	<b>SONARtrac<sup>®</sup> Rework Instruction</b>	
	<b>Subject: Procedure for Adding Foundation Fieldbus or Profibus Capability to a Transmitter</b>	RI00012   Rev: 02
		Page 1 of 10

The following procedures provide the list of tools, materials, and procedures for upgrading part number 20920-01 to 20920-04, adding Foundation Fieldbus or Profibus capabilities.

Carefully read the entire document prior to starting replacement.

If there are any questions or comments please contact CiDRA Customer Support.

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# SONARtrac<sup>®</sup> Rework Instruction

**Subject: Procedure for Adding Foundation Fieldbus or Profibus Capability to a Transmitter**

RI00012

Rev: 02

Page 2 of 10

## Tools Required:

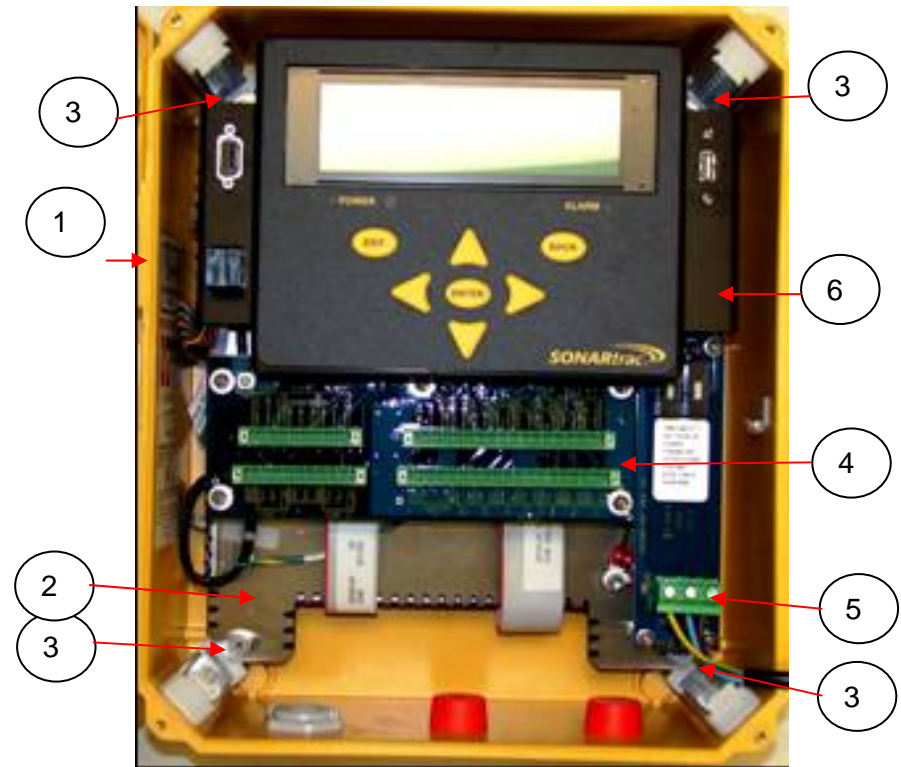
Qty	P/N	Recommended Tools	Qty		
1		Phillips head screwdriver, #2	1		3/16" nut driver
1		Phillips head screwdriver #1	1		3/32" Allen hex wrench
1		Flat long nose pliers	1		ESD Wrist Strap
4	52629-64	Standoff, 1/4 hex,#10-32 thread female, 2" length			
1		1/4" nut driver			

## Materials:

Item No.	Qty	Part No.	Description
1	1	50252-24205	Loctite 242
2	1	20930-02	Foundation Fieldbus and support assembly
3	1	20924-xxxx	Programmed PCB Assembly; - 01PA Foundation Fieldbus; -02PA Profibus
4	4	51065-08	STANDOFF, 3/16 HEX, #4-40 FEM X .50 LG, ALUMINUM
5	4	51921-05	SCREW, SEMS, PAN HD PHILLIPS W/TOOTH WASHER, #4-40 THRD, 5/16" LG
6	4	50121-4	SCREW, SHC,#4-40 UNC-3A x 1/4" LG
7	6	52064-10	SCREW, PAN HD PHILLIPS W/CAPTIVE DUAL-ACTION SPRING WASHER, 6-32 #2 DRIVE, 5/8" LG
8	1	20931-01	CABLE ASSEMBLY, OUTPUT CONNECTIONS, INTERFACE TO MAIN CONTROLLER, W/ RESET TO USB
9	1	20932-01	CABLE ASSEMBLY, OUTPUT CONNECTION, TERMINAL BLOCK TO INTERFACE PCB
10	1	20934-01	CABLE ASSEMBLY, POWER CONNECTION, POWER SUPPLY TO INTERFACE PCB
11	1	20933-01	CABLE ASSEMBLY, POWER CONNECTION INTERFACE TO CONTROLLER AND USB
12	1	52124-04	CLIP, SPLIT ROUTING, 1/4" DIA., NYLON (replace if necessary)
13	3	52124-08	CLIP, SPLIT ROUTING, 1/2" DIA., NYLON (1 required, replace other 2 if necessary)

