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**Казахстан** +7(7172)727-132

**Киргизия** +996(312)96-26-47

сайт: [www.honeywell.nt-rt.ru](http://www.honeywell.nt-rt.ru) || эл. почта: [hwn@nt-rt.ru](mailto:hwn@nt-rt.ru)

## ДАТЧИКИ ДАВЛЕНИЯ

Технические характеристики

на STFW724, STFW828



# SmartLine Wireless Flange Mounted Pressure Transmitter Specification

## 34-SW-03-04

### Series 800 model:

STFW828      0 to 400 in H<sub>2</sub>O    0 to 1,000 mbar

### Series 700 Model:

STFW724      0 to 400 in H<sub>2</sub>O    0 to 1,000 mbar

### Introduction

SmartLine Wireless Pressure continues the evolution of Honeywell's wireless transmitter product offering and provides the latest critical advancements to support industrial automation users' desire to expand wireless use for monitoring and control.

With over 14 years of industrial wireless experience, the SmartLine Wireless Pressure builds upon and is compatible with the current XYR 6000 product portfolio.

Similar to the XYR 6000 wireless transmitter, the SmartLine Wireless product line is part of the Honeywell OneWireless™ system and is ISA100 - ready.

SmartLine Wireless Pressure transmitters also leverage SmartLine technology in the incorporation of the enhanced SmartLine Pressure meter body. By utilizing the same meter body as in the non-wireless pressure product offering, you get best-in-class performance, reduction in spares inventory, and a lessening of the maintenance learning curve.

The SmartLine Wireless Pressure transmitter enables customers to obtain data and create information from remote and hazardous measurement locations without the need to run wires, where running wire is cost prohibitive and/or the measurement is in a hazardous location. Without wires, transmitters can be installed and operational in minutes, quickly providing information back to your system.



**Figure 1 — SmartLine Wireless Flange Mounted Pressure Transmitter**

The previous generation transmitters primarily were applied to monitoring applications but experienced users know that Honeywell's wireless products are as reliable, secure, and safe as their wired counterparts. With this knowledge, users are now looking for wireless transmitters for use in specific control applications.

SmartLine Wireless introduces a step change in performance and most notably, performance suitable for control. SmartLine Wireless performance is improved in these ways:

- Fast ½ second publication rate
- Built-in additional noise reduction
- More powerful 4 dBi integral antenna
- Good battery life performance even at ½ second publication rate.

SmartLine Wireless Pressure retains the following desirable features from the XYR 6000 product offering:

- Mesh or non-mesh configuration within each transmitter
- Generic, off-the-shelf lithium ion battery.
- Two “D” size batteries for longer life.
- Choice of over-the-air or local provisioning (network security join key)
- Over-the-air firmware upgrade capability
- Unique, encrypted provisioning key delivered from the factory
- Remote and integral antenna options
- 24 VDC power option
- Publication rates of 1, 5, 10, or 30 seconds, plus new selections for ½ sec, and 1, 15, 30, 60 minutes
- Transmitter range (integral antenna) of 1150’ (350 m) under ideal conditions.

The STFW800 and STFW700 series transmitters are high performance flange mounted level transmitters featuring piezoresistive sensor technology. These transmitters may be directly mounted onto a tank flange and are offered with a variety of tank connections including various flush and extended diaphragm configurations. STFW800 offers highest accuracy and stability while the STFW700 offers the best performance value. Both are applicable over a wide range of level applications.

**Span & Range Limits:**

Model	URL “H <sub>2</sub> O (mbar)	LRL “H <sub>2</sub> O (mbar)	Max Span “H <sub>2</sub> O (mbar)	Min Span “H <sub>2</sub> O (mbar)
STFW828	400 (1000)	-400 (-1000)	400 (1000)	4.0 (10.0)
STFW724	400 (1000)	-400 (-1000)	400 (1000)	4.0 (10.0)

**SmartLine Wireless Features**

**Local and over-the-air provisioning capability.** All Honeywell wireless devices feature a secure method to join the local wireless network, also known as provisioning. SmartLine Wireless transmitters feature two methods to provision a transmitter onto the network which are either by using a handheld device to locally communicate through the IR interface or remotely using the over-the-air function. The over-the-air function is managed by the OneWireless gateway, Wireless Device Manager (WDM). In either method, the communication of secure, unique provisioning keys is one of the main factors to prevent against unintended access. Honeywell’s security keys are unique for each device from the factory, never made visible, always encrypted, and uniquely generated from the gateway that manages the deployed network.

