

RMA805 Enraf FlexLine Remote Indicator Quick Start Installation Guide

34-ST-25-66, Revision 3, September 2022

This document provides a procedure for the Installation of Honeywell's RMA805 Enraf FlexLine Remote Indicator.

It provides a means of remote-mounting a display that is associated with a Honeywell Enraf FlexLine Gauge.

For full details refer to the manuals listed below for user Interface (HMI) operation, Installation, configuration, maintenance, parts, and safety and approvals etc. including options

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Documentation

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URL QR Code

<https://www.hwll.co/TankStorageDocs>



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Installation and Startup

Installation Site Evaluation

Evaluate the site selected for the RMA805 Enraf FlexLine Remote Indicator installation with respect to the process system design specifications and Honeywell's published performance characteristics for your particular model. Some parameters that you may want to include in your site evaluation are:

- Environmental Conditions:
 - Ambient Temperature
 - Relative Humidity
- Potential Noise Sources:
 - Radio Frequency Interference (RFI)
 - Electromagnetic Interference (EMI)
- Vibration Sources
 - Motorized System Devices (e.g., pumps)

Display Installation Precautions

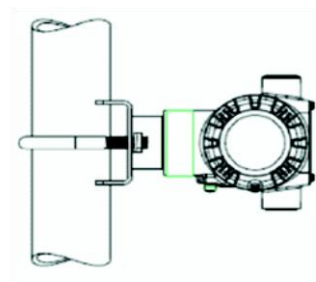
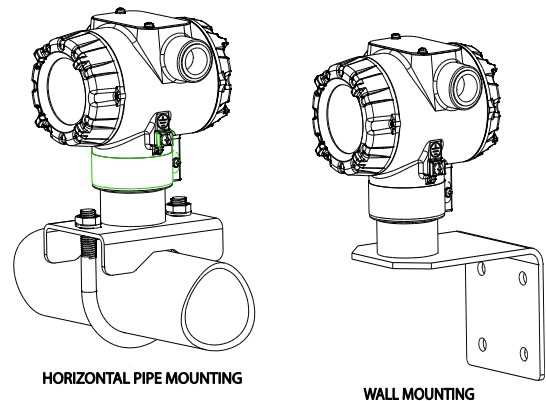
Temperature extremes can affect display quality. The display can go blank if the temperature is below -20°C or above +70°C; however, this is only a temporary condition. The display will again be readable when temperatures return to within operable limits.

Mounting Remote Indicator

Summary

Remote Indicator models can be attached to a two-inch (50 millimeter) vertical or horizontal pipe using Honeywell's optional pipe mounting bracket. Honeywell's optional wall mounting bracket is also shown below.

Figure 1 shows typical bracket-mounted installations.



VERTICAL PIPE MOUNTING

Figure 1: Typical Bracket Mounted Installations

Mounting Dimensions

Refer to Honeywell drawing number 50094836 for detailed electronic housing dimensions. Refer to Honeywell drawing numbers 50095917 for detailed pipe mounting dimensions and 50095918 for detailed wall mounting dimensions. Abbreviated overall dimensions are also shown on the Specification Sheets for the Remote Indicator models. This section assumes that the mounting dimensions have already been taken into account and the mounting area can accommodate the Remote Indicator.

Bracket Mounting

If you are using an optional bracket, start with Step 1.

1. Align the two mounting holes in the Remote Indicator with the two slots in the mounting bracket and assemble the (2) M8 hex cap screws, (2) lockwashers and (2) flat washers provided. Rotate Remote Indicator assembly to the desired position and torque the M8 hex cap screws to 27.0 Nm/20.0 Lb-ft maximum.

Pipe Mount Option: Refer to Figure 2

2. Position the bracket on a 2-inch (50.8 mm) horizontal or vertical pipe, and install a "U" bolt around the pipe and through the holes in the bracket. Secure the bracket with the nuts, flat washers and lock washers provided.
3. Wall Mount Option: Position the bracket on the mounting surface at the desired location and secure the bracket to the mounting surface using the appropriate hardware (Wall mounting hardware requirements to be determined and supplied by the end user)