**Procedure:**

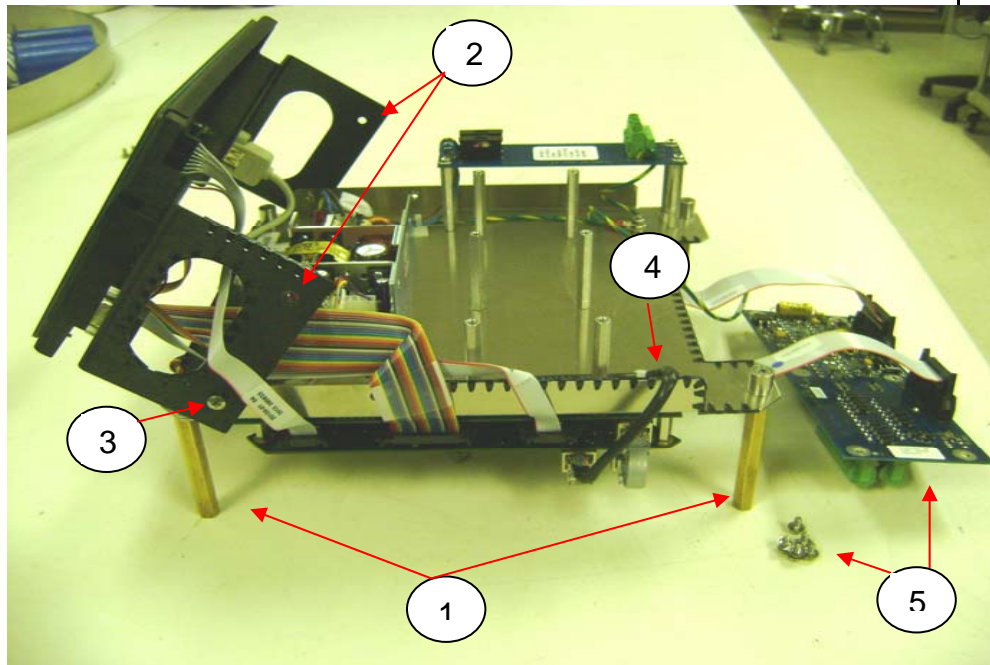
1. Remove power from transmitter in accordance with site specific lockout / tagout procedures.
  2. Open transmitter door.
  3. **Either:**
    - 3.1 Remove power cables and all input / output and ground cables from Connector Terminal Board Assembly (CTBA).
    - 3.2 Move transmitter to work shop.
    - 3.3 Install personnel ESD Wrist Strap.
    - 3.4 Remove 4ea chassis screws. **Note:** screws are captive.
    - 3.5 Remove ground wire from CTBA.
    - 3.6 Remove transmitter chassis from transmitter enclosure.
  - OR,**
  - 3.7 Remove power cables from terminal board.
  - 3.8 Remove input / output cable connector removable terminal blocks from CTBA connectors.
  - 3.9 Remove ground wire from removable terminal block.
  - 3.10 Install personnel ESD Wrist Strap.
  - 3.11 Remove 4ea chassis screws. **Note:** screws are captive.
  - 3.12 Remove transmitter chassis from transmitter enclosure.
  - 3.13 Place chassis in ESD safe bag.
4. Move chassis to work shop.



