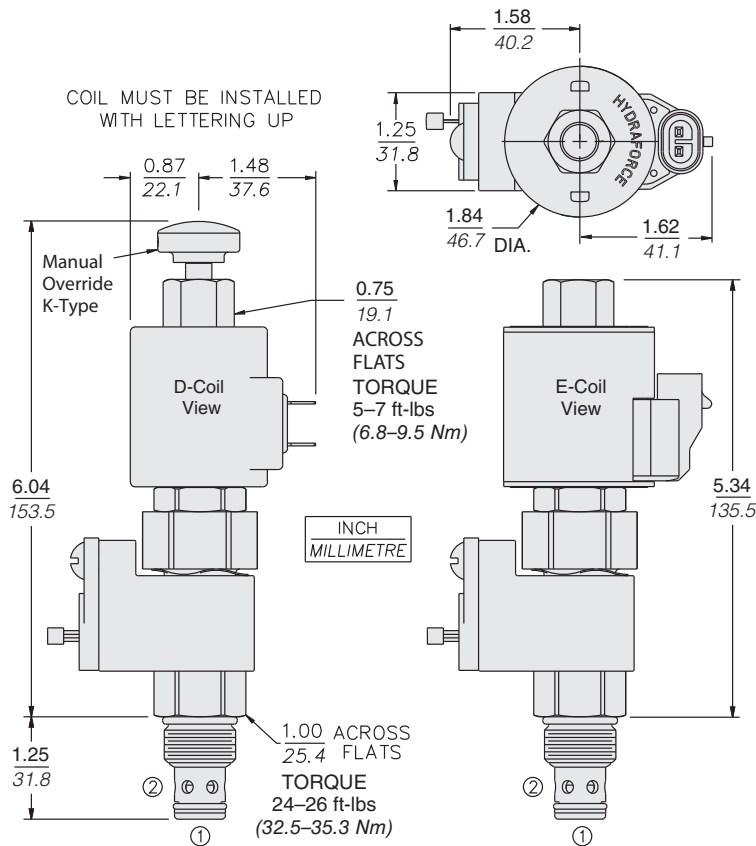
See catalog page 1.044.1 for more info. including complete ordering info.

SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION



Valve Sensor Options

TYPICAL DIMENSIONS for 10 Size Valves with Sensor



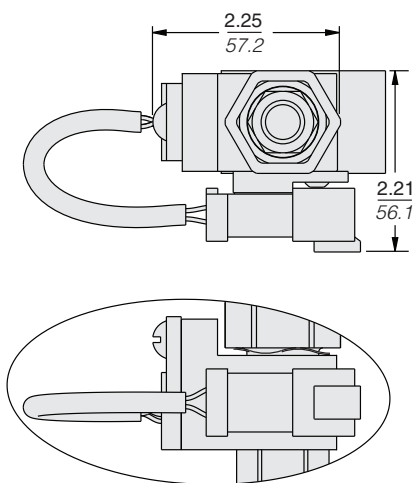
SV10-P21A

See catalog page 1.032.1 for more info. including complete ordering info.

SV10-P23A

See catalog page 1.053.1 for more info. including complete ordering info.

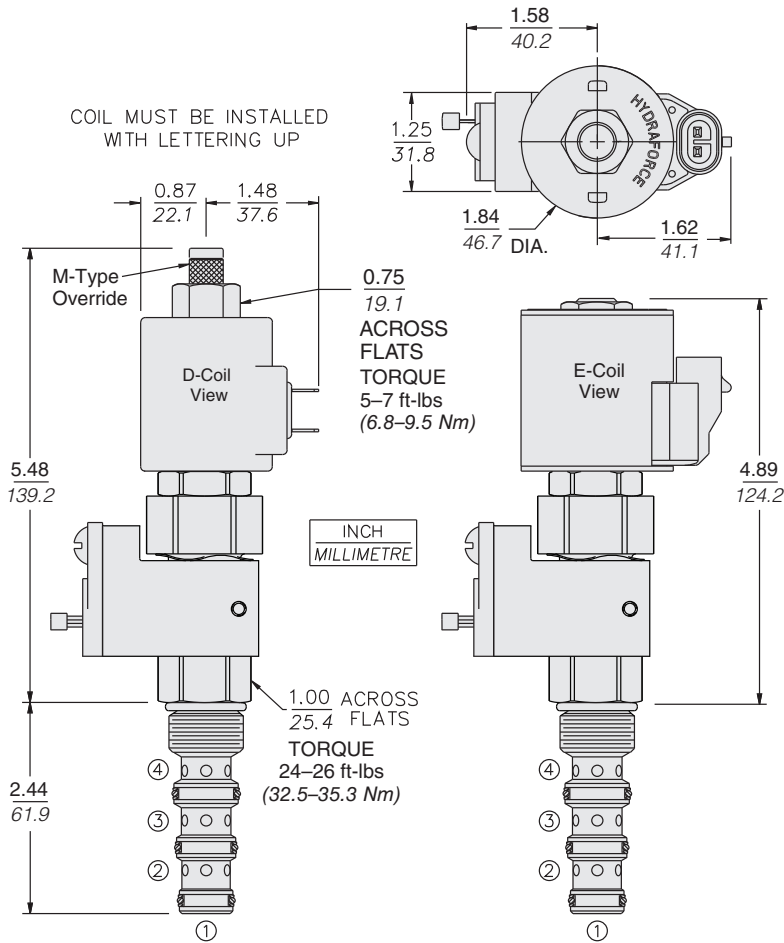
SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION



