

0–1000 PSI Pressure Transducer and Amplifier

Description

The 0–1000 psi (0–68.9 bar) pressure transducer and amplifier assembly measures the internal hydraulic pressure in a MEG II spray gun manifold and converts it to an electrical output to an iTRAX Spray Monitor. The electrical output is directly proportional to the hydraulic pressure measured by the pressure transducer.

Figure 1 shows the pressure transducer and amplifier assembly. The assembly is a calibrated, matched set. Cable lengths are:

- Armored cable from the amplifier to the transducer is 10-ft (3.05 meter) long.
- Cordset from the amplifier to the spray monitor is 8-ft (243.8 cm) long.

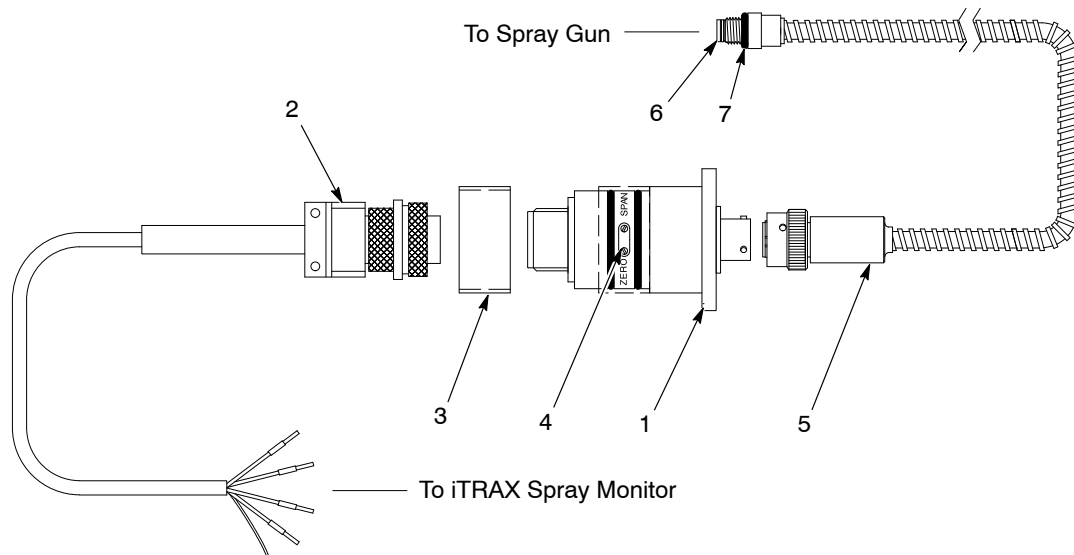


Figure 1 Pressure Transducer and Amplifier Assembly

- | | | |
|-------------------|-------------------------------|------------------------|
| 1. Amplifier | 4. Calibration potentiometers | 6. Pressure transducer |
| 2. Cordset (8 ft) | 5. Armored cable (10 ft) | 7. O-ring |
| 3. Cover sleeve | | |

Note: DO NOT attempt to calibrate this assembly without the proper equipment. Refer to *Calibration* on page 2.

Specifications


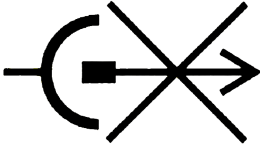
Range:	0–1000 psi (0–68.9 bar)
Nonlinearity:	±1.0% F.S.
Hysteresis:	±1.0% F.S.
Temperature Compensation of Pressure Transducer:	60–160 °F (15–71 °C)
Temperature Effect:	
• Zero	±0 .01% F.S./ °F
• Span	±0.02% RDG./ °F
Material	17-4 stainless steel
Amplifier Operating Voltage:	14–28 Vdc
Amplifier Operating Temperature:	-20–180 °F (-20–82 °C)
Output Voltage:	1–4 Vdc (2.5 mA max) @ 1000 psi with 2.5 Vdc Common Mode Offset

Calibration

The transducer amplifier has adjustment potentiometers for calibration purposes. The assembly is calibrated at the factory and shipped with a calibration certificate. Like all transducers, it should be calibrated periodically, usually once a year if ISO processes are involved.

Calibration of the transducer is recommended annually to insure accurate and reliable operation. Calibration should be performed with precision equipment which has been calibrated to standards traceable to NIST (National Institute of Standards and Technology). Contact your Nordson Container Specialist for more information on calibration services.

See the table below for warnings and symbols in this instruction sheet.