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|----|--|
| 1. | Transmitter enclosure  |
| 2. | Transmitter chassis  |
| 3. | Chassis screws (4 places)  |
| 4. | Connector Terminal Board Assembly (CTBA) with pluggable connectors (not shown) |
| 5. | Power input  |
| 6. | Display chassis  |

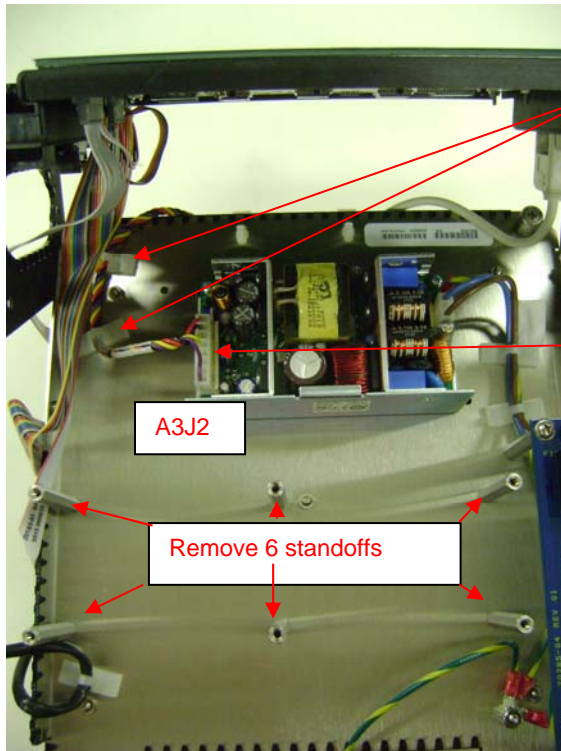
5. Attach the four 2 inch standoffs onto captive chassis corner screws (photo?)
6. Stand chassis on the standoffs
7. Remove the lower display chassis screw on each side of the display chassis.
8. Loosen the upper display chassis screw ½ turn on each side of the display chassis.

9. Tilt the display chassis forward.
10. Remove the Ethernet cable from the coupler on the display chassis.
11. Fully tilt the display chassis forward to allow work access. Then retighten the two upper display chassis screws
12. Remove the 5ea #6-32x5/16" screws from the CTBA; pull board away from standoffs as shown in picture.



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|--|
| <ol style="list-style-type: none"> <li>1. Standoffs (4 places)</li> <li>2. Lower display chassis screw (removed)</li> <li>3. Upper display chassis screw</li> <li>4. Ethernet Cable removed from coupler</li> <li>5. CTBA (5 ea screws removed)</li> </ol> |
|--|

13. Remove the 6 standoffs from the chassis plate
14. Carefully remove the cable from the power supply connector A3J2
15. Remove power supply cable from the USB board A6J1 and from the main board assembly A1J1 connectors
16. Using flat long nose pliers carefully remove the 4 nylon cable guide clips