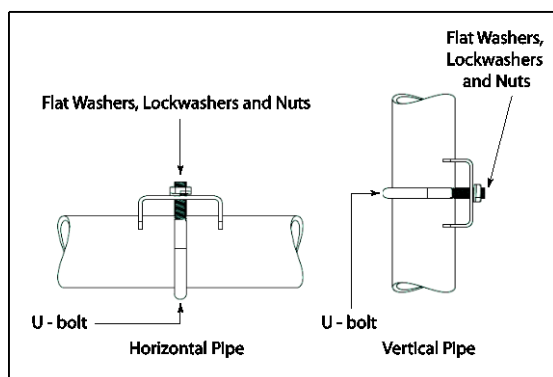


Figure 2: Pipe Mounting Bracket Secured to a Horizontal or Vertical Pipe

Wiring the RMA805 Enraf FlexLine Remote Indicator

Overview

The Remote Indicator must be connected to the local HART compatible bus of the Enraf Smarttradar FlexLine or the Enraf SmartServo 954.

The Remote Indicator has 3 terminals. Following table provides the connection details:

| Terminal | Description |
|----------|-------------|
| 1 | Loop + |
| 2 | Loop - |
| 3 | Not used |

The screw terminals are suitable for wirings up to 16AWG (1.3 mm²) Shielded, twisted-pair cable such as Belden 9318 or equivalent must be used for all wiring.

The cable shield must be connected at only one end of the cable. Connect it to the FlexLine Gauge side and **leave the shield insulated at the Remote Indicator side.**

Note: If solid core wire is used strip insulation 1/4 in (6 mm). Once inserted under the square washer the stripped portion should be contained under the square washer. If multi-stranded wire is used, a ferrule is to be used and the stripped wire should be in the insulated portion of the ferrule. The ferrule can be also be used on the solid core wire.

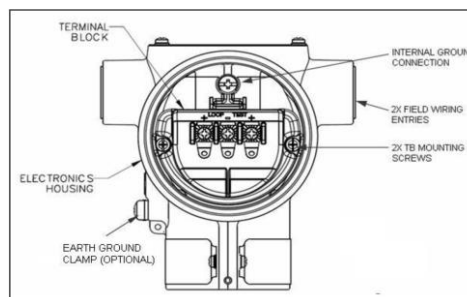


Figure 3: Two Position FF Terminal Block

Electrical Wiring

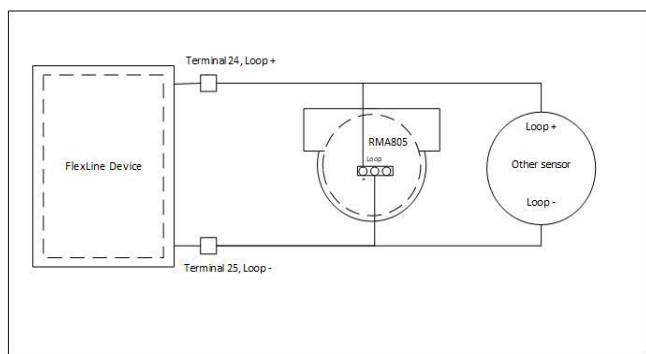
The Remote Indicator shall be connected to the Loop + and Loop - terminals of the FlexLine Gauge. Typically, these are terminals 24 and 25. See the installation manual of the FlexLine Gauge for more information.

It is possible that other devices such as a VITO temperature convertor and a pressure transmitter must be connected to the same loop. **All devices must be wired in parallel. Ensure all devices are set to 4 mA digital multi-drop mode before connecting to the FlexLine Gauge.** See Figure 4 for a connection diagram.



ATTENTION

Wiring must comply with local codes, regulations and ordinances. Grounding may be required to meet various approval body certifications, for example CE conformity. Refer to Appendix A of this document for details.



Wiring Procedure

1. See Figure 3, for parts locations. Loosen the end cap lock using a 1.5 mm Allen wrench.
2. Remove the end cap cover from the terminal block end of the electronics housing.
3. Feed loop power leads through one end of the conduit entrances on either side of the electronics housing. The Remote Indicator accepts up to 16 AWG wire.
4. Plug the unused conduit entrance with a conduit plug appropriate for the environment.
5. Torque terminal screws to 0.6 Nm (5.3 lbf.in) to 0.8 Nm (7.0 lbf.in).
6. Connect the Loop Power wiring shield to earth ground only at the power supply side.
7. Replace the end cap and secure it in place being careful not to damage the wires.

Explosion-Proof Conduit Seal



WARNING


When installed as explosion proof in a Division 1 Hazardous Location, keep covers tight while the Remote Indicator is energized. Disconnect power to the Remote Indicator in the non-hazardous area prior to removing end caps for service.

