8 Harmonics Filter

In the Transmitter Family NW820x the harmonics filter is integrated into the RF line.

8.1 Replacing the Harmonics Filter

ATTENTION!
Always make sure that the power supply is disconnected before commencing any service work on the transmitter rack; this will prevent injury caused by electric shock and damage to the instruments.

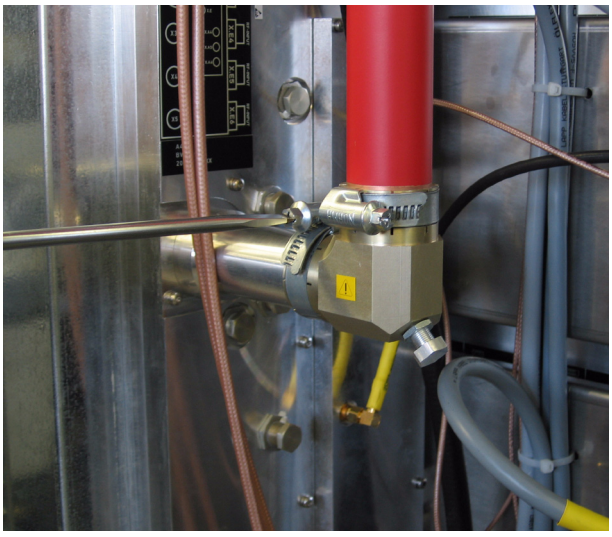
Note *The harmonics filter is lacquered in order to reduce the surface temperature, but high temperatures are nevertheless to be expected.*

8.1.1 Removing the Harmonics Filter

Note *The harmonics filter is connected to the RF chain by means of two rigid line brackets. So that the inner line of the lower rigid line (into the bandpass) stays fixed in place, the tensioning clamp of the lower rigid line bracket should be opened first.*

To remove the harmonics filter proceed as follows:

1. Open the tensioning clamp of the lower rigid line bracket on the rigid connection of the combiner.



2. Open the tensioning clamp of the upper rigid line bracket using an open-end wrench No. 7 or a Phillips screwdriver No. 2.
3. Pull the harmonics filter of the combiner rigid line down and to the right.
4. Pull the harmonics filter downward from the upper rigid line bracket.

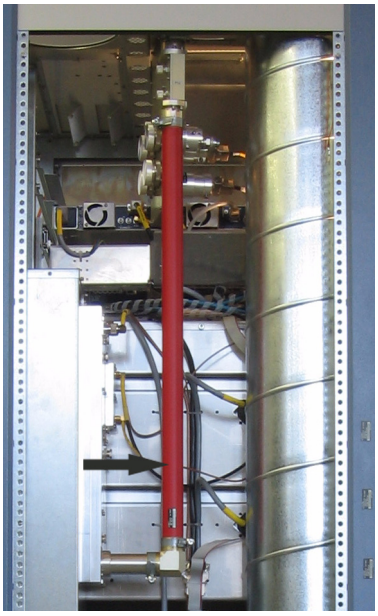


Fig. 17 *Removing the harmonics filter*

8.1.2 Installing the Harmonics Filter

The replacement harmonics filter has no rigid line brackets.

☞ Remove the rigid line bracket from the old harmonics filter, attach the bracket to the new harmonics filter (top) and screw it firmly in place.

To install the unit in the transmitter, reverse the procedure used to remove it.

9 Cooling System

You can replace the following cooling system components:

- Fan
- Starting capacitor
- Differential pressure gage
- Temperature sensors

9.1 Replacing the Fan

ATTENTION!
Always make sure that the power supply is disconnected before commencing any service work on the transmitter rack; this will prevent injury caused by electric shock and damage to the instruments.

The transmitter rack contains two fans as standard; one of these can be reached only from the front and the other only from the back. However the removal sequence is the same in both cases.

9.1.1 Removing the Fan

Note *Prior to removal make sure which of the two fans needs to be replaced.*

1. Using a Torx screwdriver No. 20, remove the front panel of the power distribution to replace the front fan, or the rear panel of the transmitter to replace the rear fan.
2. Switch off automatic line fuse **F6** (rear fan) or **F7** (front fan).