Symbol	Description
	WARNING: Follow all safety instructions in the manual for safe use
	Do not disconnect under load. Turn off all power to the module before connecting or disconnecting any cables from the pressure transducer amplifier to avoid equipment damage.

Installation



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Amplifier Mounting Dimensions

Install the amplifier in an enclosure or panel, using the dimensions in Figure 2 and the 8–32 seal screws installed in the flange for shipment.

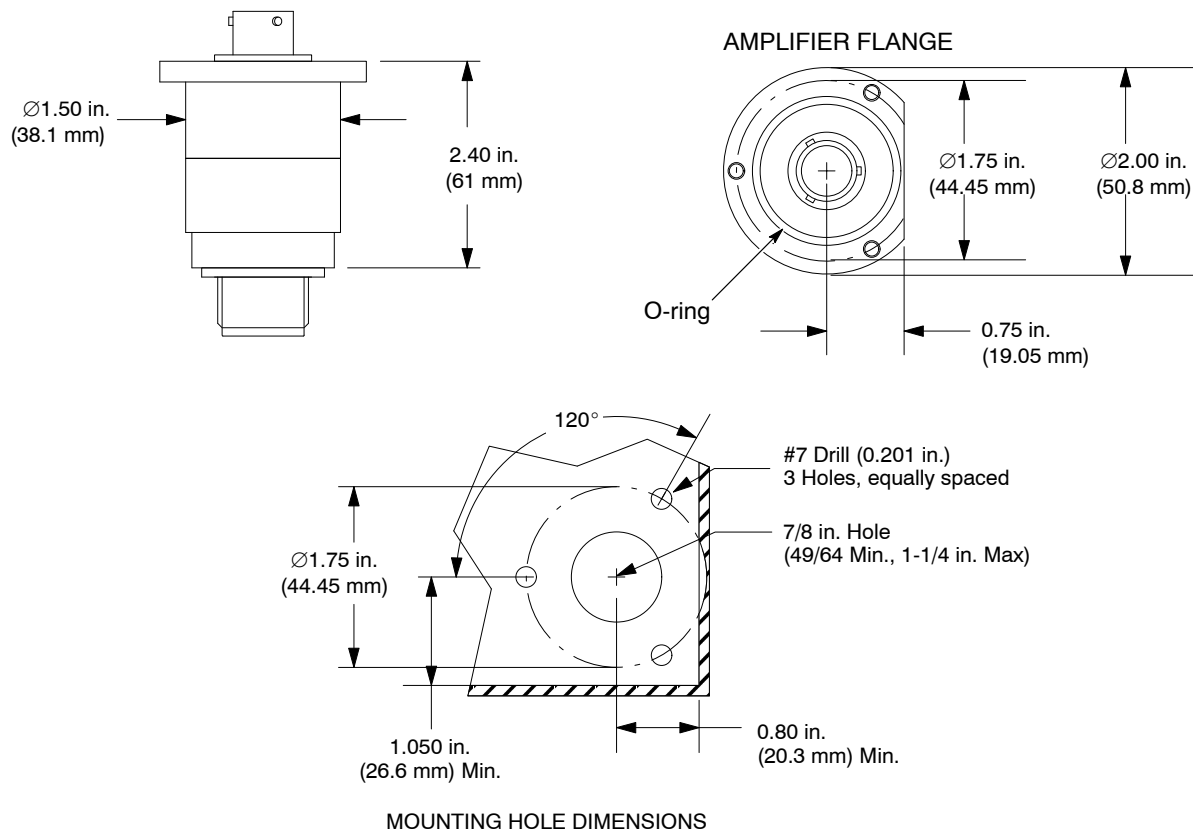


Figure 2 Amplifier Mounting Dimensions

Gun Connections



WARNING: To prevent injury to personnel and damage to equipment, disconnect and lockout power to the system. Relieve fluid and system pressure.



CAUTION: When installing, removing, or tightening the pressure transducer and armored cable assembly, always rotate the pressure transducer and cable assembly together to avoid damage to internal wires.

1. See Figure 3. Make sure the O-ring (2) is installed on the pressure transducer (1).
2. Remove the transducer plug (3) from the spray gun manifold (4)
3. Thread the pressure transducer into the manifold port. Tighten the transducer to 50 in.-lb (5.65 N•m). Do not overtighten.
4. See Figure 1. Connect the pressure transducer and armored cable to the amplifier.
5. Connect the cordset to the amplifier. Route the cordset to the spray monitor.

