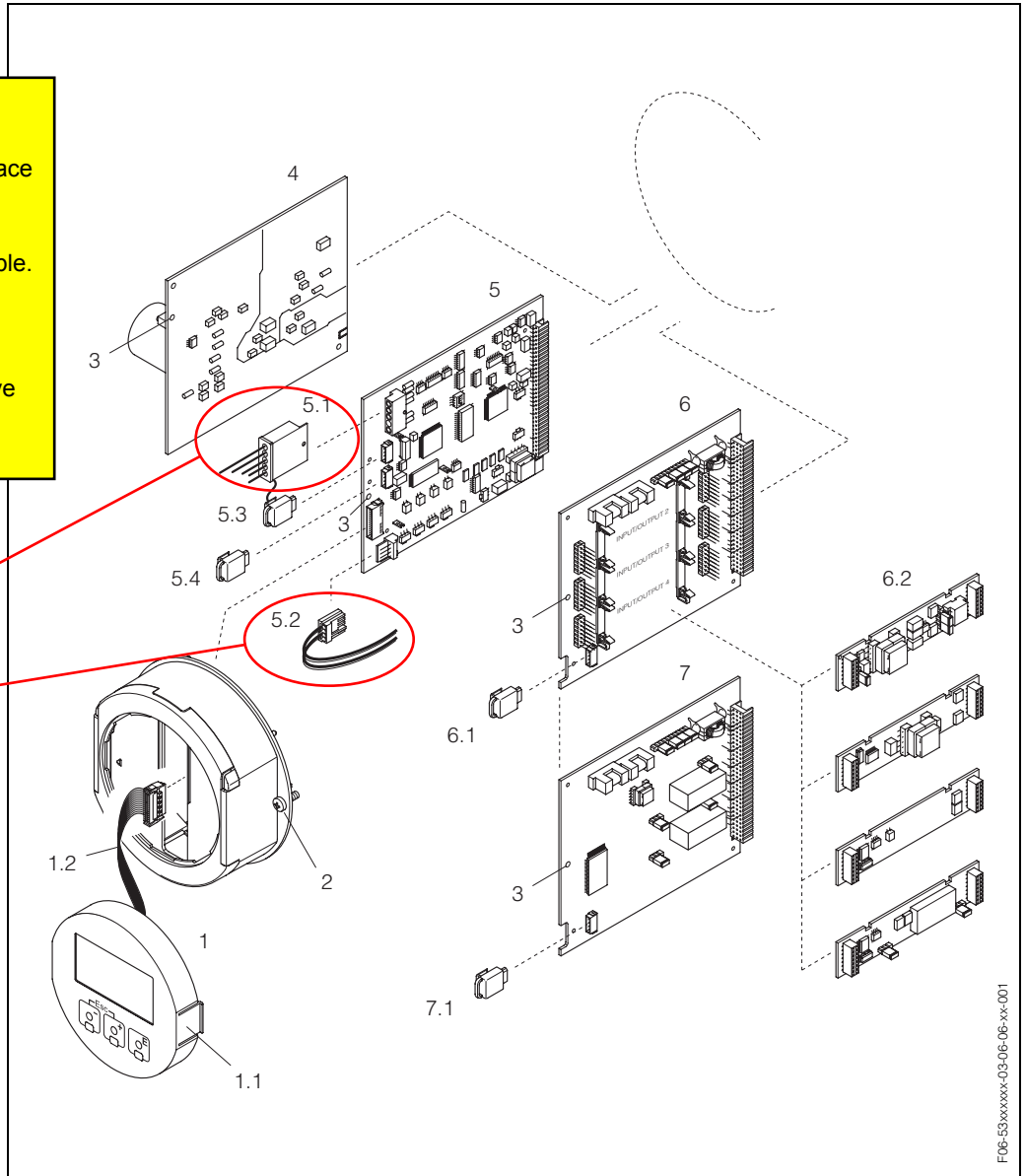


To Perform the resistance checks:
 1) Turn Power off.
 2) Access the electronics through the front face plate. The display holder will need to be removed.
 3) Disconnect item 5.1-Sensor/Electrode cable.
 4) Disconnect item 5.2-Coil Cable.
 5) Perform the resistance check as per next sheet.
 6) When complete reinstall all plugs that have been disconnected.

Sensor/Electrode Cable

Coil Cable

See next sheet for breakdown of connectors and resistance values.