Note *Wait two minutes before starting to remove the fan (to allow for the fan overrun time).*

3. Undo the four screws on the fan housing and remove the cover.

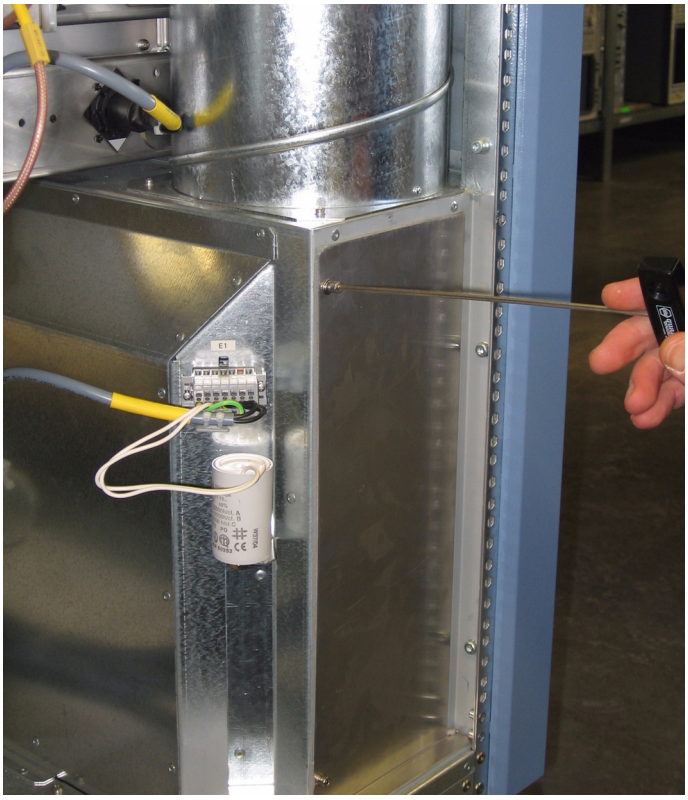


Fig. 18 Undoing the screws from the fan housing

4. On the upper side of the fan housing is a retaining device that must be unscrewed using a Torx screwdriver No. 20.

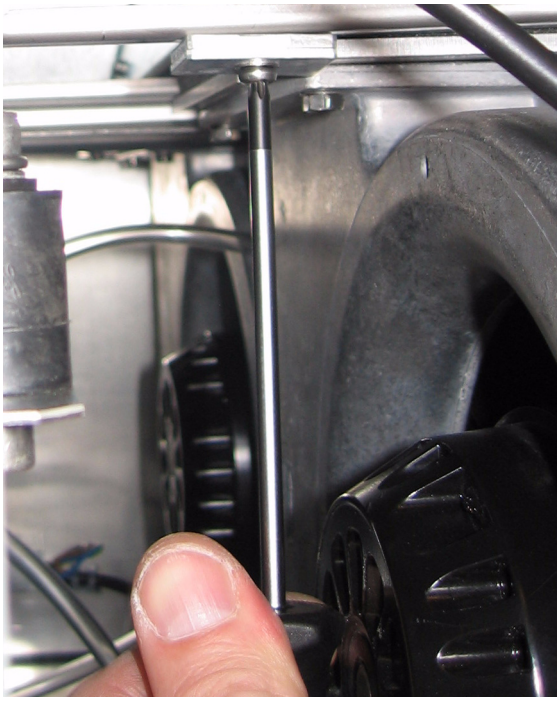


Fig. 19 Unscrewing the retaining device

5. Pull the power cable out of the connector and take away the air tube.

6. Slide the fan slightly to the side, then pull it toward yourself and out of the fan housing.
   The fan is easy to remove due to the guide rails