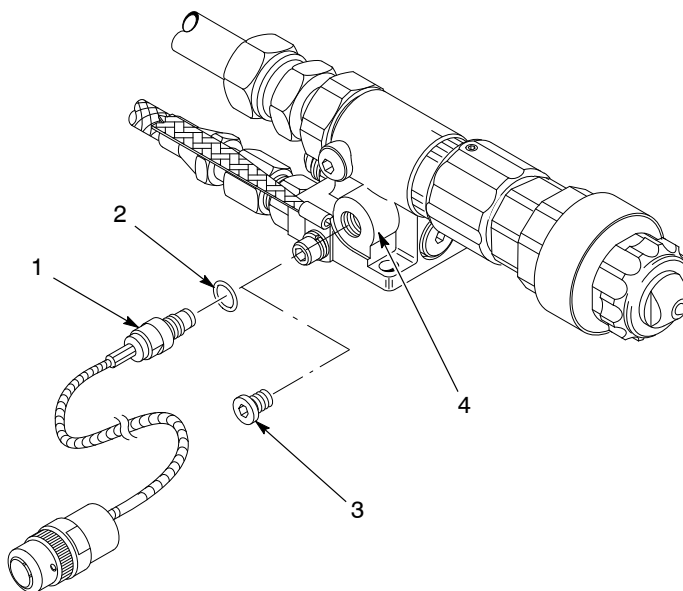


Figure 3 O-Ring Replacement

- | | |
|------------------------|-----------------------|
| 1. Pressure transducer | 3. Plug |
| 2. O-ring | 4. Spray gun manifold |

Spray Monitor Connections

See Figure 4. Connect the cordset wires to these inputs on the spray monitor or CanWorks junction box:

Cordset Wire Color	Spray Monitor Terminal
White	PRESS +
Black	PRESS –
Red	EXC +
Green	EXC –
Silver (shield)	PRESS \perp

