GP:50

Transducers & Transmitters

Melt Pressure

WWW.GP50.COM

INSTALLATION MANUAL

Models 130, 131 and Model 135
Models 230, 231 and Model 235

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1 INTRODUCTION

1.1 Product Description

Models 130, 131 and 135 are melt pressure transducers with a ½ -20UNF pressure port fitting (standard - optional ports available), 3mV/V output and measures pressures up to 30,000 psi (2200 bar). Models 230, 231 and 235 has same specifications with output range being 0-5Vdc standard (0-10Vdc available using option code “GS”); refer to appendix A for a complete listing of available outputs.

1.2 Warning

Pressurized vessels and associated equipment are potentially dangerous. The product described in the guide should be operated only by personnel trained in the procedures that will assure safety to themselves, to others, to the equipment, and to the product. Specific warnings are noted as in specific installation/operation sections.

1.3 Unpacking and Inspection

All models covered in this manual are carefully tested, inspected and packed. Upon receipt of the shipment thoroughly inspect the transducer. If you see any visible signs of obvious shipping damage, notify the freight company immediately.

1.4 Using this manual

This manual is intended to help the end user install, maintain, and provide general service of GP:50 Models 130, 131, 135 as well as models 230, 231, and 235 lines of pressure transducers. The user should have a general understanding of current loops & general instrument control. All aforementioned models are precision instruments and should be given the same care as any other precision instrument during installation and operation.

2 INSTALLATION

2.1 Mounting/Process Connection

All melt pressure transducers are shipped with a protective cap. Leave protective cap on until ready to install. Removing protective cap prior to installation can expose threads and diaphragm to unnecessary damage.

Prior to installation or subsequent reinstallations, ensure that the mounting hole is free from media or debris.

Standard Models 130, 131, 135, 230, 231 and 235 transducers are supplied with a ½ -20 UNF pressure port. Installation of the device shall be in accordance with industry standard pipe fitting requirements for this size .Torque shall only be applied to the transducer during installation (or removal) from the wrench flats provided on the pressure port. As a general rule of thumb, the device torque should be “wrench-tight” to preclude leakage from the process connection. Contact GP:50 sales personnel for additional information if required, or for specific installation requirements for non-standard process connections.

Ensure media is compatible with 15-5 PH (standard material, optional materials available, check part number (Appendix A) to verify wetted material to avoid premature corrosion of the diaphragm. This can cause performance degradation and eventual sensor rupture/failure.

Properly tighten process connections before applying pressure to insure no leaks or mechanical failure can occur.

Never insert sharp objects into diaphragm. This could cause permanent damage the sensor and / or mechanical failure/diaphragm rupture.

2.2 Power Supply Connection

For best operation the pressure transducer needs clean, regulated power with an output impedance less than 20 ohms. Voltage range for 130,131 and 135 models is 3.5Vdc – 15Vdc and models 230, 231 and 235 operate between 9Vdc – 40Vdc. As loads are added to the current loop (galvanic barriers, current measuring devices resistors), the minimum excitation voltage must increase in order to maintain proper operating voltage.

2.3 Wiring & Grounding

Wiring is set per Fig. 1 below. PTIH-10-6P electrical connection is standard on all Models. PC02E-12-8P is available as option code "CC." Do not run wires next to power lines, electrical systems, motors, generators, or any other equipment which may generate a significant amount of electrical noise or magnetic fields.

PTIH-10-6P	130, 131 & 135	230, 231 & 235
A/1	+ SIGNAL	+ SIGNAL
B/2	- SIGNAL	- SIGNAL*
C/3	+ EXC.	+ EXC.
D/4	- EXC.	- EXC.*
E/5	CALIBRATE	CALIBRATE
F/6	CALIBRATE	CALIBRATE

PC02E-12-8P	130, 131 & 135	230, 231 & 235
A/1	+ EXC.	+ EXC.
B/2	+ SIGNAL	+ SIGNAL
C/3	- EXC.	- EXC.*
D/4	- SIGNAL	- SIGNAL*
E/5	CAL. (COMMON)	CAL. (COMMON)
F/6	CAL. (INT. RES)	CAL. (INT. RES)
G/7	NC	NC
H/8	CAL. (EXT. RES)	CAL. (EXT. RES)

* - Signal and - Excitation are common to each other.

2.4 Environment

The typical operating temperature range for the electronics is from -40°F (-23°C) to 185°F (85°C). The unit should be mounted as close to the process as possible with the ambient temperature surrounding the electronics in the range as specified above.

Exceeding maximum temperature rating can cause electronics malfunction or failure, with IS units, an explosion risk.

Protect electrical connection from direct/continued exposure to fluids. Moisture ingress can occur and cause eventual electrical failure.

3 OPERATION & MAINTENANCE

These models are designed to produce their respective outputs as a direct proportion to pressure. Specific pressure range, input voltage requirements and electrical connections are marked on unit. Appropriate mating connections are required for proper installation and safety. Other port and electrical connections are available and noted as option code in part number. See Appendix A for list of options.

After securely installed, bring system up to current operating temperature with no pressure applied. Once condition has been reached, adjust zero and span controls accordingly to maximize output accuracy.

* Applicable to models 330, 331 or 335 with GJ option (zero and span adjustments for non-explosion proof) or MD option (zero and span for explosion proof models).

Replace broken fasteners (available through the factory) as they may compromise the seal and cause contamination and/or electronics failure.

Prior to transducer removal, ensure that the polymer is hot and liquid to avoid diaphragm damage. Once removed, immediately wipe the entire tip of the transducer with a soft, non abrasive cloth.