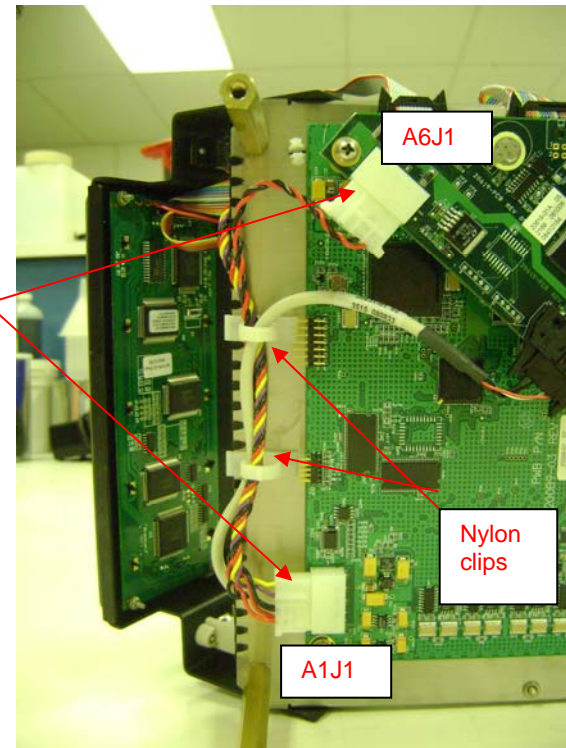


Nylon clips

Remove power Supply Cable

A3J2

Remove 6 standoffs



A6J1

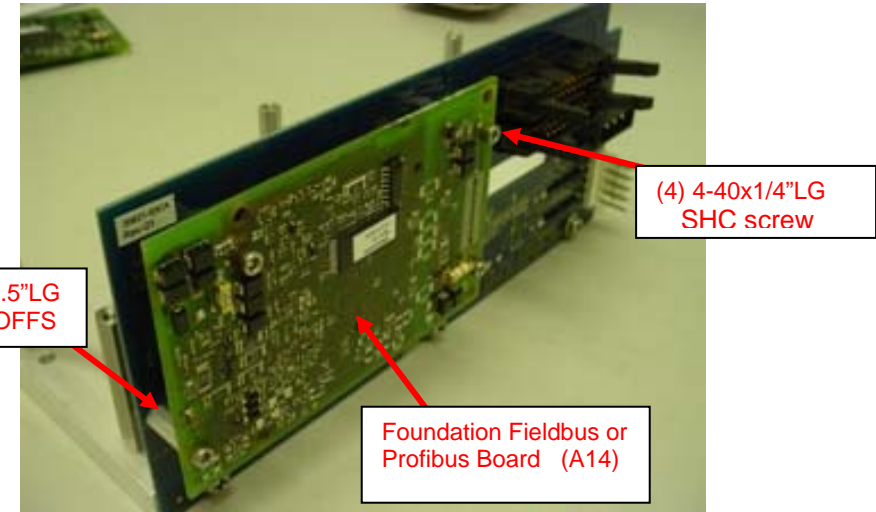
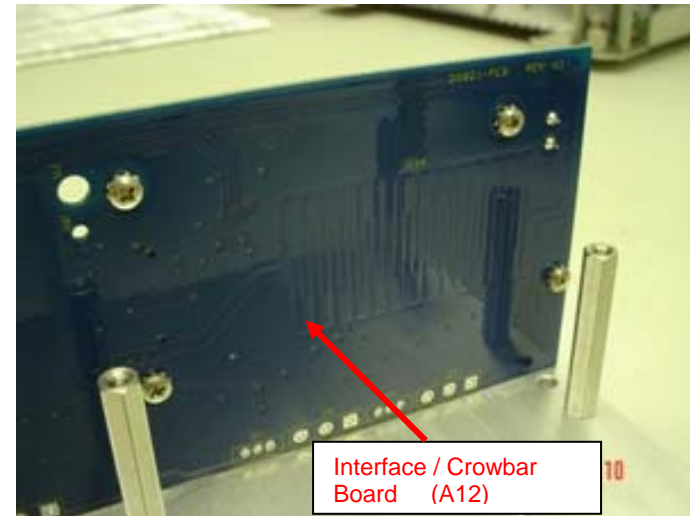
Nylon clips

A1J1

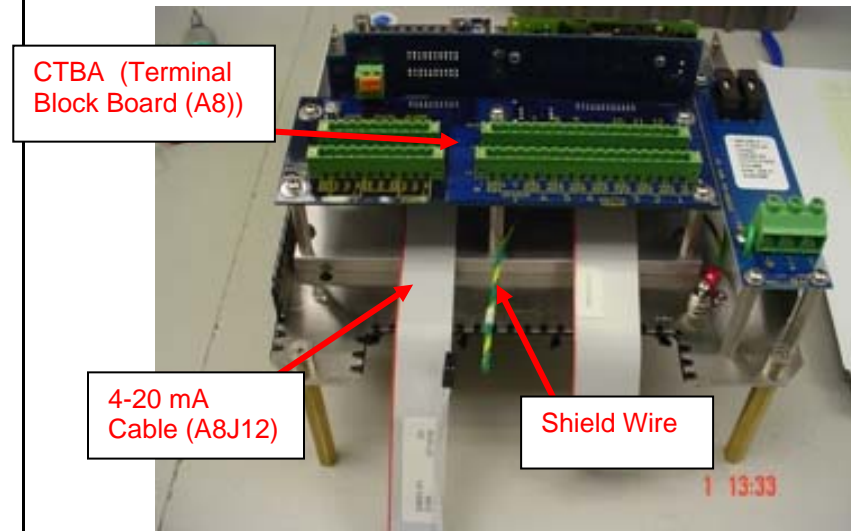
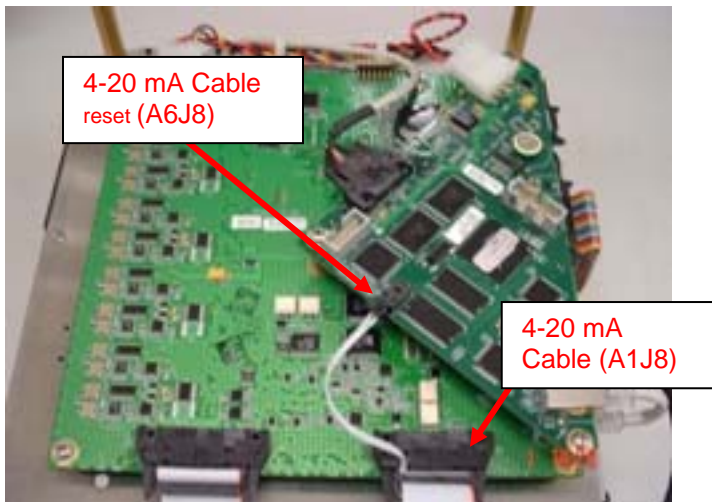
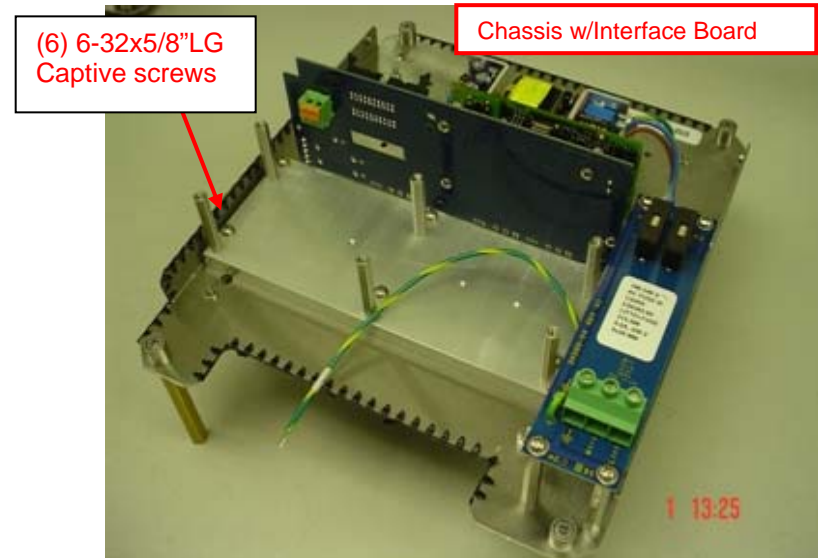
**17. If applicable;**

