

Pressure Transmitter

MODEL 970



SMART. RANGEABLE. RUGGED.

If Rig Real Estate is an issue, then the Model 970 is a great solution. Small sized, this rugged transducer is perfect for Offshore Oil Rigs, where space is valuable.

HART COMMUNICATIONS

HART communications allow simpler systems commissioning at start up. Digital compensation, done at Viatran to each Model 970, provides excellent accuracy and enhanced rangeability.

REMOTE CALIBRATION

The HART communication system allows for simultaneous analog and digital communication. This means the Model 970 is fully compatible with existing analog sys-

tems while still offering the benefits of digital/remote calibration and communications. Communicating with the 970 can be accomplished with a handheld device or using a PC and available software.

OPTIONAL APPROVALS

The Model 970 is all welded stainless steel which makes it perfect for corrosive environments. It can also have FM, CSA and ATEX hazardous location markings.

MODIFICATION FOR YOUR NEEDS

We can easily modify the Model 970 (and have) for your unique pressure application. Give us a call. You'll find that this pressure transducer is an excellent long-term solution.

Designed specifically for the OIL industry, the Model 970 Pressure Transducer from Viatran features HART communications in a small but extremely rugged package. The Model 970 can be direct mounted, or used as a submersible unit.

FEATURES

- HART Communication
- Small size and weight
- High Pressures
- Accuracy to 0.1% FSO
- 100 PSI up to 100K PSI

TYPICAL APPLICATIONS

- Offshore Oil Rigs
- Oil Production Platforms
- Natural Gas Pipelines
- Rig Safety Systems

Approval Options Available. Contact Viatran for details.



For product availability, or to order please call 1-800-688-0030, ext 518.

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An ISO 9001:2001 Certified Company

SPECIFICATIONS

PERFORMANCE

| | |
|-------------------------------------|--|
| Full Scale Pressure Range (FSPR) | 0-100 thru 0-100K, PSIA, PSIS |
| Turndown ($\leq 20K$ PSI) | 4:1 with no degradation in static accuracy or thermal effect |
| Static Accuracy | $\leq \pm 0.1\%$ Full Scale Span (combined linearity, hysteresis and repeatability at ambient temperature) |
| 30K-100K PSI | $\leq \pm 0.25\%$ |
| Total Performance ($\leq 20K$ PSI) | $\leq \pm 0.1\%$ span/ $\pm 50^\circ F$ (relative to $75^\circ F$ at 1:1 range) |
| Thermal Effect | over operating range: $\leq 0.35\%$ ($-30^\circ F$ to $185^\circ F$) |
| 30K-100K PSI | $\leq \pm 1\%$ / $100^\circ F$ |
| Full Scale Output (FSO) | 16 mA $\pm 0.1\%$ FSO |
| 30K-100K PSI | 16 mA $\pm 0.5\%$ FSO |
| Dynamic Response Time | ≤ 300 mSec to reach 63% FSO |
| Operating Temperature Range | $-40^\circ F$ to $250^\circ F$ |
| Non-Operating Temperature Range | $-65^\circ F$ to $250^\circ F$ |

ELECTRICAL

| | |
|-------------------------|--|
| Supply Voltage | 11.5 VDC min with 230 Ohm load 30.0 VDC max with 1,100 Ohms |
| Power Supply Regulation | $\pm 0.02\%$ FSO per Volt |
| Output Signal | Two wire 4 to 20 mA. Digital process signal superimposed on a 4-20 mA signal, available to any HART protocol computer system |
| Load Impedance | 230 Ohms to 1,100 Ohms for HART communication |
| Circuit Protection | Reverse polarity protected. |
| Insulation Resistance | ≥ 200 MegOhms between all terminals in parallel and at the transmitter case. |
| RFI/EMI Suppression | Negligible effect to 500 Mhz at 5 watts direct contact. |
| Electrical Connection | 1/2" NPT Male, 3 Wires, 18AWG, 72"L |
| Red | + Signal |
| Black | - Signal |
| Green | Case Ground |

MECHANICAL

Pressure Connection

| | |
|-------------------|---|
| 0-100 thru 0-15K | 1/4" NPT(F) |
| 0-20K thru 0-50K | 1/4" F250-C high pressure tube |
| 0-60K thru 0-100K | 5/16" F312-C high pressure tube |
| Proof Pressure | |
| 0-100 thru 0-15K | 1.5 times or 20K PSI, whichever is less |
| 0-20K thru 0-100K | 1.2 times FSPR |

