



FMR532	FMR540
<p>The FMR532 RTG is used for custody transfer (+/- 1mm) and inventory control (+/- 3mm) applications with NMI- and PTB-approvals. It meets the relevant requirements according to OIML R85 and API 3.1B. The FMR532 with the planar antenna is specifically suited for stilling well applications. The FMR532 offers cost-effective and simple installation via 4-wire cable with HART and 24 V DC intrinsically safe power supply.</p>	<p>The FMR540 RTG is used for custody transfer (+/- 1mm) and inventory control (+/- 3mm) applications with NMI- and PTB-approvals. It meets the relevant requirements according to OIML R85 and API 3.1B. The FMR540 with parabolic antenna is particularly suited for free space applications up to 40m, and has a horn antenna for free space applications that disallow the use of a parabolic antenna due to tank/nozzle geometry. The FMR540 offers cost-effective and simple installation via 4-wire cable with HART and 24 V DC intrinsically safe power supply.</p>

Features & Options

Features & Options		
Accuracy Rate	<ul style="list-style-type: none"> ±0.8mm (0.03") 	<ul style="list-style-type: none"> ± 1 mm
Frequency	<ul style="list-style-type: none"> C-band 6 GHz 	<ul style="list-style-type: none"> K-band 26 GHz
Power Consumption	<ul style="list-style-type: none"> Max. 330 mW at 16 V max. 500 mW at 24 V max. 600 mW at 30 V 	<ul style="list-style-type: none"> Maximum 400 mW at 16 V Maximum 600 mW at 24 V Maximum 750 mW at 30 V Non-Ex: max. 900 mW at 36 V
Current Consumption	<ul style="list-style-type: none"> Max. 21 mA (50 mA inrush current) 	<ul style="list-style-type: none"> Max. 21 mA (50 mA inrush current)
Ambient Temperature	<ul style="list-style-type: none"> Standard: -40°C to 80°C (-40°F to 176°F) For calibration to regulatory standards: -25°C to 60°C (-13°F to 131°F) 	<ul style="list-style-type: none"> Standard: -40°C to 80°C (-40°F to 176°F) For calibration to regulatory standards: -25°C to 60°C (-13°F to 131°F)
Process Temperature	<ul style="list-style-type: none"> -40 to +150°C (-40 to +302°F) 	<ul style="list-style-type: none"> -40 to +200°C (-40 to +392°F)
Standard Range	<ul style="list-style-type: none"> up to 124 ft (38 m) 	<ul style="list-style-type: none"> Better than ± 1mm Horn antenna: 30 m (98 ft) NMI and PTB 15 m (49 ft) Parabolic antenna: 40 m (131 ft) NMI = 25 m (82 ft), PTB = 30 m (98 ft)
Wiring	<ul style="list-style-type: none"> Intrinsically safe 4-wire 	<ul style="list-style-type: none"> Intrinsically safe 4-wire
Communications Output Options	<ul style="list-style-type: none"> HART 	<ul style="list-style-type: none"> HART
Switch Output Options	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Approvals	<ul style="list-style-type: none"> FM, CSA, ATEX, WHG 	<ul style="list-style-type: none"> IEC Ex, ATEX and WHG
SIL Rating	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None

Applications

Applications		
Custody Transfer	X	X
Stilling Well	X	
Free Space		X
Open Air		
Floating Roof		
Buffer Tanks		
Reactor & Mixing Tanks		
Asphalt Tank		X
Overfill Prevention		



FMR50	FMR51
The FMR50 RTG is the best choice in simple reservoir and storage applications as well as in utility processes.	Ideally suited for inventory control applications, the FMR51 RTG is used for continuous, non-contact level measurement in bulk liquid storage tanks. The FMR51 can be used for level measurement even under extreme process conditions like high temperature and high pressure in the oil & gas and chemical industry.