Install Foundation Fieldbus Bd (A14) onto Interface Bd (A12):

- a. Install (4) 4-40x5/16"LG screws into hole locations shown
- b. Install (4) 4-40x.5LG standoffs to screws above and Torque to 5.0 in/lbs
- c. Install Foundation FB Bd onto Interface / crowbar Bd noting the header pin connections on both sides of boards
- d. Install (4) 4-40x1/4"LG SHC screws as shown:
  - i. Loctite (242) SHC threads
  - ii. Torque to 5.0 in/lbs



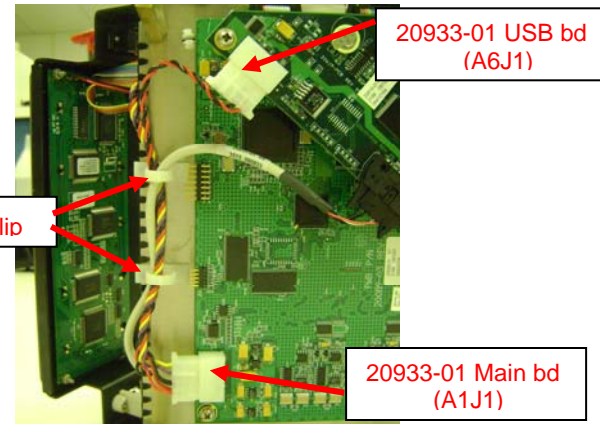
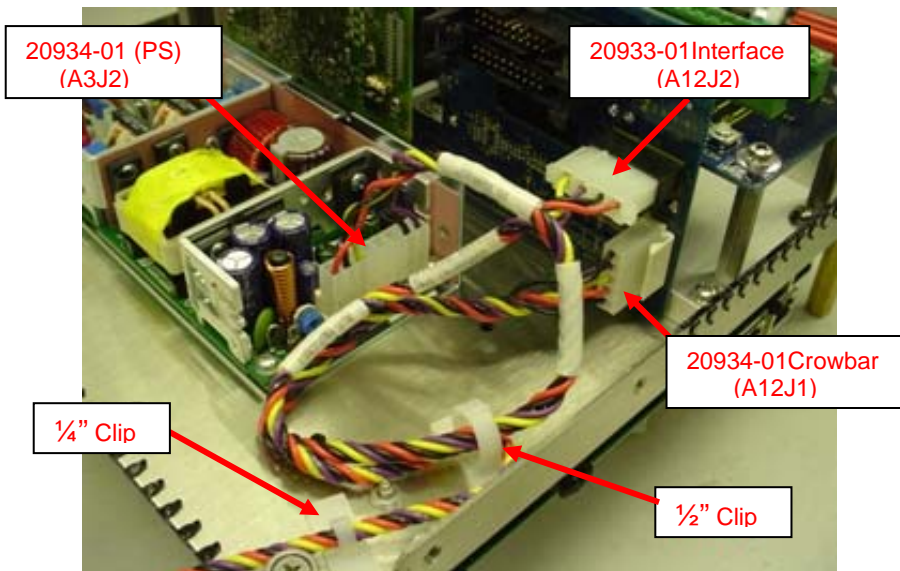
18. Use (6) 6-32x5/8" LG captive screws to attach base plate of Interface Board Assy to chassis.  
Torque to 12.0 in/lbs  
*(keep shield wire and Ethernet cable above base plate)*
19. Remove Ribbon Cable 20162-02 from the Main board A1J8, USB board A6J8 and the CTBA A8J12
20. Connect Ribbon cable 20931-01 from Interface board A12J3 to Main board A1J8 and USB board A6J8
21. Connect Ribbon cable 20932-01 from Interface board A12J4 to CTBA A8J12
22. Install CTBA (A8) onto Interface board standoffs using (5) captive washer screws  
Torque to 12.0 in/lbs  
*(Keep Shield wire above ribbon cables)*