**Over-the-air firmware updates.** Once joined as a member of your OneWireless network, the WDM can download new transmitter firmware releases to each SmartLine Wireless transmitter over the wireless network. Locating and accessing the transmitter locally is not required thus saving time and keeping your personnel in safe environments.

**Mesh and non-mesh capability.** All SmartLine Wireless transmitters can be configured to operate in either a mesh network or a star (non-mesh) network. The configuration is specific to each wireless transmitter and thus the network can consist of a mixture of meshing and non-meshing devices. Non-meshing is desirable for deterministic communications which is preferred for control.

**Transmission power setting.** To comply with local and regional requirements, SmartLine Wireless transmitters are set at the factory to the maximum transmission power setting allowed for the country of use.

**Non-proprietary battery.** Sourcing lithium thionyl chloride batteries is much simpler since SmartLine Wireless utilizes commercial off-the-shelf batteries. Please see the list of approved battery manufacturers later in this specification. Batteries are housed in an IS-approved battery compartment making battery changes safe and easy.

**Backward compatibility.** SmartLine Wireless transmitters can join existing OneWireless networks and interoperate with existing XYR 6000 wireless transmitters or other ISA100 Wireless compliant transmitters or networks.

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## OneWireless Network Features

The core of the Honeywell wireless solution is the OneWireless Network which consists a gateway, access point(s), and field routers.

The Wireless Device Manager (WDM) serves as the gateway function and in this role, manages the communication from the wireless field devices to the process control application. Typically, the WDM connects logically to the process control network (Level 2 or wireless DMZ). As the wireless network manager, the WDM provides easy access to the entire wireless network through a browser-based user interface. The Honeywell WDM can manage devices communicating over the ISA100 Wireless protocol and the Wireless HART™ protocol.

The ability to deploy redundant WDMs improves the reliability ensuring no loss of process data which is a requirement for control applications.

The Field Device Access Point (FDAP) serves in two roles in the OneWireless network infrastructure, which are: 1) access point, and 2) field router. As an access point, the FDAP directly connects to the WDM via Ethernet LAN cable. More than one access point is permitted and, when more than one is present, it ensures dual path for communications into the WDM from the field devices. As a field router, the FDAP located in the field would communicate to the FDAP acting as an access point. Using the FDAP as a router is more efficient than using field devices as routers since FDAPs are line powered devices whereas field devices are typically battery powered, and the FDAP offers greater range. The meshing capability of FDAPs allows flexibility in the setup of the wireless network to fit the requirements for wireless network performance, in terms of reliable communications, performance, and future growth.

The choice of non-meshing network may be desirable for decreased communication latency which a FDAP serving as a field router helps ensures.

## Wireless Specifications

Parameter	Description
<b>Wireless Communication</b>	2,400 to 2,483.5 MHz (2.4 GHz) Industrial, Scientific and Medical (ISM) band DSSS - Direct Sequential Spread Spectrum per FCC 15.247 / IEEE 802.15.4 2006 Every data packet transmitted in either direction is verified (CRC check) and acknowledged by the receiving device. USA – FCC Certified Canada – IC Certified European Union – Radio Equipment Directive compliant
<b>DSSS RF Transmitter Power</b>	NA Selection –100 mW (20.0 dBm) maximum EIRP including antenna for USA and Canadian locations. EU Selection – 63 mW (18.0 dBm) maximum EIRP including antenna per RTTE/ETSI for EU locations. Compliant to ETSI EN 300 328 wireless standard
<b>Data</b>	PV Publish Cycle Time: Configurable as 0.5, 1, 5, 10, 30 seconds, plus 1, 15, 30, 60 minutes Rate: 250 Kbps
<b>Antennas</b>	Integral – 4 dBi omnidirectional monopole (default selection) Remote – 8 dBi omnidirectional monopole with up to two 10 m cables and lightning surge arrester Remote – 14 dBi directional parabolic with up to two 10 m cables and lightning surge arrester.
<b>Signal Range</b>	Nominal 350 m (1150 feet) between Field Transmitter and Infrastructure Unit (FDAP) when using 4 dBi Integral antenna with a clear line of sight*

\*Actual range will vary depending on antennas, cables and site topography.