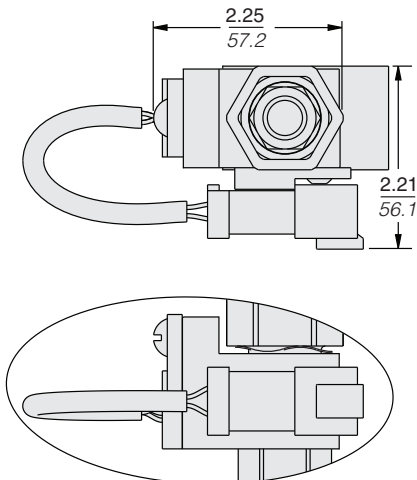
Valve Sensor Options

TYPICAL DIMENSIONS for 10 Size Valves with Sensor

SV10-P40 See catalog page 1.407.1 for more info. including complete ordering info.

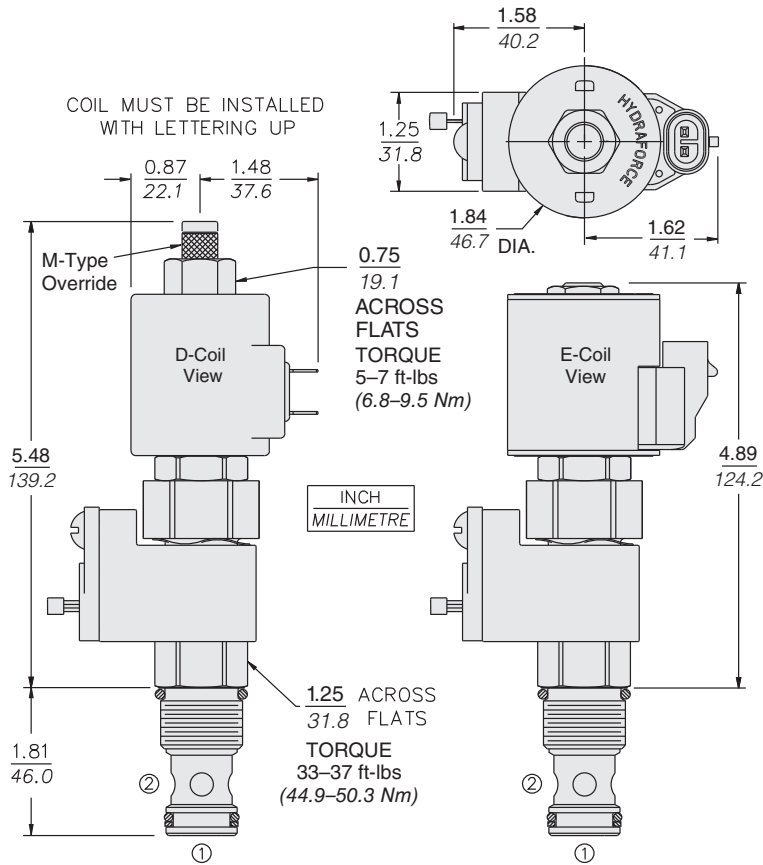


SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION



Valve Sensor Options

TYPICAL DIMENSIONS for 12 Size Valves with Sensor



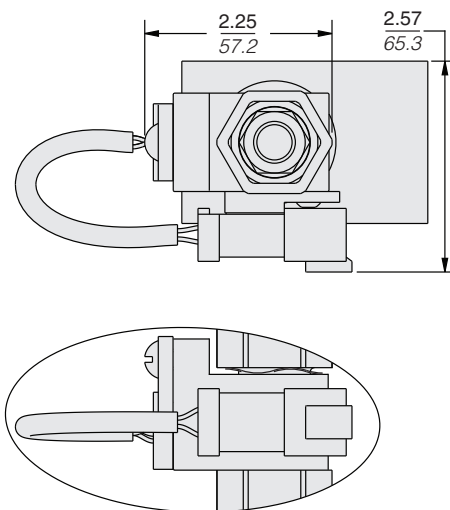
SV12-P20A

See catalog page 1.018.1 for more info. including complete ordering info.

