Spare Parts
NOTICE

Spare Parts
Any substitution of non-recognized spare parts may jeopardize safety. Repair, e.g. substitution of components etc. may also jeopardize safety and is under no circumstances allowed.

Rosemount Tank Radar AB will not take any responsibility for faults, accidents, etc caused by non-recognized spare parts or any repair which is not made by Rosemount Tank Radar AB.
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Section 1  Tank Radar Rex

When ordering a spare part to get the correct configuration you need to specify the part/item number, and in some cases also the serial number (1), and Unit ID (2), it can also be a good idea to supply project number (3), if available.

1.1 RTG 3900 SERIES GAUGES

There are four types of gauges to fit any storage tank:

- **Horn Antenna Gauge, RTG 3920**, for fixed roof installation without still-pipe.
- **Parabolic Antenna Gauge, RTG 3930**, for installation without still-pipe, for general use and in demanding environments.
- **Still-pipe Array Antenna Gauge, RTG 3950**, for measurement in existing still-pipes.
- **LPG/LNG Gauge, RTG 3960**, for liquefied gas, LPG and LNG

The radar gauges consist of the Transmitter Head (TH) and the antenna.
1.2 TRANSMITTER HEAD

The same transmitter head is used on all types of Rex gauges minimizing spare part requirements. It is freely interchangeable between different gauges, regardless of antenna type.

1.2.1 Transmitter Head Electronics

The Transmitter Head Electronics (THE) is a separate unit located inside the safety enclosure of the Transmitter Head. It is easily exchangeable and not in contact with the tank atmosphere. The THE includes the microwave unit, circuit boards for signal processing, data communication, power supply and transient protection.

The Rex gauge requires no recalibration, unless the SPC board is exchanged.

Transmitter Head Electronics (THE)
The standard version includes:

- SPC, FCC, APC, and TRC boards, see section 1.2.2
- MB (Mother Board) and microwave module

Item number: SPTHE39

1.2.2 Electronic Boards

A non-standard version also requires either an order with model code or information about SPC serial number / Unit ID to get the correct configuration.
### Signal Processing Card (SPC)
The SPC card includes a high performance signal processor plus memories for tank specific data set via remote programming.

Part Number: 9150072-501

**NOTE:**
Cannot be ordered for custody transfer gauges.

### Analog Processing Card (APC) (1)
The APC card is used for filtering and multiplexing of analog input signals. Keeping the analog circuitry on a separate card improves measuring accuracy by giving a high signal to noise ratio.

Part Number: 9150072-511

**NOTE:**
Analog inputs require Serial number and Unit ID information.

### Field Communication Card (FCC) (1)
The FCC card handles communication with external devices. There are different versions of the FCC card allowing the use of various types of communication protocols and emulation of gauges from other vendors.

Part Number:
- 9150072-675 Standard TRL2 bus
- 9150072-673 or 771 For emulation and analog output

**NOTE:**
For FOUNDATION™ fieldbus, exchange the complete THE.

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(1) A non-standard version requires either an order with model code, or information about serial number and Unit ID in addition to the part number.
Transformer Rectifier Card (TRC) (1)
The TRC card is required for power supply conversion
Part Number:
- 9150072-531 Standard 100-240 VAC version
- 9150072-532 24-70 VAC
- 9150072-533 20-28 VDC

Transmitter Interface Card (TIC)
The TIC card is required for intrinsically safe inputs. It includes:
- Two supply zener barriers and two return barriers for 4-20 mA current loops
- One supply zener barrier for a Slave Data Acquisition Unit or a Remote Display Unit
- Signal/supply connection for optional Temperature Multiplexer Card (TMC)
Part Number: 9150072-551

Temperature Multiplexer Card (TMC)
The TMC card is used to connect up to six temperature sensors directly to the gauge.
Part Number: 9150072-561

Relay Output Card (ROC)
The ROC card includes two relays. It allows control of external devices such as valves, pumps, heating coils, overfill protection according to TÜV etc.
Part Number: 9150072-591

(1) A non-standard version requires either an order with model code, or information about serial number and Unit ID in addition to the part number.
Section 2  TankRadar Pro

When ordering a spare part to get the correct configuration you need to specify the part/item number, and in some cases also the gauge serial number (1), and Unit ID (2), it can also be a good idea to supply Tag No: (3), if available.

2.1 PRO GAUGES

There are six types of gauges to fit any storage tank:

- **Pro parabolic antenna gauge**, for installation without still-pipe, for general use and in demanding environments.
- **Pro cone antenna gauge**, for fixed roof installation without still-pipe.
- **Pro still-pipe array antenna gauge**, for measurement in still-pipes.
- **Pro still-pipe antenna gauge**, is particularly suitable for applications with highly turbulent liquids, or liquids with very low dielectric constant, which give weak radar reflections (such as LPG). The 1-or 2-in. gauge can be delivered with a still-pipe.
- **Pro process seal antenna gauge**, is suitable for use in a hygienic or aggressive tank atmosphere.
- **Pro rod antenna gauge**, is suitable for small nozzles / tanks.