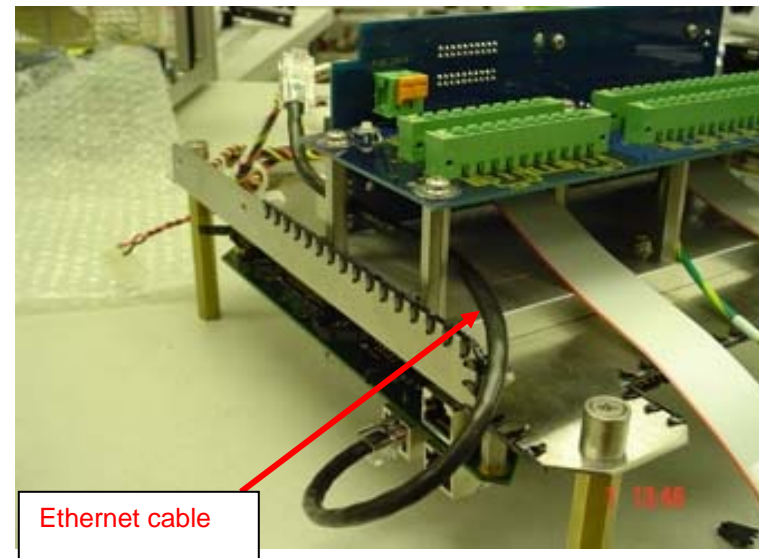
23. Install Following Cable Assemblies for Interface Bd Assy:

- a. 20934-01 P.S A3J2 to Interface board A12J1
- b. 20933-01 Interface board A12J2 to Main bd A1J1 & USB bd A6J1
- c. Use ¼ and ½ " clips to dress wires as shown  
*Replace with new clips if required*

**NOTE:** Route above Cable Assemblies as shown in order to provide a service loop to remove Interface Board



24. Route Ethernet cable as shown





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RI00012

Rev: 02

Page 9 of 10

25. Reposition the Display chassis so that the Ethernet cable can be reconnected to the coupler on the display chassis
26. Fully reposition the display chassis and reinstall the previously removed screws.  
Torque all 4 screws to 18in-lbs
27. Remove the four 2" standoffs from the corner screws of the chassis plate.
28. Reinstall the transmitter chassis assembly into the transmitter enclosure.
29. Reconnect all wires or pluggable connectors to the Connector Terminal Board Assembly
30. Reconnect the shield wire to the CTBA
31. Reconnect power wires to power entry terminal connector
32. Close the enclosure
33. Reapply power



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**Subject: Procedure for Adding Foundation Fieldbus or Profibus Capability to a Transmitter**

RI00012

Rev: 02

Page 10 of 10

## Document Change History

Date	Revision	Changed By	ECO #	Description of Change
30Oct09	01	Griffin	E09-0077	Initial Release
7Apr10	02	Griffin	E10-0028	Standoff PN changed, PN added to Loctite