

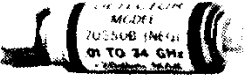




INSTRUCTION SHEET FOR RF DETECTORS

1. GENERAL INFORMATION

ANRITSU RF Detectors are available in a variety of frequency ranges, impedances, output polarities, and connector types. The ANRITSU Series includes general purpose, extended bandwidth, instrumentation, and OEM detectors.

Table 1 contains a brief description of each series of RF Detectors. Table 2 provides detailed specifications.

Table 1. Descriptions for 70 through 75 Series RF Detectors

| | | |
|-----------|---|---|
| 70 SERIES |  | <p>Extended Bandwidth Frequency Range: 10 MHz to 40 GHz Polarity: Positive and Negative Input Connector: K male Output Connector: SMC male</p> |
| 71 SERIES |  | <p>General Purpose Frequency Range: 100 kHz to 3 GHz @ 50Ω Z Frequency Range: 100 kHz to 2 GHz @ 75Ω Z Polarity: Positive and Negative Input/Output Connectors: BNC</p> |
| 73 SERIES |  | <p>General Purpose Frequency Range: 100 kHz to 4 GHz @ 50Ω Z Frequency Range: 100 kHz to 2 GHz @ 75Ω Z Polarity: Positive and Negative Input Connector: Type N Output Connector: BNC</p> |
| 74 SERIES |  | <p>General Purpose Frequency Range: 10 MHz to 12.4 GHz Polarity: Positive and Negative Impedance: 50Ω Input Connector: Type N Output Connector: BNC</p> |
| 75 SERIES |  | <p>Extended Bandwidth Frequency Range: 10 MHz to 40 GHz Impedance: 50Ω Input Connector: Type N, GPC-7, or K male Output Connector: BNC</p> |

NOTE: ANRITSU Company was formerly known as WILTRON Company.

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Table 2. RF Detector Specifications

| Model | Polarity | Frequency Range | Flatness (dB) | Connectors | | Impedance (Ohms) | SWR (Maximum) | Low Level Sensitivity at -30 dBm (mV/μW, min.) | High Level Sensitivity at +13 dBm (Volts, Min.) | Input Max. (mW) | Output Capacitance (pF) |
|-------------------|----------------------|------------------|--|------------|---------|------------------|--|--|---|-----------------|-------------------------|
| | | | | In | Out | | | | | | |
| 70KA50 70KA50P | Negative Positive | 0.01 to 20 GHz | ±0.5 | K (m) | SMC (m) | 50 | 1.33 | 0.5 | 1 | 100 | 30 |
| 70KB50 70KB50P | Negative Positive | 0.01 to 26.5 GHz | ±0.5 to 20 GHz | K (m) | SMC (m) | 50 | 1.33 to 20 GHz 1.5 to 26.5 GHz | 0.5 | 1 | 100 | 30 |
| 70KC50 70KC50P | Negative Positive | 0.01 to 40 GHz | ±0.5 to 20 GHz ±1 to 26.5 GHz ±1.5 to 40 GHz | K (m) | SMC (m) | 50 | 1.33 to 20 GHz 1.5 to 26.5 GHz 1.9 to 40 GHz | 0.5 | 1 | 100 | 30 |
| 71B50 71B50P | Negative Positive | 100 kHz to 3 GHz | ±0.5 | BNC (m) | BNC (f) | 50 | 1.2 | 0.35 | 1 | 100 | 500 |
| 71B75 71B75P | Negative Positive | 100 kHz to 2 GHz | ±0.5 | BNC (m) | BNC (f) | 75 | 1.25 | 0.35 | 1 | 100 | 500 |
| 73N50 73N50P | Negative Positive | 100 kHz to 4 GHz | ±0.6 | N (m) | BNC (f) | 50 | 1.23 | 0.35 | 1 | 100 | 500 |
| 73N75 73N75P | Negative Positive | 100 kHz to 2 GHz | ±0.6 | N (m) | BNC (f) | 75 | 1.23 | 0.35 | 1 | 100 | 500 |
| 74N50B 74N50BP | Negative Positive | 0.01 to 12.4 GHz | ±0.3 | N (m) | BNC (f) | 50 | 1.15 to 4.5 GHz 1.3 to 12.4 GHz | 0.4 | 1 | 100 | 30 |
| 75A50 75A50P | Negative Positive | 0.01 to 18.5 GHz | ±0.5 to 12.4 GHz ±1 to 18.5 GHz | GPC-7 | BNC (f) | 50 | 1.25 to 4.5 GHz 1.35 to 7 GHz 1.5 to 12.4 GHz 1.6 to 18.5 GHz | 0.4 | 1 | 100 | 30 |
| 75N50B 75N50BP | Negative Positive | 0.01 to 18 GHz | ±0.3 to 12.4 GHz ±0.6 to 18 GHz | N (m) | BNC (f) | 50 | 1.15 to 4.5 GHz 1.30 to 15 GHz 1.39 to 18 GHz | 0.4 | 1 | 100 | 30 |
| 75KA50 75KA50P | Negative Positive | 0.01 to 20 GHz | ±0.5 | K (m) | BNC (f) | 50 | 1.33 | 0.4 | 1 | 100 | 30 |
| 75KB50 75KB50P | Negative Positive | 0.01 to 26.5 GHz | ±0.5 to 20 GHz ±1 to 26.5 GHz | K (m) | BNC (f) | 50 | 1.33 to 20 GHz 1.5 to 26.5 GHz | 0.4 | 1 | 100 | 30 |
| 75VA50 | | 0.01 to 50 GHz | ±0.5 to 20 GHz ±1 to 26.5 GHz ±1.5 to 40 GHz ±3 to 50 GHz | V (m) | BNC (f) | | 1.33 to 20 GHz 1.5 to 26.5 GHz 1.9 to 40 GHz 2.1 to 50 GHz | 0.4 | 1 | 100 | 30 |
| 75KC50 75KC50P | Negative Positive | 0.01 to 40 GHz | 0.5 to 20 GHz 1 to 26.5 GHz 1.5 to 40 GHz | K (m) | BNC (f) | 50 | 1.33 to 20 GHz 1.5 to 26.5 GHz 1.9 to 40 GHz | 0.4 | 1 | 100 | 30 |