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## Specifications

### Operating Conditions – All Models

Parameter	Reference Condition (at zero static)		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature <sup>1,4</sup>	25 ±1	77 ±2	-40 to 85	-40 to 185	-40 to 85	-40 to 185	-55 to 120	-67 to 248
Ambient Temperature LCD Display visible range	25 ±1	77 ±2	-40 to 85	-40 to 185				
Meter Body Temperature <sup>2</sup>	25 ±1	77 ±2	-40 to 110 <sup>1</sup>	-40 to 230 <sup>1</sup>	-40 to 125	-40 to 257	-55 to 120	-67 to 248
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Minimum Pressure mmHg absolute in H <sub>2</sub> O absolute	Atmospheric Atmospheric		25 13		2 (short term <sup>3</sup> ) 1 (short term <sup>3</sup> )			
Vibration	Maximum of 4g over 15 to 200Hz.							
Shock	Maximum of 40g.							
Power	<p>Commercially available, non-proprietary 3.6V Lithium thionyl chloride (LiSOCl<sub>2</sub>) batteries, non-rechargeable, size D.            Battery pack-only option is available.            Approved list of the manufacturer models:</p> <ol style="list-style-type: none"> <li>1. Xeno Energy XL-205F</li> <li>2. Eagle Picher PT-2300H</li> <li>3. Tadiran TL-5930/s</li> </ol> <p>24 VDC power option.            For Non I.S. application: 16 to 28 VDC Input range, max input current 100mA.            For I.S. application: Barrier in accordance with the control drawing required, Entity parameters 30V, 120mA, 0.9W</p>							

<sup>1</sup> NEOBEE M-20 minimum temperature is -15°C (5°F). NEOBEE is a registered trademark of Stepan Company.

<sup>2</sup> For CTFE fill fluid, the maximum temperature rating is 150°C (300°F).

<sup>3</sup> Short term equals 2 hours at 70°C (158°F)

<sup>4</sup> The Ambient Limits shown are for Ordinary Non-Hazardous locations only. Refer to the Hazardous Locations Approvals section for the Ambient Limits when installed in Hazardous Locations.

## Maximum Allowable Working Pressure (MAWP) <sup>6, 7</sup>

(STWX800 and STWX700 products are rated to Maximum Allowable Working Pressure. MAWP depends on Approval Agency and transmitter materials of construction.)

<b>STFW828</b>	<b>Flange Material</b>	<b>Ambient Temperature -29 to 38°C [-20 to 100°F]</b>	<b>Max Meterbody Temperature 125°C [257°F]</b>	<b>Process Interface Temperature 175°C [350°F]</b>
ANSI Class 150 <b>psi [ bar]</b>	304 S.S. 316 S.S.	275 [19.0] 275 [19.0]	218 [15.0] 225 [15.5]	198 [13.7] 205 [14.1]
ANSI Class 300 <b>psi [ bar]</b>	304 S.S. 316 S.S.	720 [49.6] 720 [49.6]	570 [39.3] 590 [40.7]	518 [35.7] 538 [37.1]
DN PN40 <b>psi [ bar]</b>	304 S.S. 316 S.S.	534 [36.8] <sup>5</sup> 534 [36.8] <sup>5</sup>	419 [28.9] 434 [29.9]	385 [26.5] 399 [27.5]