When installed as non-incendive equipment in a Division 2 hazardous location, disconnect power to the Remote Indicator in the non-hazardous area, or determine that the location is non-hazardous before disconnecting or connecting the Remote Indicator wires.

Remote Indicator installed as explosion proof in Class I, Division 1, Group A Hazardous (classified) locations in accordance with ANSI/NFPA 70, the US National Electrical Code, with 1/2 inch conduit do not require an explosion-proof seal for installation. If 3/4 inch conduit is used, a LISTED explosion proof seal must be installed in the conduit, within 18 inches (457.2 mm) of the Remote Indicator.

Jumper Settings

On the Remote Indicator there is a failsafe jumper and a write protect jumper behind the display on the Communication Module. The top jumper is the failsafe jumper. It is highly recommended to put the failsafe jumper to DOWN (Downscale). The bottom jumper sets the write protect.

|  ATTENTION: Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices. | |
|--|---|
| Step | Action |
| 1 | Ensure the Enraf FlexLine Gauge is switched off or that the Remote Indicator is disconnected. |
| 2 | Loosen the end-cap lock, and unscrew the end cap from the Electronics side of the Transmitter housing. |
| 3 | Carefully depress the tabs on the sides of the Display Module and pull it off. |
| 4 | Set the write protect jumper and the failsafe jumper to the desired behavior. See Table 1 for jumper positioning. |
| 5 | Reinstall the Display Module. Carefully line up the display and interface connector and snap it into place. Verify that the two tabs on the sides of the display latch. |
| 6 | Screw on the end cap and tighten the end-cap lock. |
| 7 | Reconnect the Remote Indicator or switch on the Enraf FlexLine Gauge. |





| Image | Description |
|---|---|
|  | Failsafe = DOWN (3.8mA) Write Protect = OFF (Not Protected) |
|  | Failsafe = UP (21.8mA) NOT RECOMMEND Write Protect = OFF (Not Protected) |
|  | Failsafe = DOWN (3.8mA) Write Protect = ON (Protected) |
|  | Failsafe = UP (21.8mA) NOT RECOMMEND Write Protect = ON (Protected) |

Table 1: Jumper settings

Configuration Guide

The Remote Indicator 3-button interface provides user interface and operation capability without opening the Remote Indicator. The user must press **↓** button to call up the Main Menu. To exit the Main Menu and return to the PV display screen, select **<EXIT>**. Use the **↓** button to scroll through the list of menu items. Press the **↓** button to select an item for data entry or activation. When an item is selected for data entry or activation, the cursor is positioned over the left-most digit to allow editing of the value. No action is taken against a menu item until the **↓** button is pressed.

| Level 1 | Level 2 | Level 3 |
|----------------------|--------------------------|-------------------------|
| <Exit> | n/a | n/a |
| Diagnostics | Critical Non-Critical | For details see table 6 |
| Display Setup | LCD Contrast | For details see table 5 |
| Device Setup | HART Setup Parameters | For details see table 4 |
| Information | Display Comm Module | For details see table 3 |

Table 2: Main Menu Structure

| <Return> Return to the Level 1 menu | | | | |
|-------------------------------------|--------------|---------------------|--------------------------------|--|
| LCD Contrast | <Return> | | | |
| | Set Contrast | 0 – 9 Default: 5 | Adjust the LCD contrast level. | Press ↓ to edit, ↑ or ↓ to select number and ↓ to enter. |

Table 3: Display Setup Menu

| <Return> Return to the Level 1 menu | | | | |
|-------------------------------------|--------------|----------------------|--|--|
| Parameters | <Return> | | | |
| | HART Address | 7 or 8 Default: 7 | HART polling address | Press ↓ to edit, ↑ or ↓ to select number and ↓ to enter. |
| Standby Time | <Return> | | | |
| | Standby Time | 0 – 15 Default: 5 | Enter the time in minutes until the device automatically goes online once in standby. 0 means the device does NOT automatically go online. | Press ↓ to edit, ↑ or ↓ to select number and ↓ to enter. |

Table 4: Device Setup Menu

| <Return> Return to the level 1 menu | | | |
|-------------------------------------|------------------|--|-----------|
| Display | <Return> | | |
| | Firmware Version | The firmware version of the Display Module | Read Only |
| Comm Module | <Return> | | |
| | Firmware Version | The firmware version of the Communication Module | Read Only |

