ADVANCED FORCE MEASUREMENT

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INSTALLATION MANUAL

Model 3400 Load Cells

PRODUCT OVERVIEW

NOTE: All information in this document is representative of the Model 3400 series of load cell. If the product you have ordered has special requirements or modifications, refer to the markings on the product label and your purchase order for differences in configuration. Failure to verify product configuration prior to installation may cause permanent damage to the product and void the product warranty. If you have any questions concerning the configuration of your product, please contact an Interface application engineer for assistance.

Retain all instruction manuals, drawings and performance certificates that are included with the product. These documents provide important information on the products operation, calibration, installation and safety precautions as well as repair and re-calibration information. These documents may be updated as changes are made to the product, and should be carefully read when you receive your product.

DESCRIPTION

Interface Model 3400 series load cells are 4-20mA output devices designed for hazardous locations such as oil field service applications. These load cells provide a 4-20mA output signal that is proportional to the force applied to the cell. The sealed housings and choice of mechanical connections make these load cells ideal for use in oil fields.

Interface Model 3400 series load cells are in compliance with the requirements of the Standards EN 60079-0:2009 and EN 60079-11:2007.

GENERAL GUIDELINES

1. All electrical and mechanical connections should be compatible with the model specifications.
2. Installation should only be performed when the electrical supply power is off and when there is no mechanical force applied.
3. It is not recommended that the case or the case ground pin of the unit be connected to the input or output pins. Ground loops and line noise will affect the products performance and can cause internal electrical failure.
4. If shielded cable is used, connect shield only on the indicator end of the cable to prevent ground loops.

HANDLING

Because the weight of this unit may be significant and due to fact that lubricants or moisture may be present on the unit's exterior surfaces, care must be taken in handling to avoid injury or damage to the product.

INSTALLATION REQUIREMENTS

To comply with CE requirements for electromagnetic compatibility, the load cell case must be electrically connected to earth ground either directly or by the ground pin of the connector.

It is recommended that the mating electrical connector be hand tightened only to ensure proper IP 67 protection and to prevent damage to electrical connector assembly.

Tighten mounting screws to the torque specified for the specific model in Interface Installation Information # 15-5 or equivalent. If a jam nut is used in connection to the center thread, torque as specified in # 15-5 or equivalent.

When the unit is not in use, cover the connector with the supplied plastic cap to protect the connector from damage.

For wiring an interconnecting cable to the load cell, the following default connections apply unless altered by special order in which case an alternate connection will be attached:

REC-M-10TPN-04-16 Connector	PTW1H-10-6P Connector	BY04 2L FP D Connector
Pin 1 – No Connect	Pin A -- 4-20 mA Power	Pin F – 4-20 mA Power
Pin 2 – Case Ground	Pin B -- No Connect	Pin E – 4-20 mA return (signal)
Pin 3 – 4-20 mA Return (Signal)	Pin C -- No Connect	Pin B – No Connect
Pin 4 – 4-20 mA Power	Pin D – 4-20 mA Return (Signal)	Pin C – No Conect
	Pin E – Case Ground	
	Pin F -- No Connect	

INTRINSICALLY SAFE INSTALLATIONS

These load cells are 4-20mA loop-powered devices that can be used in potentially explosive environments. They belong to group II, equipment category 2.

The load cells are approved for use in Zone 1, areas in which an explosive atmosphere is likely to occur at times in normal operation (occasional danger up to 1000 hours per year). Explosive atmospheres are gases/vapors/mists including hydrogen, acetylene, and all gases with higher maximum experimental safe gap, and also flammable dust. According to EC-type examination certificate PTB 06 ATEX 2012 the load cells comply with the type of protection “intrinsic safety” Ex ib IIC when connected in an intrinsically safe circuit with the following values:

Ui	Ii	Ci	Pi	Temperature Class/Tamb
28 VDC	110 mA	30 nF	0.65 W	T4/ -40°C≤Tamb≤93°C

Reference Interface drawing W-1683 for information and wiring diagrams relating to installation of Model 3400 load cells in hazardous locations.

The load cells may only be installed and operated by qualified personnel. Qualified personnel are those who are familiar with the installation, commissioning and operation of the load cell as well as the concept of the type of protection and who have the necessary qualification for their job.

The field application is defined in accordance with the information provided by the attached copies of the EC-type examination certificate, the technical data and the safety regulations. Any use of the load cell that exceeds the specifications is not permissible and will not be considered as intended use.

The load cell must have direct conductive contact with the surrounding structure, which, must be connected to the system earth ground. Care must be exercised to prevent ground loops. The connection cable for the load cell must be laid such that it is protected from damage and excess tension.

Restrictions on use due to materials: It must be taken into account that even machined and welded stainless steel can be affected by corrosive substances, especially if they contain chloric salts. In these cases additional protection measures may be required.

MAINTENANCE AND REPAIR

It is recommended that the calibration be verified periodically according to a routine maintenance schedule. If the unit has been subjected to rough usage or shows external damage, immediate calibration verification is recommended.

If failure occurs the unit should be returned to the factory for diagnosis and repair.

For repair or calibration, send load cell to:

Repair Department
Interface, Inc.
7401 E. Butherus Drive
Scottsdale, AZ 85260
USA