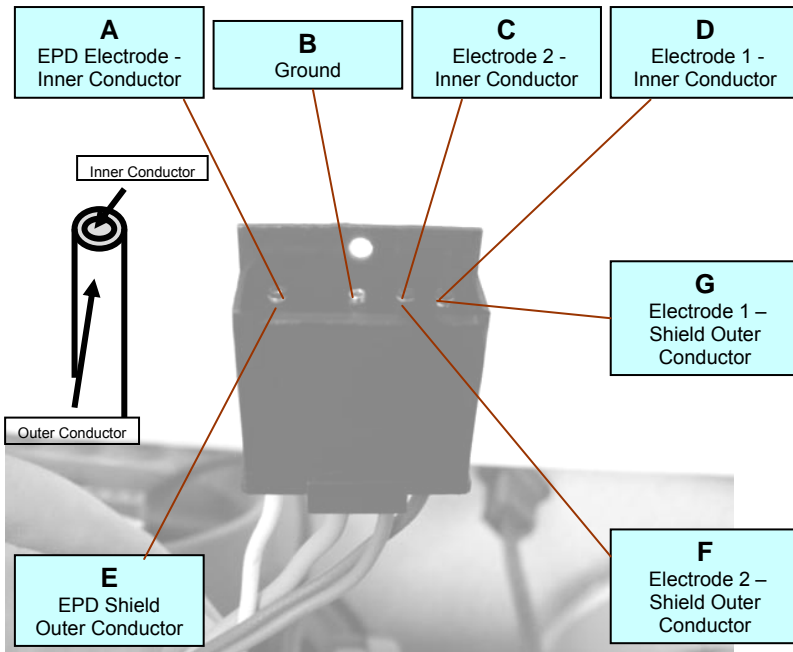
F06-53xxxxx-03-06-06-xx-001

Fig. 57: Field housing: removing and installing printed circuit boards

- 1 Local display
- 1.1 Latch
- 1.2 Ribbon cable (display module)
- 2 Screws of electronics compartment cover
- 3 Aperture for installing/removing boards
- 4 Power unit board
- 5 Amplifier board
- 5.1 Electrode signal cable (sensor)
- 5.2 Coil current cable (sensor)
- 5.3 S-DAT (sensor data memory)
- 5.4 T-DAT (transmitter data memory)
- 6 I/O board (flexible assignment)
- 6.1 F-Chip (function chip for optional software)
- 6.2 Pluggable submodules (status input and current input; current output, frequency output, relay output)
- 7 I/O board (permanent assignment)
- 7.1 F-Chip (function chip for optional software)

Electrode Test Points

Promag 50/53 Sensor Connector



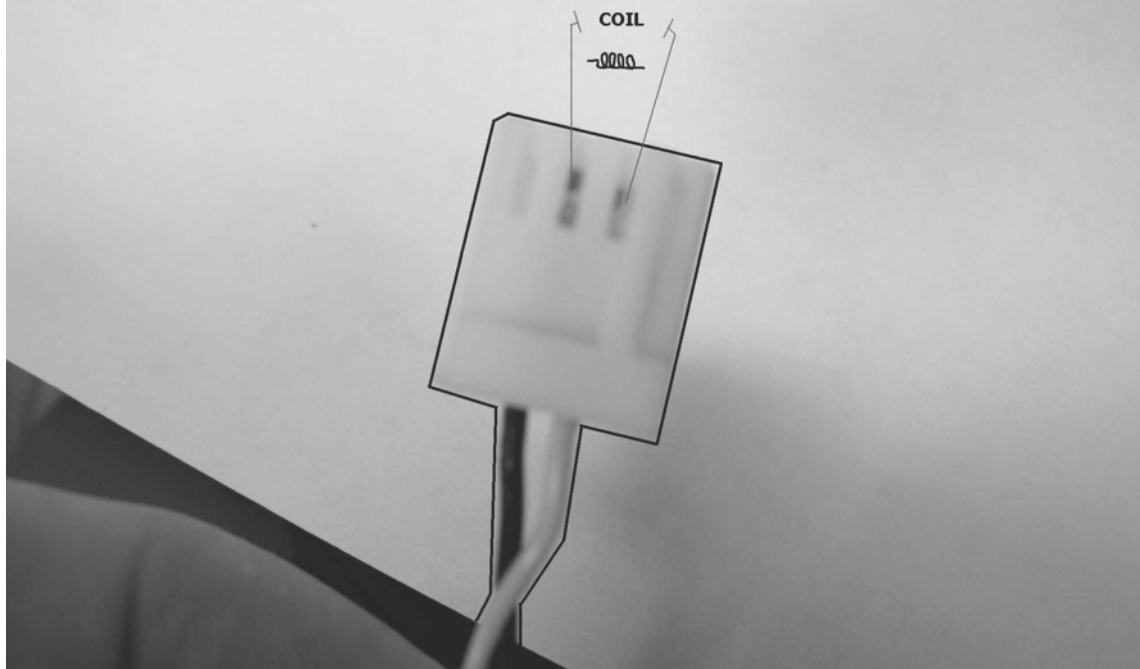
With Meter Filled

- Electrode 1 to ground impedance should be within 20% of electrode 2 to ground
- EPD electrode to ground should be approx. The same as Electrode 1 or 2, but likely a bit higher.
- Measured impedance is a function of fluid conductivity
- Coating inside meter can affect impedance measurement
- Open connection might mean internal damage to meter or bad electrical connection

Coil Test Points

Promag H		Promag WP	
DN 2...25 (1/12"...1")	DN 40...100 (1 1/2"...1")	DN 15...100 (1/2"...4")	DN 125...2000 (5"...78")
74 $\Omega \pm 10\%$	84 $\Omega \pm 10\%$	84 $\Omega \pm 10\%$	140 $\Omega \pm 10\%$

PROMAG 50/53 COIL CONNECTOR



Resistance Check of remote unit.