SV12-P22A

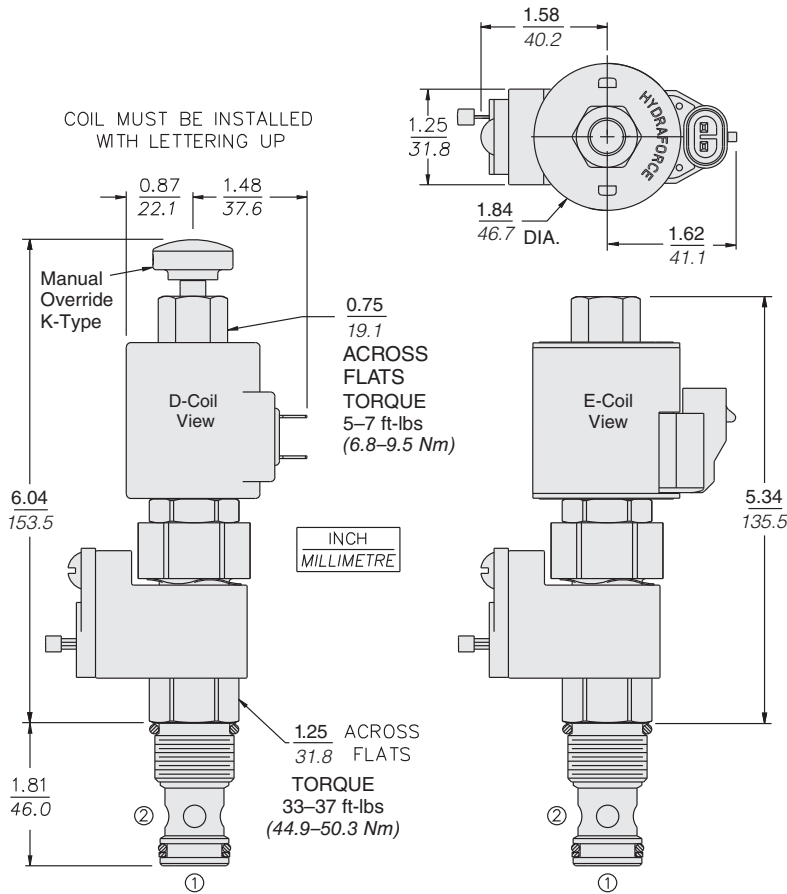
See catalog page 1.045.1 for more info. including complete ordering info.

SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION



Valve Sensor Options

TYPICAL DIMENSIONS for 12 Size Valves with Sensor



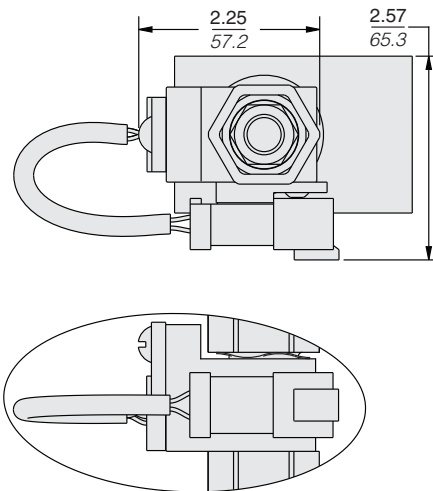
SV12-P21A

See catalog page 1.035.1 for more info. including complete ordering info.