Features & Options		
Accuracy Rate	<ul style="list-style-type: none"> ± 2 mm (0.08") 	<ul style="list-style-type: none"> ± 2 mm (0.08")
Frequency	<ul style="list-style-type: none"> K-band 26 GHz 	<ul style="list-style-type: none"> K-band 26 GHz
Power Consumption	<ul style="list-style-type: none"> 0.9 W to 1.3 W 	<ul style="list-style-type: none"> 60 mW to 900 mW
Current Consumption	<ul style="list-style-type: none"> HART: 3.6 to 22 mA PROFIBUS PA: max. 14 mA FOUNDATION Fieldbus: max. 14 mA 	<ul style="list-style-type: none"> HART: 3.6 to 22 mA PROFIBUS PA: max. 14 mA FOUNDATION Fieldbus: max. 15 mA
Ambient Temperature	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F) 	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F)
Process Temperature	<ul style="list-style-type: none"> '-40 to +130°C (-40 to +266°F) 	<ul style="list-style-type: none"> 'XT: -196 to +280°C (-321 to +536°F) 'HT: -196 to +450°C (-321 to +842°F)
Standard Range	<ul style="list-style-type: none"> up to 98 ft (30 m) 	<ul style="list-style-type: none"> up to 131 ft (40 m)
Wiring	<ul style="list-style-type: none"> 2-wire 	<ul style="list-style-type: none"> 2-wire
Communications Output Options	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA, PROFIBUS PA, or FOUNDATION Fieldbus 	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA, PROFIBUS PA, or FOUNDATION Fieldbus
Switch Output Options	<ul style="list-style-type: none"> optional single open collector switch output 	<ul style="list-style-type: none"> optional single open collector switch output
Approvals	<ul style="list-style-type: none"> FM, CSA, ATEX, IECEx, NEPSi, TIIS, WHG 	<ul style="list-style-type: none"> FM, CSA, ATEX, IECEx, NEPSi, TIIS, WHG
SIL Rating	<ul style="list-style-type: none"> SIL 2 according to IEC 61508 	<ul style="list-style-type: none"> SIL 2 according to IEC 61508

Applications		
Custody Transfer		
Stilling Well		
Free Space	X	X
Open Air	X	X
Floating Roof		X
Buffer Tanks	X	X
Reactor & Mixing Tanks	X	X
Asphalt Tank		
Overfill Prevention	X	X



FMR52	FMR53
<p>The FMR52 RTG is the best choice for level measurement in aggressive liquids or applications with hygiene requirements. For applications in aggressive liquids, the FMR52 offers extraordinary advantages with its completely PTFE-filled and flush-mounted horn antenna. The FMR52 is also the sensor for hygiene-sensitive applications in the food and life sciences industry - ASME BPE, USP Class VI, 3-A and EHEDG approvals.</p>	<p>The FMR53 RTG is the best choice for simple level measurement applications in liquids, pastes and slurries. With its slim rod antenna, the FMR53 free space radar is particularly suited for small process connections. The PTFE coating of the rod antenna and flange plating guarantee resistance also in aggressive media.</p>

Features & Options		
Accuracy Rate	<ul style="list-style-type: none"> ± 2 mm (0.08") 	<ul style="list-style-type: none"> ± 6 mm (0.24")
Frequency	<ul style="list-style-type: none"> K-band 26 GHz 	<ul style="list-style-type: none"> C-band 6 GHz
Power Consumption	<ul style="list-style-type: none"> 60 mW to 900 mW 	<ul style="list-style-type: none"> 60 mW to 900 mW
Current Consumption	<ul style="list-style-type: none"> HART: 3.6 to 22 mA, PROFIBUS PA: max. 14 mA FOUNDATION Fieldbus: max. 15 mA 	<ul style="list-style-type: none"> HART: 3.6 to 22 mA PROFIBUS PA: max. 14 mA FOUNDATION Fieldbus: max. 15 mA
Ambient Temperature	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F) 	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F)
Process Temperature	<ul style="list-style-type: none"> '-196 to +200°C (-321 to +392°F) 	<ul style="list-style-type: none"> '-40 to +150°C (-40 to +302°F)
Standard Range	<ul style="list-style-type: none"> up to 131 ft (40 m) 	<ul style="list-style-type: none"> up to 66 ft (20 m)
Wiring	<ul style="list-style-type: none"> 2-wire 	<ul style="list-style-type: none"> 2-wire
Communications Output Options	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA, PROFIBUS PA, or FOUNDATION Fieldbus 	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA, PROFIBUS PA, or FOUNDATION Fieldbus
Switch Output Options	<ul style="list-style-type: none"> optional single open collector switch output 	<ul style="list-style-type: none"> optional single open collector switch output
Approvals	<ul style="list-style-type: none"> FM, CSA, ATEX, IECEx, NEPSi, TIIS, WHG 	<ul style="list-style-type: none"> FM, CSA, ATEX, IECEx, NEPSi, TIIS, WHG
SIL Rating	<ul style="list-style-type: none"> SIL 2 according to IEC 61508 	<ul style="list-style-type: none"> SIL 2 according to IEC 61508