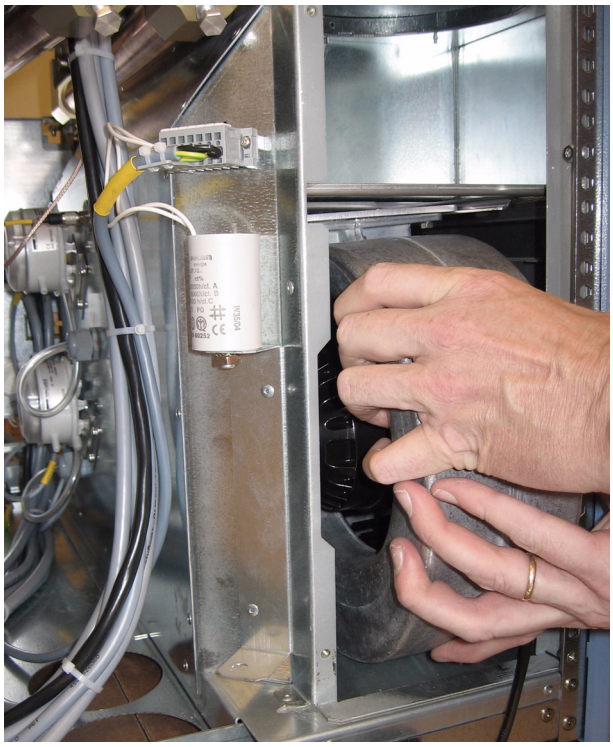


Fig. 20 *Removing a fan*

9.1.2 Installing the Fan

To install the unit in the transmitter, reverse the procedure used to remove it.

9.2 Replacing the Starting Capacitor

ATTENTION!
Always make sure that the power supply is disconnected before commencing any service work on the transmitter rack; this will prevent injury caused by electric shock and damage to the instruments.

9.2.1 Removing the Starting Capacitor

Note *Prior to removal make sure which of the two starting capacitors needs to be replaced.*

1. Using a Torx screwdriver No. 20, remove the front panel of the power distribution to replace the front starting capacitor, or the rear panel of the transmitter to replace the rear starting capacitor.
2. Switch off automatic line fuse **F6** (fan 1, rear starting capacitor) or **F7** (fan 2, front starting capacitor).
3. Remove the fan connector.
4. Undo the nut (M8, wrench width 13 mm) on the face plate of the capacitor.
5. Cut off the cable ties to free the cable.

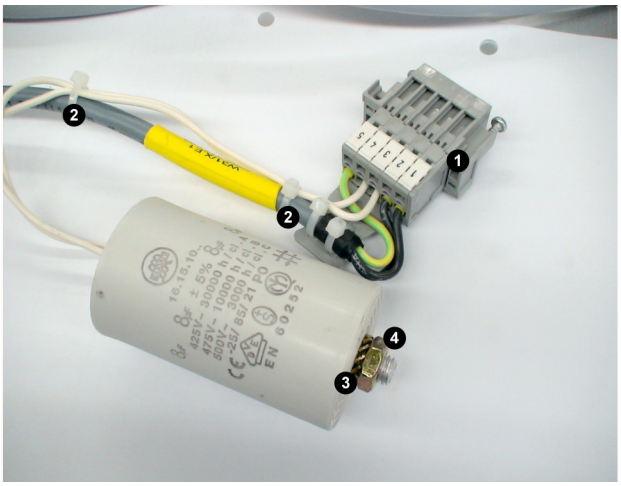


Fig. 21 *Removing the starting capacitor*

1) Connector (and socket)
2) Cable ties
3) Lock washer
4) Nut (M8)

9.2.2 Installing the Starting Capacitor

To install the unit in the transmitter, reverse the procedure used to remove it.

Note *The lock washer and M8 nut must be fastened together again.*

9.3 Replacing the Differential Pressure Gage

ATTENTION!
Always make sure that the power supply is disconnected before commencing any service work on the transmitter rack; this will prevent injury caused by electric shock and damage to the instruments.

9.3.1 Removing the Differential Pressure Gage

Note *Prior to removal make sure which of the two differential pressure gages needs to be replaced.*

1. Using a Torx screwdriver No. 20, remove the rear panel of the rack.
2. Remove the air connector (plastic tube).
3. Disconnect the associated cable from the connector on **X45** of the power distribution board. (Pins 1 and 2 for differential pressure gage 1 or pins 3 and 4 for differential pressure gage 2.)
4. Cut off the cable ties to free the cable.
5. Undo the two screws on the bracket.
6. Remove the differential pressure gage.
7. Unscrew the round cover and remove the cable (6.3 mm connector).