2. HANDLING PRECAUTIONS

CAUTION

Static electricity can damage the RF detector. Before picking up the RF detector, discharge body static electricity by touching the grounded chassis of the instrument used with the detector. Also, check that interconnecting cables and associated equipment are discharged before connecting them to the RF detector.

3. DIODE REPLACEMENT

ANRITSU RF Detector Series 70, 71, 73, 74, and 75 have field-replaceable diodes. Table 3 lists the diode part numbers. To replace a diode, follow the steps in the applicable RF detector series diode replacement procedure.

Table 3. Diode Part Numbers

| Series | Negative Polarity | Positive Polarity |
|----------------------|-------------------|-------------------|
| 70K Series (@20 GHz) | A16177 | A18948 |
| 70K Series (>20 GHz) | A16176 | A18873 |
| 71 and 73 Series | 10-A2X985 | 10-A2X985 |
| 74N50B | A18735 | A18736 |
| 75A50 | 10-75 | 10-75 |
| 75N50B | B16132 | A18694 |
| 75K Series (@20 GHz) | A16177 | A18948 |
| 75K Series (>20 GHz) | A16176 | A18873 |

a. Diode Replacement Procedure for the Series 70/75K RF Detectors

An exploded view of the Series 70K and 75K RF Detectors is shown in Figure 1.