Applications		
Custody Transfer		
Stilling Well		
Free Space	X	X
Open Air		X
Floating Roof		
Buffer Tanks	X	
Reactor & Mixing Tanks	X	
Asphalt Tank		
Overfill Prevention	X	X



FMR54	FMR60
<p>The FMR54 RTG is used for continuous, non-contact level measurement in bulk liquid storage tanks, and in in stilling wells with the specially designed planar antenna. The FMR54 can be used in high temperature and high pressure applications, where strong steam or ammonia can occur.</p>	<p>A smart, 80 GHz radar tank gauge for continuous and non-contact level measurement. The FMR60 RTG offers maximum reliability due to the drip-off antenna, improved algorithms and small beam angle.</p>

Features & Options		
Accuracy Rate	<ul style="list-style-type: none"> ± 6 mm (0.24") 	<ul style="list-style-type: none"> ±1mm (0.04")
Frequency	<ul style="list-style-type: none"> C-band 6 GHz 	<ul style="list-style-type: none"> W-band 80 GHz
Power Consumption	<ul style="list-style-type: none"> 60 mW to 900 mW 	<ul style="list-style-type: none"> 2-wire; 4-20mA HART: < 0.9 W 2-wire; 4-20mA HART, switch output:< 0.9 W 2-wire; 4-20mA HART, 4-20mA: < 2 x 0.7 W
Current Consumption	<ul style="list-style-type: none"> HART: 3.6 to 22 mA, PROFIBUS PA: max. 14 mA FOUNDATION Fieldbus: max. 15 mA 	<ul style="list-style-type: none"> HART: Nominal current: 3.6 to 22mA. The start-up current for multidrop mode can be parametrized (is set to 3.6mA on delivery) Breakdown signal (NAMUR NE43): adjustable: 3.59 to 22.5mA
Ambient Temperature	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F) 	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F)
Process Temperature	<ul style="list-style-type: none"> '-60 to +400°C (-76 to +752°F) 	<ul style="list-style-type: none"> '-40 to +130°C (-40 to +266°F)
Standard Range	<ul style="list-style-type: none"> up to 66 ft (20 m) 	<ul style="list-style-type: none"> up to 164 ft (50 m)
Wiring	<ul style="list-style-type: none"> 2-wire 	<ul style="list-style-type: none"> 2-wire
Communications Output Options	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA, PROFIBUS PA, or FOUNDATION Fieldbus 	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA
Switch Output Options	<ul style="list-style-type: none"> optional single open collector switch output 	<ul style="list-style-type: none"> optional single open collector switch output
Approvals	<ul style="list-style-type: none"> FM, CSA, ATEX, IECEx, NEPSi, TIIS, WHG 	<ul style="list-style-type: none"> FM, ATEX, IEC Ex, NEPSI, WHG
SIL Rating	<ul style="list-style-type: none"> SIL 2 according to IEC 61508 	<ul style="list-style-type: none"> SIL 2/3 according to IEC 61508