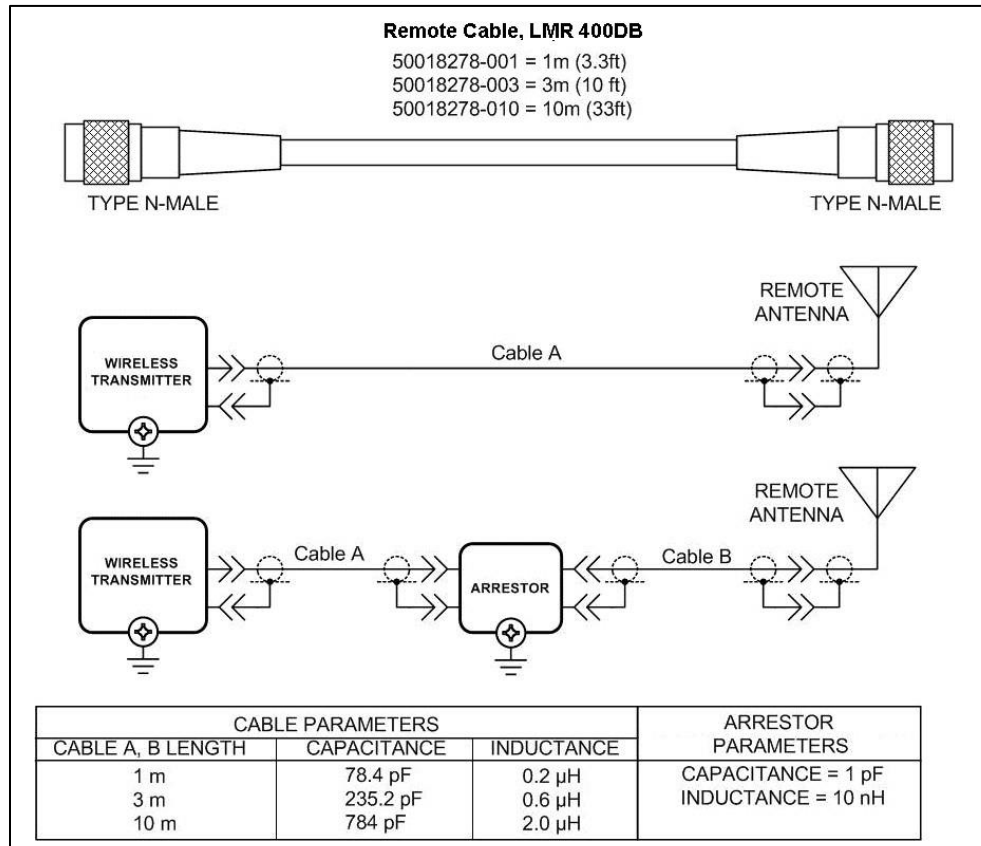
<b>STFW724</b>	<b>Flange Material</b>	<b>Ambient Temperature -29 to 38°C [-20 to 100°F]</b>	<b>Max Meterbody Temperature 125°C [257°F]</b>	<b>Process Interface Temperature 175°C [350°F]</b>
ANSI Class 150 <b>psi [ bar]</b>	304 S.S. 316 S.S.	275 [19.0] 275 [19.0]	218 [15.0] 225 [15.5]	198 [13.7] 205 [14.1]
ANSI Class 300 <b>psi [ bar]</b>	304 S.S. 316 S.S.	720 [49.6] 720 [49.6]	570 [39.3] 590 [40.7]	518 [35.7] 538 [37.1]
DN PN40 <b>psi [ bar]</b>	304 S.S. 316 S.S.	534 [36.8] <sup>5</sup> 534 [36.8] <sup>5</sup>	419 [28.9] 434 [29.9]	385 [26.5] 399 [27.5]

<sup>5</sup> Ambient Temperature for DN PN40 is -10 to 50°C [14 to 122 F]

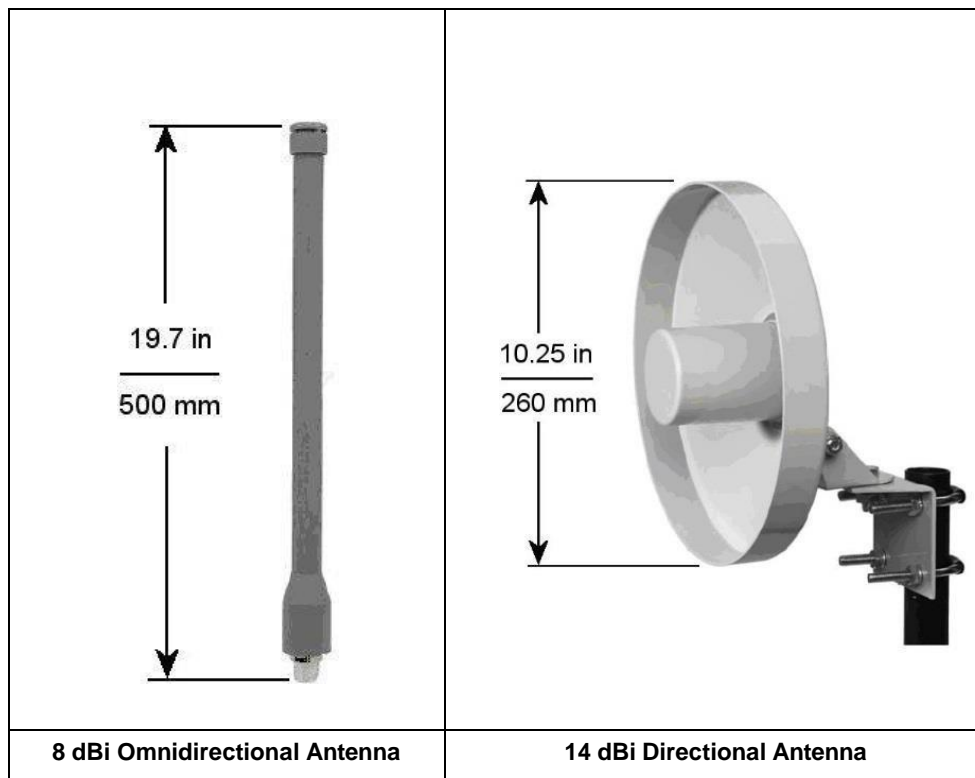
<sup>6</sup> MAWP applies for temperature range -40 to 125°C. However, Static Pressure Limit is de-rated to 3,000 psi from -26°C to -40°C. Use of graphite o-rings de-rates transmitter to 3,625 psi. Use of adaptor with graphite o-rings de-rates transmitter to 3,000 psi.