Each radar gauge consist of a Transmitter Head (TH) and an antenna.
2.2 TRANSMITTER HEAD

The transmitter head is available in four basic versions: lite, standard, gold, and platinum. It is freely interchangeable between different gauges, regardless of antenna type.

2.2.1 Transmitter Head Electronics

The Transmitter Head Electronics (THE) is a separate unit located inside the safety enclosure of the Transmitter Head. It is easily exchangeable and not in contact with the tank atmosphere. The THE includes the microwave unit, circuit boards for signal processing, data communication, power supply and transient protection. The Pro gauge requires no recalibration, not even after the transmitter head electronics has been exchanged.
Transmitter Head Electronics (THE)

The standard version includes:
- TGE (main board) with processor, microwave electronics etc
- TA 43
- PS 43

See “Electronic Boards” on page 2-4 for details.

Item number:
- SP 43L (lite housing)
- SP 43S (standard housing)
- SP 43G (gold housing)
- SP 43ITG (platinum housing)

Optional boards:
- TM 40, FF 43, XA 40, and IS 40

A non-standard version requires either an order with model code or information about TGE serial number (below), Unit ID or gauge serial number (see page 2-1) to get the correct configuration.
### 2.2.2 Electronic Boards

<table>
<thead>
<tr>
<th><strong>TA 43, TGE Adapter</strong></th>
<th>![TA 43, TGE Adapter Image]</th>
</tr>
</thead>
<tbody>
<tr>
<td>This adapter board serves several functions, including communication and a display interface. Different cards can be plugged onto the TGE adapter. TA 43 provides:</td>
<td>![TA 43, TGE Adapter Image]</td>
</tr>
<tr>
<td>• a <strong>HART modem</strong>. HART/4-20 mA is the standard primary output</td>
<td>![TA 43, TGE Adapter Image]</td>
</tr>
<tr>
<td>• Secondary 4-20 mA output (non-HART)</td>
<td>![TA 43, TGE Adapter Image]</td>
</tr>
<tr>
<td>• <strong>FOUNDATION™ fieldbus</strong> <em>(1)</em></td>
<td>![TA 43, TGE Adapter Image]</td>
</tr>
<tr>
<td>Part number: 9150074-547</td>
<td>![TA 43, TGE Adapter Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PS 43, Power Supply Unit</strong></th>
<th>![PS 43, Power Supply Unit Image]</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is a multi-input voltage unit that accepts both AC and DC input. It delivers two voltages +12 VDC mainly used in the TGE, and +5 VDC for other units.</td>
<td>![PS 43, Power Supply Unit Image]</td>
</tr>
<tr>
<td>Part number: 6853498-509</td>
<td>![PS 43, Power Supply Unit Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>TM 40, TRL2 Modem Board</strong></th>
<th>![TM 40, TRL2 Modem Board Image]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM 40 is an optional serial communications interface (TRL2 bus) that replaces the HART modem on TA 43. It is connected on top of TA 43.</td>
<td>![TM 40, TRL2 Modem Board Image]</td>
</tr>
<tr>
<td>Part number: 9150073-512</td>
<td>![TM 40, TRL2 Modem Board Image]</td>
</tr>
</tbody>
</table>

*(1) Also requires the FF 43 card*
<table>
<thead>
<tr>
<th><strong>FF 43, FOUNDATION™ fieldbus modem</strong></th>
<th><img src="image1.png" alt="Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>FF 43 is an optional serial communication interface that replaces the HART modem on TA 43. It is connected on top of TA 43.</td>
<td></td>
</tr>
<tr>
<td>Item number: SPT 4FF (^{(2)})</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>XA 40, Extra Analog Output Board</strong></th>
<th><img src="image2.png" alt="Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>Required for an active 4-20 mA secondary output when the primary output is HART. It is connected on top of TA 43.</td>
<td></td>
</tr>
<tr>
<td>Part number: 9150073-505</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>IS 40, Supply Board</strong></th>
<th><img src="image3.png" alt="Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>In addition to XA 40, this card is required for an active 4-20 mA secondary output when the primary output is HART. IS 40, is an isolated DC/DC converter supplying floating power to make the 4-20 mA output circuit an active current transmitter. It can be plugged in (upside down) on top of XA 40.</td>
<td></td>
</tr>
<tr>
<td>Part number: 91500-507</td>
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</tbody>
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\(^{(2)}\) The serial number for the existing gauge is required.