Applications		
Custody Transfer		
Stilling Well	X	
Free Space	X	X
Open Air	X	X
Floating Roof		X
Buffer Tanks		X
Reactor & Mixing Tanks		X
Asphalt Tank	X	
Overfill Prevention	X	X



FMR62	FMR67
<p>A smart, 80 GHz radar tank gauge for continuous and non-contact level measurement. For applications in aggressive liquids, the FMR62 RTG offers extraordinary advantages with its completely PTFE-filled and flush-mounted antenna. The integrated PEEK antenna allows very small process connections. The FMR62 free space radar offers maximum reliability due to improved algorithms and small beam angle.</p>	<p>A smart, 80 GHz radar tank gauge for continuous and non-contact level measurement. The FMR67 RTG offers maximum reliability due to the drip-off antenna, improved focusing and very small emitting angles which is perfect for the measuring in slim silos. The integrated air purge makes the FMR67 ideally suited for applications in Asphalt and Bitumen applications, with an accuracy of +/- 1 mm. The integrated air purge also permits the the FMR67 to be used for continuous, non-contact level measurement in powdery to granular bulk solids, with an accuracy of +/- 3 mm.</p>

Features & Options

Accuracy Rate	<ul style="list-style-type: none"> ±1mm (0.04") 	<ul style="list-style-type: none"> ±1mm (0.04") - Liquids ±3mm (0.12") - Solids
Frequency	<ul style="list-style-type: none"> W-band 80 GHz 	<ul style="list-style-type: none"> W-band 80 GHz
Power Consumption	<ul style="list-style-type: none"> 2-wire; 4-20mA HART: < 0.9 W 2-wire; 4-20mA HART, switch output:< 0.9 W 2-wire; 4-20mA HART, 4-20mA: < 2 x 0.7W 	<ul style="list-style-type: none"> 2-wire; 4-20mA HART: < 0.9 W 2-wire; 4-20mA HART, switch output:< 0.9 W 2-wire; 4-20mA HART, 4-20mA: < 2 x 0.7W
Current Consumption	<p>HART:</p> <ul style="list-style-type: none"> Nominal current: 3.6 to 22mA. The start-up current for multidrop mode can be parametrized (is set to 3.6mA on delivery) Breakdown signal (NAMUR NE43): adjustable: 3.59 to 22.5mA 	<p>HART:</p> <ul style="list-style-type: none"> Nominal current: 3.6 to 22mA. The start-up current for multidrop mode can be parametrized (is set to 3.6mA on delivery) Breakdown signal (NAMUR NE43): adjustable: 3.59 to 22.5mA
Ambient Temperature	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F) 	<ul style="list-style-type: none"> 'Unit: -40°C to 80°C (-40°F to 176°F) Display: -20 °C and +70 °C (-4 °F and +158 °F)
Process Temperature	<ul style="list-style-type: none"> '-40 to +200°C (-40 to +392°F) 	<ul style="list-style-type: none"> '-40 to +200°C (-40 to +392°F)
Standard Range	<ul style="list-style-type: none"> up to 262 ft (80 m) 	<ul style="list-style-type: none"> up to 410 ft (125 m)
Wiring	<ul style="list-style-type: none"> 2-wire 	<ul style="list-style-type: none"> 2-wire
Communications Output Options	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA 	<ul style="list-style-type: none"> HART/4-20mA without or with secondary 4-20 mA
Switch Output Options	<ul style="list-style-type: none"> optional single open collector switch output 	<ul style="list-style-type: none"> optional single open collector switch output
Approvals	<ul style="list-style-type: none"> FM, ATEX, IEC Ex, NEPSI, WHG 	<ul style="list-style-type: none"> FM, ATEX, IEC Ex, NEPSI, WHG
SIL Rating	<ul style="list-style-type: none"> SIL 2/3 according to IEC 61508 	<ul style="list-style-type: none"> SIL 2/3 according to IEC 61508