<sup>7</sup> Consult factory for MAWP of ST 800 and ST 700 transmitters with CSA approval.

## Remote Antenna Cables



## Remote Antennas



## Mounting and Dimensions

Reference Dimensions:  $\frac{\text{millimeters}}{\text{inches}}$

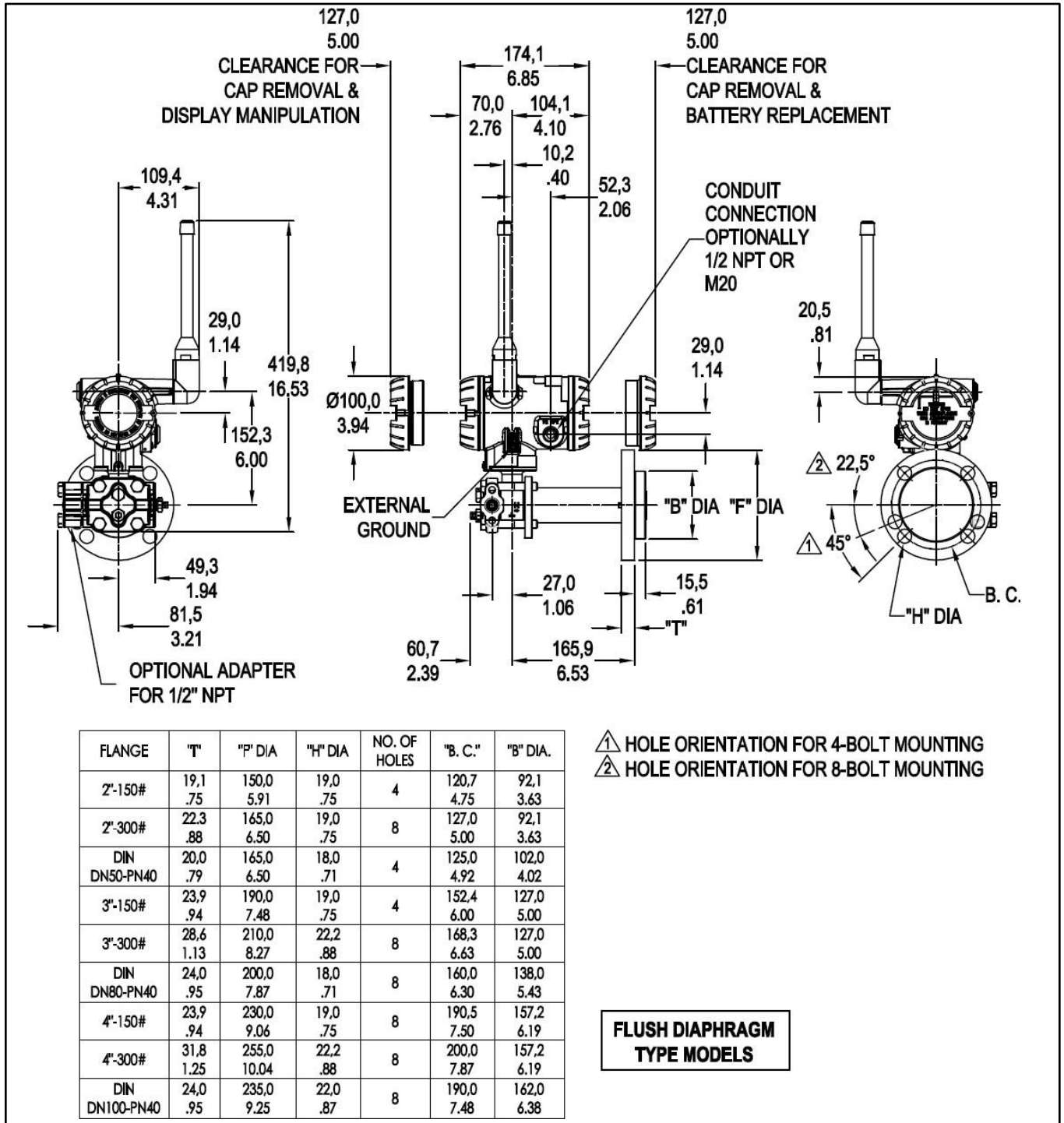


Figure 3 – Typical mounting dimensions for flush diaphragm type models STFW828 and STFW724