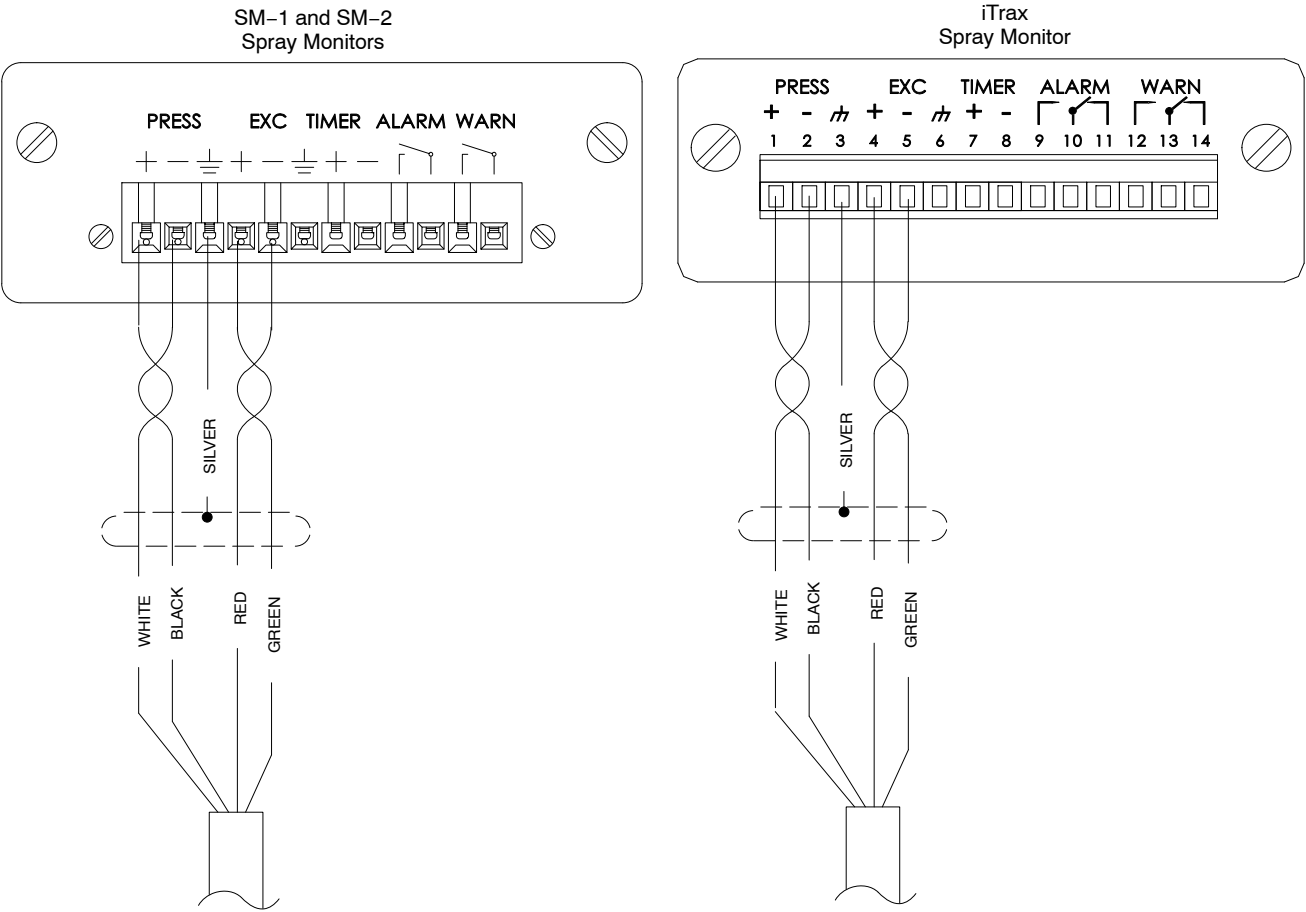


Figure 4 Spray Monitor Connections

Troubleshooting



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Armored Cable Pinouts

To check the transducer function, unplug the armored cable from the amplifier and check for continuity across pins A and D and pins E and F. If you find an open circuit on either pair, the transducer has failed. Since the transducer and amplifier are a calibrated set, you must replace the entire assembly.

Pin	Function
A	EXC +
B	Not Used
C	Not Used
D	EXC -
E	SIG -
F	SIG +

Cordset Pinouts

To check the operation of the amplifier, measure the Vdc across the black and white wires (Pins B and D). If the voltage is less than 0.995 Vdc at 0 psi or more than 4 Vdc, replace the entire assembly.

Pin	Wire Color	Function
A	Red	EXC + (+14 to +28 Vdc)
B	Black	SIG -
C	Green	EXC -
D	White	SIG + (1 to 4 Vdc)

Parts

See Figure 5.

Item	Part	Description	Quantity	Note
1	1602880	TRANSDUCER, 160F, w/intergral amplifier, 0-1000 psi	1	A
2	945020	• O-RING, hot paint, 3/16-in. tube	1	
NS	1034130	• CLAMP, 2 piece, cushioned, transducer	1	

NOTE: A. The transducer and amplifier are calibrated as a matched set and cannot be ordered individually.

NS: Not Shown

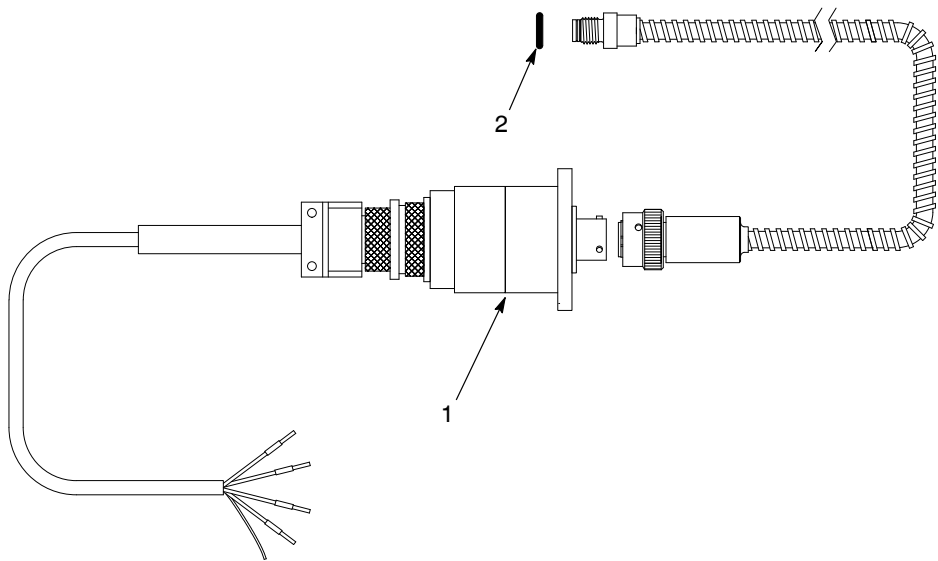


Figure 5 Transducer Assembly Parts

Issued 5/21

Original copyright date 2013. iTRAX, MEG, Nordson, and the Nordson logo are registered trademarks of Nordson Corporation.

All other trademarks are the properties of their respective owners.