Table 5: Information Menu




| <Return> Return to the Level 1 menu | | | |
|-------------------------------------|------------------|----------------------|---|
| Critical | <Return> | | |
| | Comm Module | OK FAULT | FAULT: There is a problem with the Communications Module. |
| Non-Critical | <Return> | | |
| | Supply Voltage | OK LOW HIGH | LOW: Supply voltage is below the low specification limit HIGH: Supply voltage is above the high specification limit. |
| | Comm Module Temp | OK OVER TEMP | OVER TEMP: Communications Module temperature is greater than 85°C. |
| Display Setup | <Return> | | |
| | Display Setup | OK NVM CORRUPT | NVM CORRUPT: The Display setup memory is corrupted. |

Table 6: Diagnostic Menu

All Diagnostics menu items are Read Only

Appendix A. PRODUCT CERTIFICATIONS

A1. Hazardous Locations Certifications

| MSG CODE | AGENCY | TYPE OF PROTECTION | Electrical Parameters | Ambient Temperature |
|----------|--------|---|-----------------------|---|
| C | ATEX | Flame-proof and Dust:  II 2 G Ex db IIC T6..T5 Gb II 2 D Ex tb IIIC T 95°C Db | Note 1 | T6: -50°C to 65°C T95°C, T5: -50°C to 85°C |
| | | Intrinsically Safe:  II 1 G Ex ia IIC T4 Ga | Note 2 | -50°C to 70°C |
| | | Non-Incendive  II 3 G Ex ec IIC T4 Gc | Note 1 | -50°C to 85°C |
| | | Enclosure: Type IP66/IP67 | ALL | ALL |
| | | STANDARDS: EN 60079-0: 2018; EN 60079-1: 2014; EN 60079-11: 2012; EN 60079-31: 2014; EN 60079-7: 2015/A1: 2018; | | |
| D | IECEx | Flame-proof: Ex db IIC T6..T5 Gb Ex tb IIIC T 95°C Db | Note 1 | T6: -50°C to 65°C T95°C, T5: -50°C to 85°C |
| | | Intrinsically Safe: Ex ia IIC T4 Ga | Note 2 | -50°C to 70°C |
| | | Non-Incendive Ex ec IIC T4 Gc | Note 1 | -50°C to 85°C |
| | | Enclosure: IP66/ IP67 | ALL | ALL |
| | | STANDARDS: IEC 60079-0: 2017 IEC 60079-1: 2014; IEC 60079-11: 2011; IEC 60079-7: 2015/A1: 2018; IEC 60079-31: 2013 | | |

| MSG CODE | AGENCY | TYPE OF PROTECTION | Electrical Parameters | Ambient Temperature |
|---|--------|--|-----------------------|--|
| K | cCSAus | Explosion proof: Class I, Division 1, Groups A, B, C, D; T6..T4 | Note 1 | T6: -50°C to +65°C T4 T5: -50°C to 85°C |
| | | Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; T4 Class I Zone 1 Ex db IIC T4 Gb Ex db IIC T4 Gb | | |
| | | Zone 21 Ex tb IIIC T 95°C Db Ex tb IIIC T 95°C Db | | |
| | | Intrinsically Safe: CSA 14.2689056 Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Ex ia IIC T4 Ga | Note 2 | -50°C to 70°C |
| | | Non-Incendive Class I, Division 2, Groups A, B, C, D; T4 Class I Zone 2 Ex nA IIC T4 Gc Ex nA IIC T4 Gc | Note 1 | -50°C to 85°C |
| | | Enclosure: 4X/ IP66/ IP67 | ALL | ALL |
| Standards: CSA C22.2 No. 0: 2015; CSA C22.2 No. 30: 2016; CSA C22.2 No. 94-M91; CSA C22.2 No. 25: 2017; CSA C22.2 No. 61010-1: 2017; CSA-C22.2 No. 157: 2016; C22.2 No. 213: 2017; C22.2 No. CSA 60079-0:2015; C22.2 No. 60079-1: 2016; C22.2 No. 60079-11: 2014; C22.2 No. 60079-15: 2016; C22.2 No. 60079-31: 2015; ANSI/ ISA12.12.01-2017; ANSI/ ISA 61010-1: 2016; ANSI/ UL 60079-0: 2013; ANSI/ UL 60079-1: 2015; ANSI/ UL 60079-11: 2014; ANSI/ UL 60079-15: 2013; ANSI/ UL 60079-31: 2015; FM 3600: 2011; FM 3615: 2006; FM Class 3616: 2011; ANSI/ UL 913: 2015; UL 916: 2015; ANSI/ UL 12.27.01: 2017; ANSI/UL 50E: 2015 | | | | |