To check electrodes:

Pipe must be completely full!!!!

- 1) Power unit down.
- 2) Disconnect the wiring at either the electronics or the sensor.
- 3) 41 to 42 should read resistance in the chart below.
- 4) 41 or 42 to ground should read open.
- 5) 5 to ground, 7 to ground, 37 to ground should read within 20% of each other.

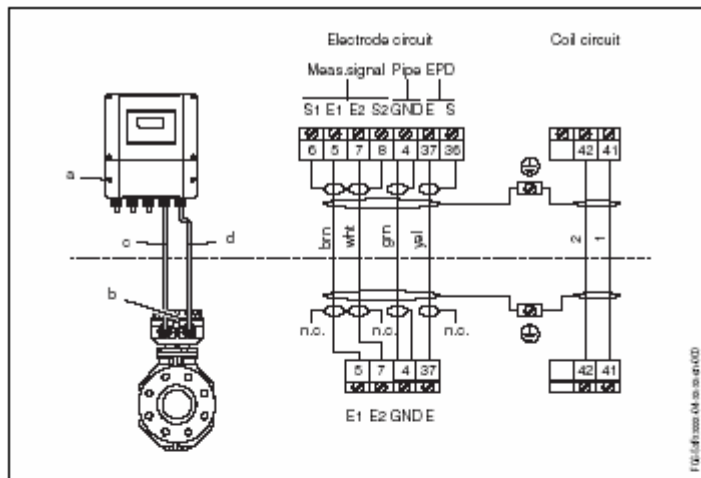


Fig. 29: Connecting the remote version of Promag W/P

a = cover of the connection compartment, b = cover of the sensor connection housing, c = signal cable, d = coil current cable, n.c. = not connected, insulated cable shields

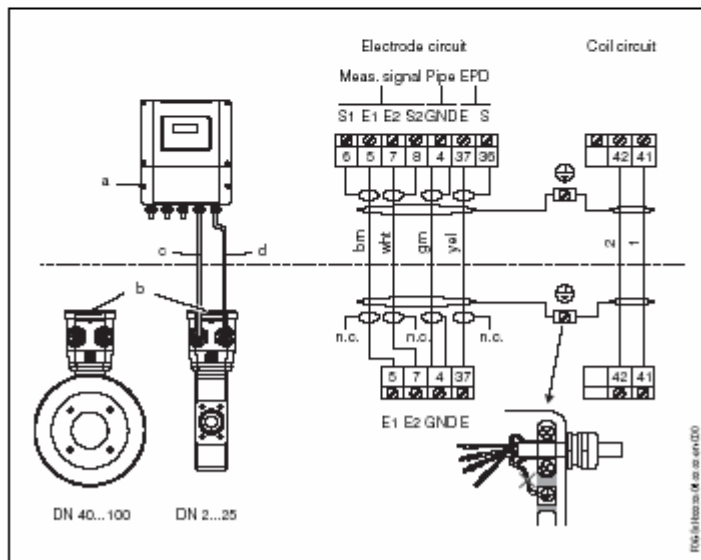


Fig. 30: Connecting the remote version of Promag H

a = cover of the connection compartment, b = cover of the sensor connection housing, c = signal cable, d = coil current cable, n.c. = not connected, insulated cable shields

6. Check the coil resistance

The coil resistance depends on the temperature:

$$R_{nom} = \frac{R}{1 + \alpha \cdot (T_c - 20^\circ C)}$$

R = measured coil resistance; T_c = coil temperature [°C]; α = temperature coefficient (Cu = 0,00388 1/°C)

Check the wiring between the transmitter and the sensor and observe the sensor's temperature.

Insulation failure of the coils/electrodes or open circuit, caused by moisture or medium ingress, are possible error causes. With open circuit the coil resistance becomes infinitely high, to be detected with a multimeter. Insulation failure can only get detected with a high voltage insulation tester. The insulation value should exceed 50 MΩ at a testing voltage of 500 V. Too low insulation values can be caused by moisture or by medium leakage into the sensor or the wiring. Check the lining!

Promag H		Promag W/P	
DN 2...25 (1/12"...1")	DN 40...100 (1 1/2"...1")	DN 15...100 (1/2"...4")	DN 125...2000 (5"...78")
74 Ω ± 10%	84 Ω ± 10%	84 Ω ± 10%	140 Ω ± 10%