SV12-P23A

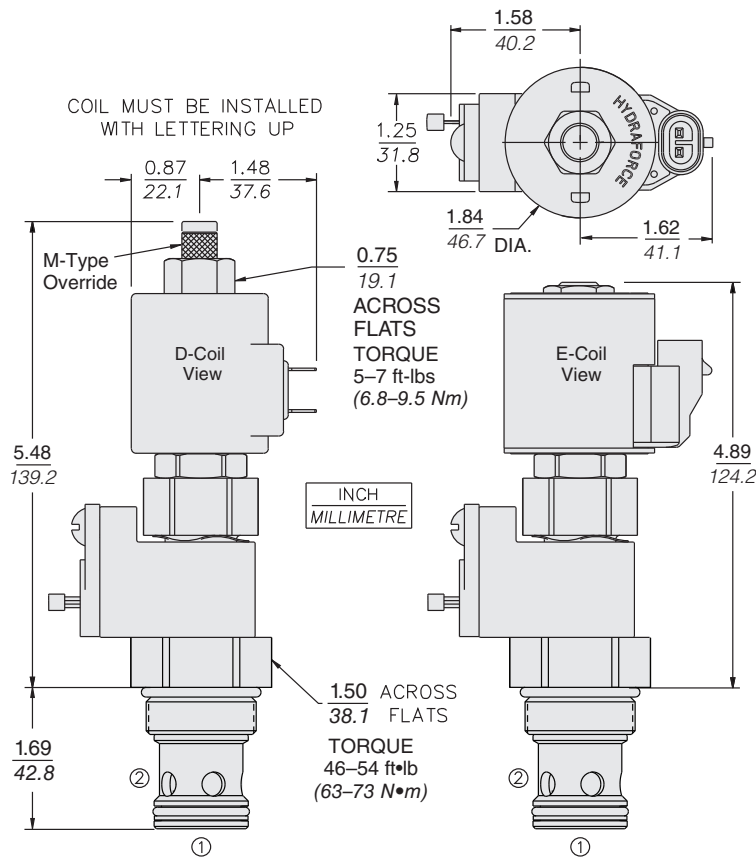
See catalog page 1.054.1 for more info. including complete ordering info.

SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION



Valve Sensor Options

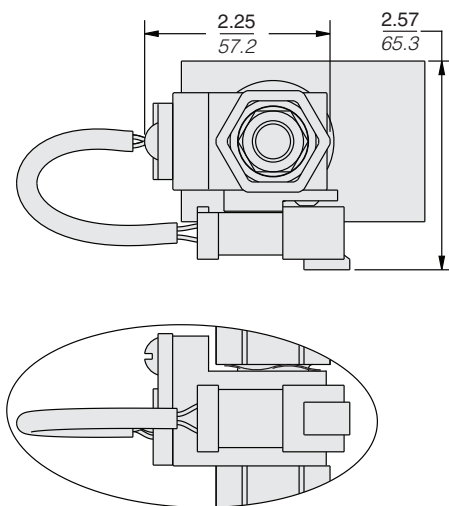
TYPICAL DIMENSIONS for 16 Size Valves with Sensor



SV16-P22AM

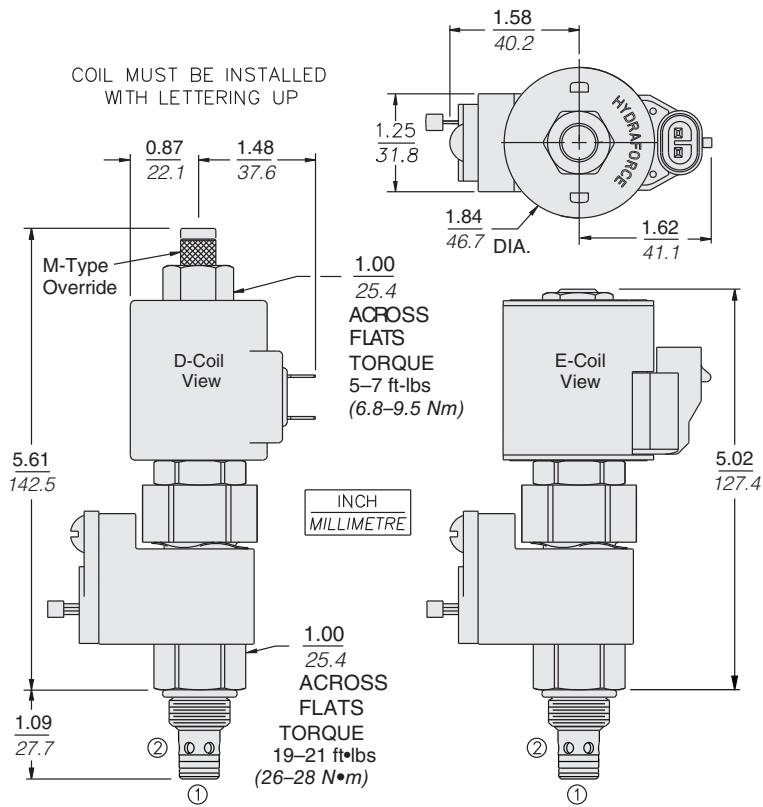
See catalog page 1.046.1 for more info. including complete ordering info.

SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION



Valve Sensor Options

TYPICAL DIMENSIONS for 58 Size Valves with Sensor



SV58-P20A

See catalog page 1.025.1 for more info. including complete ordering info.

SENSOR ASSEMBLY TO SENSOR HOUSING CONNECTION