Applications

Custody Transfer		
Stilling Well	X	
Free Space	X	X
Open Air	X	X
Floating Roof		X
Buffer Tanks		X
Reactor & Mixing Tanks		X
Asphalt Tank	X	
Overfill Prevention	X	X



NMR81	NMR84
<p>The NMR81 RTG is used for custody transfer (+/- 0.5 or 1mm) and inventory control (+/- 1mm) applications with NMI- and PTB-approvals and meets the requirements according to OIML R85 and API 3.1B. The NMR81 is particularly suited for free space applications up to 70m. The drip-off lens antenna with 80 GHz transmitting frequency produces a sharply focused beam angle of 3° and avoids obstacles even close to tank wall.</p>	<p>The NMR84 RTG is used for custody transfer (+/- 0.5 or 1mm) and inventory control (+/- 1mm) applications with NMI- and PTB-approvals and meets the requirements according to OIML R85 and API 3.1B. The The NMR84 radar with a drip-off planar antenna is specifically suited for stilling well applications. The superior drip-off antenna design with a proven track record eliminates problems caused by condensation.</p>

Features & Options		
Accuracy Rate	<ul style="list-style-type: none"> ±0.5mm (0.02") 	<ul style="list-style-type: none"> ±0.5mm (0.02")
Frequency	<ul style="list-style-type: none"> W-band 80 GHz 	<ul style="list-style-type: none"> 6 GHz
Power Consumption	<ul style="list-style-type: none"> High voltage AC power supply: 85 to 264 VAC, 50/60 Hz, 28.8 VA Low voltage AC power supply: 52 to 75 VAC, 50/60 Hz, 21.6 VA Low voltage DC power supply: 19 to 64 VDC, 13.4 W 	<ul style="list-style-type: none"> High voltage AC power supply: 85 to 264 VAC, 50/60 Hz, 28.8 VA Low voltage AC power supply: 52 to 75 VAC, 50/60 Hz, 21.6 VA Low voltage DC power supply: 19 to 64 VDC, 13.4 W
Current Consumption	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Ambient Temperature	<ul style="list-style-type: none"> 'Device: -40 to +60°C (-40 to +140°F) Display Module: -20 to +70°C (-4 to +158°F) 	<ul style="list-style-type: none"> 'Device: -40 to +60°C (-40 to +140°F) Display Module: -20 to +70°C (-4 to +158°F)
Process Temperature	<ul style="list-style-type: none"> '-40 to +200°C (-40 to +392°F) 	<ul style="list-style-type: none"> -40 to +200°C (-40 to +392°F)
Standard Range	<ul style="list-style-type: none"> Calibration Range: 30 m (98 ft) Maximum Range: Depending upon configuration choices – 70 m (230 ft) For calibration to regulatory standards – 30 m (98 ft) 	<ul style="list-style-type: none"> Calibration Range: 30 m (98 ft) Maximum Range: Depending upon configuration choices 0.8 to 20 m (2.6 to 66 ft) 0.8 to 30 m (2.6 to 98 ft) 0.8 to 40 m (2.6 to 131 ft)
Wiring	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Communications Output Options	<ul style="list-style-type: none"> MODBUS RS-485, HART, V1, WM550 	<ul style="list-style-type: none"> MODBUS RS-485, HART, V1, WM550
Switch Output Options	<ul style="list-style-type: none"> 2, 4, 6 relay out 	<ul style="list-style-type: none"> 2, 4, 6 relay out
Approvals	<ul style="list-style-type: none"> FM, IEC Ex, ATEX, EAC, WHG 	<ul style="list-style-type: none"> FM, IEC Ex, ATEX, EAC, WHG
SIL Rating	<ul style="list-style-type: none"> SIL 2/3 according to IEC 61508 	<ul style="list-style-type: none"> SIL 2/3 according to IEC 61508

Applications		
Custody Transfer	X	X
Stilling Well		X
Free Space	X	
Open Air		
Floating Roof		
Buffer Tanks		
Reactor & Mixing Tanks		
Asphalt Tank		
Overfill Prevention	X	X