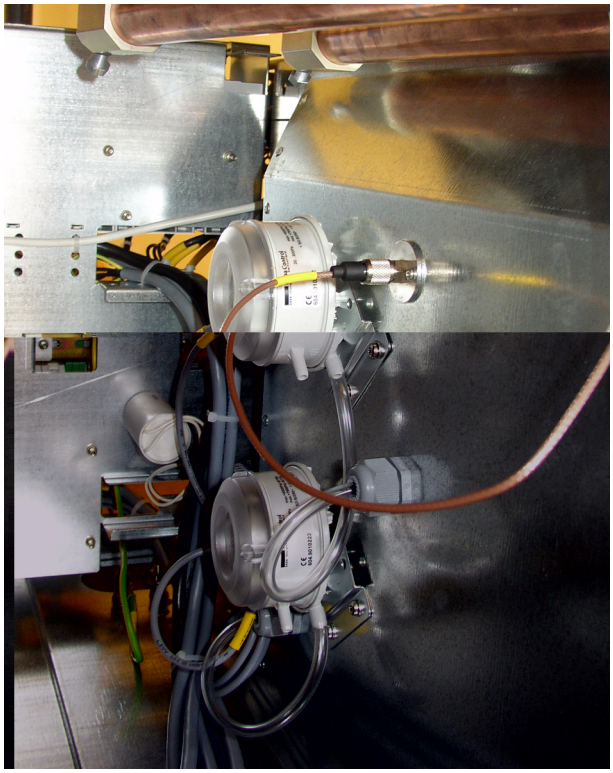


Fig. 22 *Removing the differential pressure gage*

9.3.2 Installing the Differential Pressure Gage

To install the unit in the transmitter, reverse the procedure used to remove it.

☞ Check whether the protective cap for the air nozzle on the left-hand differential pressure gage has already been removed and if not, remove it (see figure).

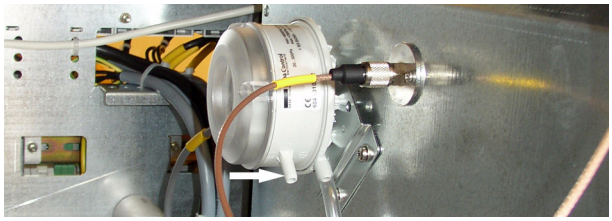


Fig. 23 Differential pressure gage without protective cap

Note *After installation the differential pressure gage must be set to the switching point of 200 Pa again.*

1. Remove the transparent top cover.

   In the middle is an adjuster with a scale.

2. Use a screwdriver to turn the adjuster until the arrow points to the value 200.

9.4 Replacing Temperature Sensors

ATTENTION!
Always make sure that the power supply is disconnected before commencing any service work on the transmitter rack; this will prevent injury caused by electric shock and damage to the instruments.

The transmitter rack contains two temperatur sensors which measure the intake and outlet air temperatures. They are located on the intake and outlet lines on the rack.

9.4.1 Removing a Temperature Sensor

Note *Prior to removal make sure which of the two temperature sensors needs to be replaced.*

1. Using a Torx screwdriver No. 20, remove the rear panel of the rack.
2. Unplug the connector of the temperature sensor concerned.

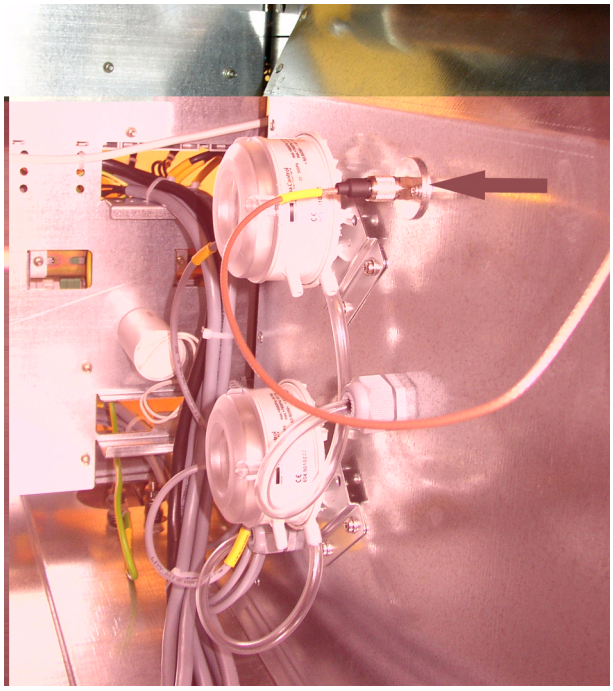


Fig. 24 Removing the temperature sensor

3. Using a Phillips screwdriver No. 0, undo the two screws (M3) on the temperature sensor flange.

1) Openings for fixing screws (M3)

4. Carefully remove the temperature sensor from the aperture in the air duct.

9.4.2 Installing a Temperature Sensor

To install the unit in the transmitter, reverse the procedure used to remove it.

10 Transformer

Note *For more information about the transformer, refer to the manual on the optional AC supply transformer.*