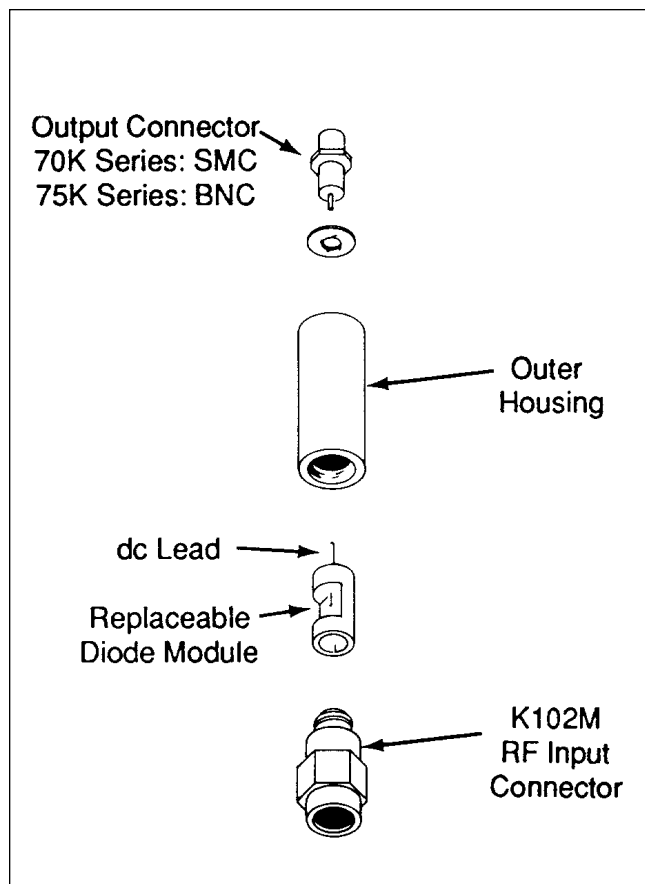


Figure 1. Series 70K/75K Assembly

1. Using the ANRITSU Model 01-105 Torquing Tool Kit, unscrew the RF input assembly from the outer housing.

CAUTION

Before handling the new diode module, touch a grounded object to discharge any body static electricity.

2. Check that the dc lead of the new diode module is straight.
3. Carefully replace the diode module.
4. Insert and tighten the RF input assembly in the outer housing.

b. Diode Replacement Procedure for the Series 71/73 RF Detectors

An exploded view of the Series 71 and 73 RF Detectors is shown in Figure 2.

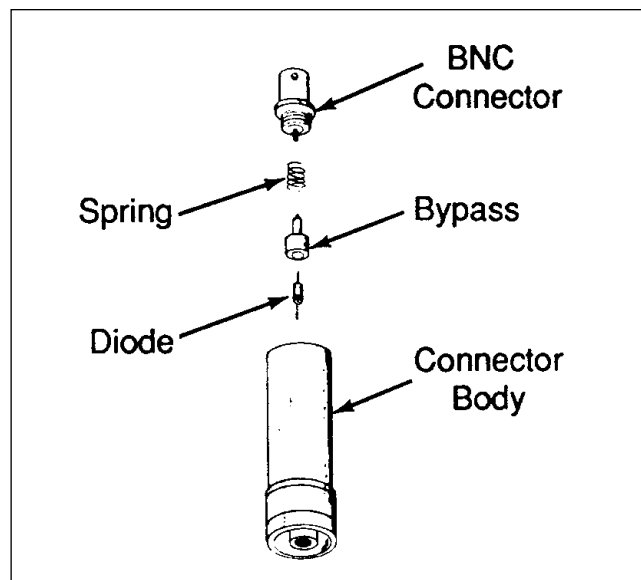


Figure 2. Series 71/73 Assembly

1. Unscrew the female BNC connector from the body.

CAUTION

Before handling the new diode, touch a grounded object to discharge any body static electricity.

2. Carefully remove the spring and washer assembly.
3. Remove the old diode using a pair of needle nose pliers. During removal, note the polarity in which the diode was installed (band downward for a negative detector).
4. Install the new diode for the correct polarity, observing proper static handling precautions.

CAUTION

Ensure that the diode leads and sockets are not damaged when inserting the new diode.

5. Reassemble the parts in the reverse order of the disassembly.

c. Diode Replacement Procedure for the Series 75A50 RF Detector

An exploded view of the Series 75A50 RF Detector is shown in Figure 4.