Burst Pressure

| | |
|---------------|---|
| 0-100 thru 3K | 5 times FSPR |
| 5K | 4 times FSPR |
| 7.5 thru 10K | 2.7 times FSPR |
| 15K | 2.3 times FSPR |
| 20K | 2 times FSPR |
| 25K thru 100K | 1.5 times or 125,000 PSI, whichever is less |

Materials of Construction

Wetted Materials

| | |
|------------------|-------------------------|
| 0-100 thru 0-15K | 15-5PH, stainless steel |
| 0-20 thru 0-100K | 13-8 Mo |

Housing

| | |
|----------------------|-----------------------------|
| 0-100 thru 0-15K PSI | 316, 15-5PH stainless steel |
| 0-20 thru 0-100K PSI | 316 SS and 13-8 Mo |




Shock Limitation

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| Weight | 100 G's |
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| Identification | 24 oz. ± 3 oz. |
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| Mounting | Laser etched into body May be mounted by process piping, electrical conduit, or optional mounting bracket to 2" pipe. |
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CERTIFICATIONS

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|---------------------------------------|--|
| Consult factory for available Options | |
| FM | Intrinsic Safety: Class I, II, III, Division 1, Groups A-G, Class I, Zone 0, AEx ia IIC, T4 at Ta=80°C, T5 at Ta=40°C Entity, Type 4X hazardous locations Explosion Proof: Class I, II, III, Division 1, Groups A-G, AEx d IIC, T5 at Ta=88°C NEMA 4X hazardous locations Nonincendive: Class I,II,III Division 2, Groups A,B,C,D,F,G, Class I, Zone 2, Group IIC, T4 at Ta=80°C T5 at Ta=40°C, Type 4X hazardous locations |
| CSA | Intrinsic Safety: Ex ia IIC; Class I, Zone 0; Class I, II, III, Groups A-G; Type 4, T4 at Ta=80°C, T5 at Ta=40°C Explosion Proof: Ex d IIC; Class 1, Zone 1, Class I, II, III, Groups A-G, Type 4, T5 at Ta=80°C Hazardous Locations. Nonincendive: Ex nA IIC; Class I, Zone 2, Class I, Div 2, Groups A,B,C,D, Class II, Div 2, Groups F, G, Class III, Div 2, T4 at Ta=60°C, Type 4 Enclosures. |
| ATEX | Intrinsic Safety:  II 1 G EEx ia IIC, -20°C T4, Ta $\leq 50^\circ C$ Flameproof:  II 2 G EEx d IIC, T6 (-20°C \leq Ta $\leq 40^\circ C$) Type N:  II 3 G EEx nL IIC T4 (-20°C \leq Ta $\leq 60^\circ C$) |
| CE | EMC Directive 89/336/EEC and Low Voltage Directive 72/23/EEC EN 61010-1 (1993)/ Safety Requirements EN 61326-(2001) - EMC Requirements PED Directive 97/23/EC |

OPTIONS

Codes

| | |
|----|--|
| CL | Extra lead length |
| DF | Bleed port (10K PSI and below) |
| DQ | Oxygen cleaning |
| EA | Special calibration |
| ME | CSA Explosion Proof label |
| NG | ATEX Flameproof label |
| NH | Customer specified information |
| NJ | CE label |
| NK | ATEX Intrinsic Safety/Nonincendive label |
| NX | CSA Intrinsic Safety label |
| NY | FM Explosion Proof/Dust Ignition Proof label |
| NZ | FM Nonincendive label |
| TF | FM Intrinsic Safety label |
| TJ | CSA Div/Zone 2 label |
| TK | ATEX Type N Label |
| YI | 1/8" NPT(F) |
| YM | 1/4" F250-C high pressure tube (standard on 20K-50K ranges) |
| YN | 3/8" NPT(F) |
| YR | 1/2" NPT(F) |
| YS | 3/8" F375-C high pressure tube (0-60K max pressure) For exotic metal options consult factory for media compatibility, pricing and delivery. |
| ZA | G 1/2M conduit connection |
| ZC | Cable gland connection |
| ZU | Direct coupled cable |

Note: Application of some available options may affect standard performance. Consult your Viatran representative for details

ACCESSORIES

Mounting bracket
Polyhead conduit connection box
HART communicator
In-line remote seals

NOTE:
ALL DIMENSIONS ARE NOMINAL, IN INCHES
AND FOR REFERENCE PURPOSES ONLY