Unit can be hot when removed from service. Wear protective gloves when handling unit in this condition.

Model 135 and 235 include a J-Type thermocouple. To remove simply loosen the Allen Screw with a 6/32 x 1/4 Allen Wrench and pull thermocouple assembly straight out without bending or twisting. If needed, Contact GP:50 for replacement or repair.

4 TROUBLESHOOTING & RETURN INFORMATION

No output
- Verify power supply voltage meets transmitter requirements
- Check wiring connections
- Verify pressure if being applied
- Verify output load is not shorted

Erratic output or zero drift
- Verify pressure applied is constant
- Verify power supply remains within specifications
- Inspect electrical connections for discontinuity or damage
- Verify output with a multi-meter
- Check insulation resistance between amplifier and transmitter case

Slow Response
- Verify pressure port is not clogged

* If the problem persists, please call the factory as indicated below for assistance. Please have the following information ready:

- Serial number
- Model number
- Loop setup details (power supply, resistor, cable routing/length)
- Which action caused devices to fail.

Contact: sales@gp50.com
716-773-9300

Repairs should only be done by GP:50. Repairs done by customer will void any warranties and may cause permanent damage to unit. Repairs done by customer on Intrinsically Safe units will void the approvals and are a potential explosion hazard.

Returned products that have been exposed to hazardous substances should be cleaned prior to return and should include the Material Safety Data Sheet for all substances.

5 WARRANTY

GP:50 warrants its products to the original customer/purchaser against defects in material and workmanship for a period of one (1) year from the date of delivery by GP:50, as shown in its shipping documents, subject to the following terms and conditions:

Without charge GP:50 will repair or replace products found to be defective in materials or workmanship within the warranty period provided that:

1. The product has not been subjected to abuse, neglect, accident, incorrect wiring (not provided GP:50), improper installation or servicing, or use in violation of instructions furnished by GP:50.

2. As to any prior defect in materials or workmanship covered by this warranty, the product has not been repaired or altered by anyone except GP:50 or its authorized service agencies.

3. The serial number has not been removed, defaced or otherwise changed.

4. Examination discloses, in the judgment of GP:50, a defect in materials or workmanship which developed under nor mal installation, use and service.

5. GP:50 is notified in advance of, and approves, the return by issuing a Return Material Authorization Number; and the products are returned to GP:50 transportation prepaid. Products returned with out an RMA number will not be accepted and be returned to sender at sender's expense.

THIS WARRANTY IS THE ONLY WARRANTY AND IS IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS. NO REPRESENTATIVE OR PERSONS ARE AUTHORIZED TO GIVE ANY OTHER WARRANTY OR TO ASSUME FOR GP:50 ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. GP:50 DOES NOT ASSUME THE COSTS OF REMOVAL AND/OR INSTALLATION OF THE PRODUCT OR ANY OTHER WORKMANSHIP, OR WILL GP:50 BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR INSTALLATION OF ITS PRODUCT.

Contact our website http://www. GP50.com for a copy of our repair policy or call our repair dept.

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6 APPENDIX A - OPTIONS

AA None (standard connector PTIH-10-6P)

ALTERNATE CONNECTOR OR CABLE

CC Bendix PC02E-12-8P,[Mate: PC06A-12-8S-(SR), not included]
CD Cannon WK6-32S,[Mate: WK6-21C, not included]
CF 1/2" NPT(M) thread with 36" potted leads
CZ Alternate Connector/ Cable/ Other

ALTERNATE PRESSURE PORTS

FB M18 X 1.5 Metric Thread
FG M14 X 1.5 Metric Thread
FZ Non-Standard Pressure Port

GENERAL OPTIONS

GB Alternate Electronic Output - specify zero and span output values
GJ Add Zero and Span Controls. (Approximately ±20% FSO adjustment)
GP Hastelloy C-276 Diaphragm and Thread
GQ Boron-Hardened diaphragm
GS 0-10 Vdc FSO, Model 2xx only, (Requires 16-32 Vdc excitation)
GV Silicone Oil Fill. (Increases Thermal Shift) Consult factory
GW NaK Fill with Inconel diaphragm and stem for 1000°F max. applications
GX Mineral Oil Fill. (Increases Thermal Shift) Consult factory
GZ Customer Special
JA 100 ohm RTD., 3 - wire, provided with no external cal. & 8 - pin standard connector
JW Titanium Nitride-Coated Diaphragm & Threads
MD Zero and Span Controls, 330X, 331X only. (Span adjustment ± 20% FSO, Zero adjust ment +10% - 80% FSO for ranges below 500 psi, Zero adjustment ±20% FSO for ranges 500 psi & up)
ME Internal Calibration Resister set to 80% ± 0.5% FSO
MO Gentran Wiring
MP Barber-Colman Wiring
NE Second 4-20 mA output for temperature (with HART®)
QF Second 4-20 mA output for temperature (no HART®)
QG Temperature compensated to 350°F
QJ NaK Fill for 750°F max. applications
QS Diamond coating

RIGID STEM

GN 12.5" Rigid Stem
GO 9" Rigid Stem
HD 3" Rigid Stem
HJ 1 3/16" Rigid Stem
HT 24" Rigid Stem
HU 4" Rigid Stem
MU Non-Standard Rigid Stem

FLEX TUBING

GT 30" Armored Capillary Tube
HS 9" Armored Capillary Tube
HV 24" Armored Capillary Tube
HY 12" Armored Capillary Tube
MT Non-standard Armored Capillary Tube (50" max)

*Not all options are available for all models; consult manufacturer for details.