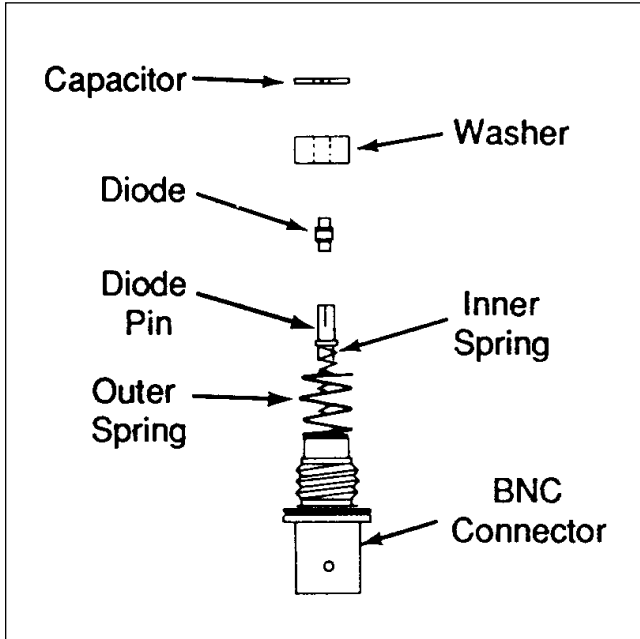


Figure 4. Series 75A50 Assembly

1. Unscrew and remove the video housing from the detector body.
2. Position the exposed end of the diode downward on a smooth surface. While holding the washer between the thumb and forefinger, carefully push down on the washer to loosen the capacitor and washer.
3. Pull out the old diode.

CAUTION

Before handling the new diode, touch a grounded object to discharge any body static electricity.

4. Insert the new diode into the diode pin (tinned end outward for a negative detector).
5. Insert the washer and press the capacitor into position with the counter-sunk end toward the washer. The capacitor must lay flat. Check that the diode is securely seated.
6. Screw the video housing into the detector until hand tight.

d. Diode Replacement Procedure for the Series 74/75N50B RF Detectors

An exploded view of the Series 74N50B and 75N50B RF Detectors is shown in Figure 3.

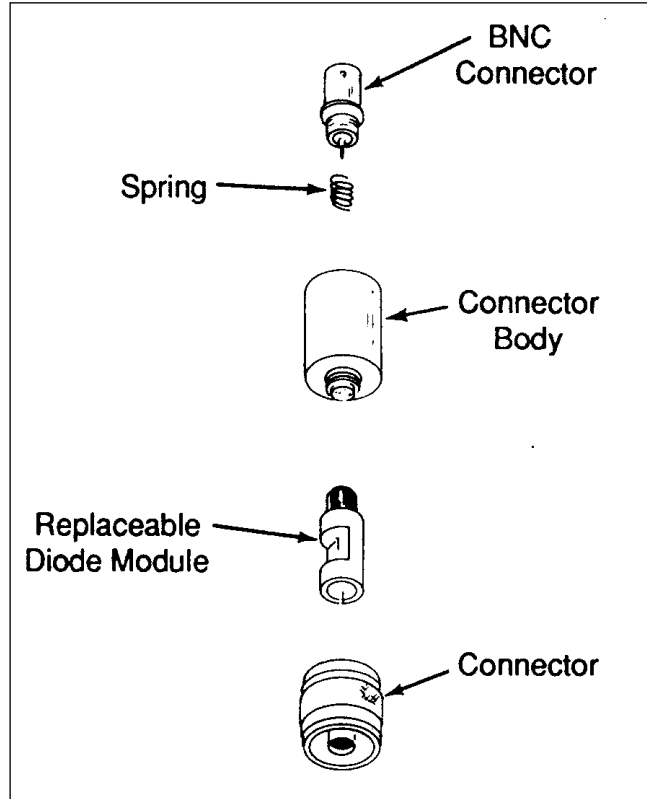


Figure 3. Series 74/75N50B Assembly

1. Unscrew the BNC connector from the connector body.
2. Using needle nose pliers, remove the diode module from the connector body.

CAUTION

Before handling the new diode module, touch a grounded object to discharge any body static electricity.

3. Check that the dc lead from the diode module is straight; then reinstall the module into the connector body.
4. Insert the spring and lock washer; then screw in the BNC connector.