Reference Dimensions:    millimeters  
                                 inches

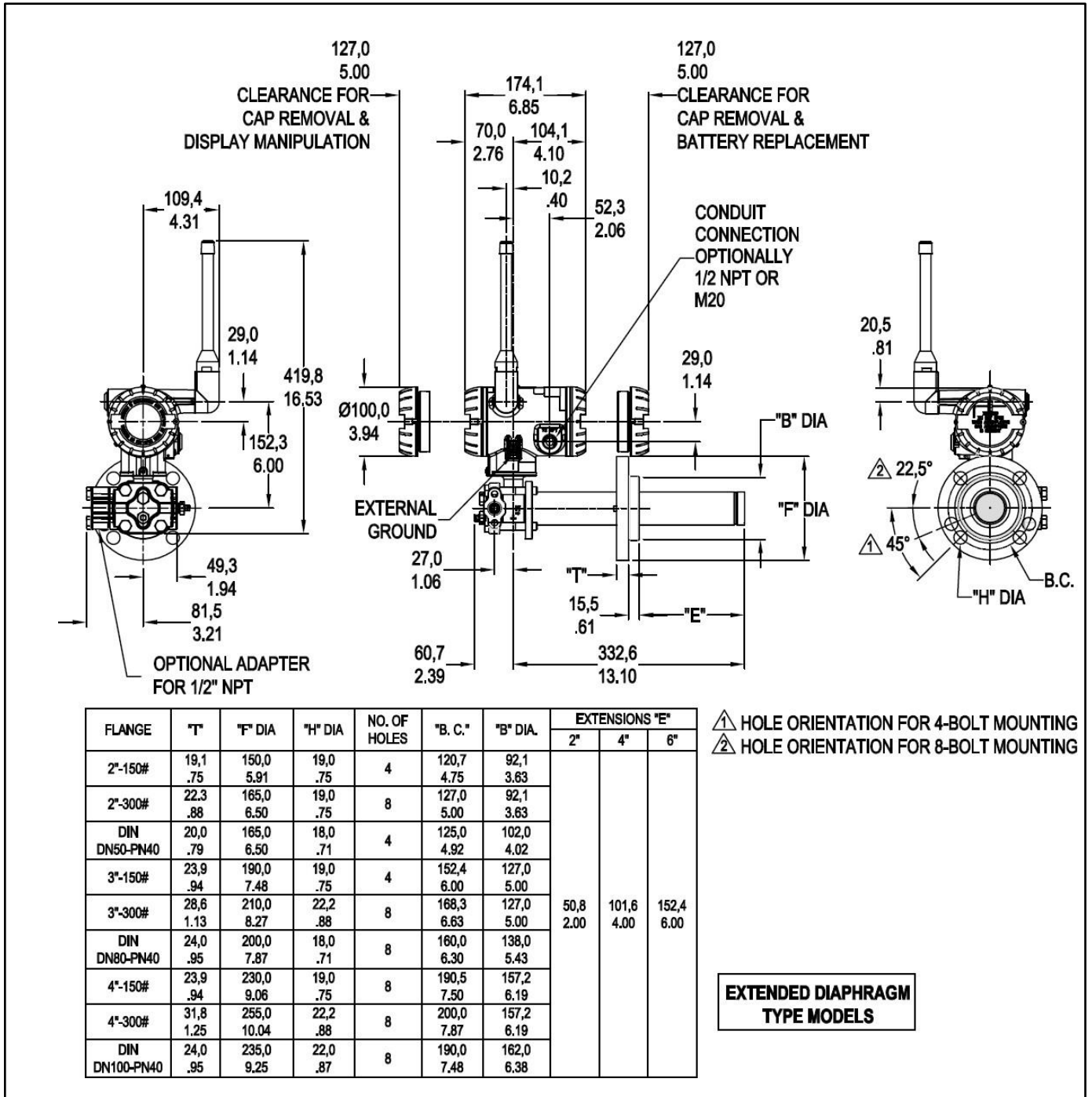


Figure 4 — Typical mounting dimensions for extended diaphragm type models STFW828 and STFW724

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