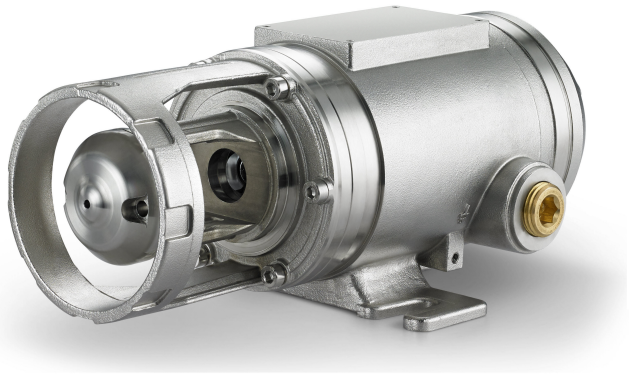
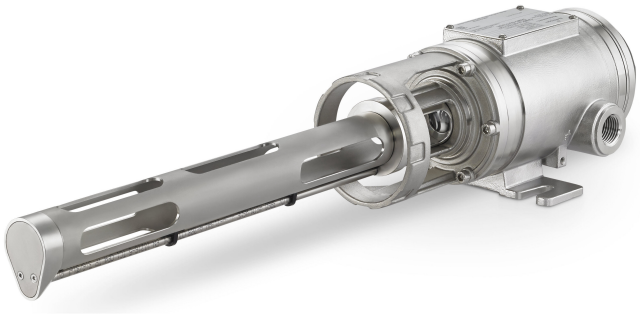
Reference Manual
MS-00809-0300-3625, Rev AA
March 2025

Rosemount™ 625IR Modbus





ROSEMOUNT™

EMERSON™

Contents

1 Scope and purpose of the document

This guide provides a quick overview of how to use Modbus software for basic configuration, monitoring, and troubleshooting of the 625IR via the Modbus client/server protocol.

2 Customer Config Engineer Level

This section contains the relevant register for customer diagnostics.

Address	Address (hex)	Data type	Length (register)	Description	Read access	Write access
1200	04B0	float	2	Indicator Alarm level 1	Operator	Engineer
1202	04B2	float	2	Indicator Alarm level 2	Operator	Engineer
1204	04B4	float	2	NAMUR Failure current	Operator	Engineer
1206	04B6	float	2	NAMUR Func. check current	Operator	Engineer
1208	04B8	float	2	NAMUR Out of spec current	Operator	Engineer
1210	04BA	float	2	NAMUR Maint.req current	Operator	Engineer
1212	04BC	uint16	1	Overrange signaling	Operator	Engineer
1213	04BD	uint16	1	Field zeroing	Operator	Engineer
1214	04BE	uint16	1	Calibration ack	Operator	Engineer
1215	04BF	float	2	Loop test current	Operator	Engineer
1217	04C1	uint16	1	Default access level	Operator	Engineer
1218	04C2	uint16	1	Indicator mode	Administrator	Administrator
1219	04C3	float	2	Dead band limit	Administrator	Administrator

2.1 Indicator Alarm level 1 and 2

The two trigger points on which to indicate gas alarm on the indicator, given in percent factor full scale.

Level 1 Valid values <0.15,Level 2 value>

Level 2 Valid values <Level 2 value, 1.0]

Default Level 1: 0.2

Default Level 2: 0.5

2.2 NAMUR signaling currents

The configured current levels for signaling the various NAMUR statuses, as values of mA. Valid range: <1.0 mA, 3.6mA>

Func. check, out of spec, and maint. Req signalling can be turned off individually by writing 0 to the corresponding register.

The configured current levels must always be ordered in highest to lowest criticality with increasing current levels.

Valid values:

Failure: Higher than 1.0, lower than func.check, out of spec, and Maint.req. (if either of them are set to anything other than 0), and lower than 3.6.

Func. check: 0, or Higher than Failure, and lower than out of spec, and Maint.req. (if either of them are set to anything other than 0), and lower than 3.6.

Out of spec: 0, or Higher than Failure and Func.Check (if not set to 0), and lower than Maint.Req (if not set to 0) and lower than 3.6

Maint.Req: 0, or Higher than Failure and Func.Check and Out of Spec (if any of them are set to anything other than 0), and lower than 3.6

2.3 Overrange signaling

Valid values	Functionality
0	Clips current out at 20.25mA
144	If current out passes 20.25mA, force current loop to 21mA

2.4 Field zero adjustment

Valid values	Functionality
0 (Read only)	No calibration ongoing
1 (Write only)	Cancel field zero method
80	Read: Zero adjustment ongoing. Write: Start zero adjustment.

2.5 Param Ack

Acknowledge field zero method.

Valid values	Functionality
0	Idle
10 (Read only)	Calibration values ready
20	Read: Storing to eeprom ongoing Write: Acknowledge calibration values
30 (Write only)	Invalidate calibration values

2.6 Loop test current

Start loop test mode. Sets the current loop to the value in mA, written to the register for one minute before timing out. Returns to zero when timed out (10 minutes).

Valid values	Functionality
0 (Read only)	Current loop test not running

Valid values	Functionality
[0.5 mA, 20.0mA]	Read: Current loop test active, outputting this value Write: Force the current loop to this level for 60 more seconds.

2.7 Default access level

Set the access level that the detector starts up with.

Valid values	Access level
1	Operator
2	Engineer
3 (Read only)	Administrator
4 (Read only)	OEM SU
5 (Read only)	Factory

3 Customer Config Administrator Level

Address (Dec)	Description	Read access	Write access
1218	Indicator mode	Administrator	Administrator
1219	Dead band limit	Administrator	Administrator

3.1 Indicator Mode

Valid values	Functionality
0	Turn off indicator
16	Indicator mode 1
32	Indicator mode 2

Indicator mode 1 is harmonized with ATEX standard 60079-29-1. Red indicator is lit if gas measurement is above any of the two Alarm levels.

Indicator mode 2 is equivalent to mode 1, with the addition that gas levels above Alarm level 2 makes the indicator flash red.

3.2 Dead band limit

The value in *percent factor full scale* - under which the detector will suppress the amplitude of noise according to an exponential function. Valid values: [0,0.1] Default: 0.02

3.3 Dead band on/off

Turn on or off the dead band suppression. Valid values: 0 and 90 (off and on).

3.4 Current loop clipping limit

The value in mA - under which the detector will suppress the amplitude of any negative gas measurement value when controlling the current loop. Valid values: [3.75,3.9] Default: 3.75

3.5 Number of span indices

For Non-VOL-detectors, the number of available definitions of LEL that the customer can choose from.

3.6 Span table index

The index of the selected sub unit/LEL definition. Representation is given in the identity table, under 1162-1171; Upper range unit, Unit source and Upper range (%VOL). For configuration not listed below, do not change this value.

Detector configuration	Valid values
Methane %LEL	0: 4.40% VOL ISO 1: 4.40% VOL IEC 2: 5.00% VOL NFPA 3: 5.30% VOL USCG
Propane %LEL	0: 1.7% VOL ISO 1: 1.7% VOL IEC 2: 2.1% VOL NFPA 3: 2.1% VOL USCG

3.7 Trigger software reset

Writing 90 to this register will trigger a software reset.

Address (Dec)	Description	Read access	Write access
1226	Trigger software reset, will force 625IR to exit loop	Administrator	Administrator

MS-00809-0300-3625
Rev. AA
2025

For more information: **Emerson.com/global**

ROSEMOUNT™

EMERSON™