| MSG CODE | AGENCY | TYPE OF PROTECTION | Electrical Parameters | Ambient Temperature |
|----------|--------|---|-----------------------|---------------------|
| G | NEPSI | Flame-proof: Ex d IIC Ga/Gb T4 Ex tb IIIC Db T 85°C | Note 1 | -20°C to 85°C |
| | | Intrinsically Safe: Ex ia IIC Ga T4 | Note 2 | -20°C to 70°C |
| | | Nonincendive: Ex nA IIC Gc T4 | Note 1 | -20°C to 85°C |
| | | Enclosure: IP 66/67 | All | All |

Notes

- Operating Parameters:**
Voltage= 12 to 42 V Current= 25 mA
- Intrinsically Safe Entity Parameters**
For details see Control Drawing, 50089981.

32302406
 Revision: F

EU DECLARATION OF CONFORMITY

We,

Honeywell International Inc.
 Honeywell Field Solutions
 512 Virginia Drive
 Fort Washington, PA 19034 USA

declare under our sole responsibility that the following products,

RMA800 – Smart Series Remote Meter Series
RMA801 Analog/ DE Series
RMA803 Foundation Fieldbus Series
RMA805 with ENRAF FLEXLINE Communication Series

to which this declaration relates, is in conformity with the provisions of the European Community Directives, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and when applicable or required, a European Community notified body certification, as shown in the attached schedule.

The authorized signatory to this declaration, on behalf of the manufacturer, and the Responsible Person is identified below.

Owen J. Murphy
 Product Safety & Approvals Engineering
 Issue Date: 31 July 2020

SCHEDULE
32302406
 Revision: F

EMC Directive (2014/30/EU)

EN 61326-1:2013 Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements.

Overview of EMC Testing
 Equipment Tested (EUT): RMA803 Foundation Fieldbus
 RMA801 Analog/ DE

Summary of Tests Performed:

| PORT | TEST | STANDARD | CRITERIA (IEC 61326-1) | RESULTS |
|---|--------------------------------------|---------------|---|------------------|
| Enclosure | Radiated Emission | CISPR 11 | Group1, Class A 30 – 230 MHz: 40 dB 230 – 1000 MHz: 47 dB | PASS |
| | ESD Immunity | IEC61000-4-2 | +/- 4KV Contact +/- 8KV Air | PASS |
| | EM Field- RF Radiated Susceptibility | IEC61000-4-3 | 10 V/m- 80 MHz to 2GHz 1 V/m- 2.0 GHz to 2.7 GHz | PASS |
| | 50Hz/60Hz Magnetic Field Immunity | IEC 6100-4-8 | 30 A/m | N/A 1 |
| DC Power | EFT(B) Immunity | IEC61000-4-4 | +/- 1KV | PASS |
| | Surge Immunity | IEC61000-4-5 | +/- 1KV | PASS |
| | RF Conducted Susceptibility | IEC61000-4-6 | 10 V/m 150 kHz to 80 Mhz | PASS |
| I/O Signal/ Control (Including Earth Lines) | EFT(Burst) Immunity | IEC61000-4-4 | +/- 1KV | 2 |
| | Surge Immunity | IEC61000-4-5 | +/- 1KV | 2 |
| | RF Conducted Susceptibility | IEC61000-4-6 | 10 V/m 150 kHz to 80 Mhz | 2 |
| AC Power | Voltage Dip | IEC61000-4-11 | 0% during 1 Cycle 40% during 10-12 Cycles 70% during 25-30 Cycles | N/A ³ |

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SCHEDULE

32302406

Revision: F

| PORT | TEST | STANDARD | CRITERIA (IEC 61326-1) | RESULTS |
|------|-----------------------------|---------------|---------------------------|------------------|
| | Short Interruptions | IEC61000-4-11 | 0% during 250-300 Cycles | N/A ¹ |
| | EFT(Burst) Immunity | IEC61000-4-4 | 2KV | N/A ² |
| | Surge Immunity | IEC61000-4-5 | 1KV/ 2KV | N/A ³ |
| | RF Conducted Susceptibility | IEC61000-4-6 | 3V | N/A ³ |

1. There is no magnetic sensitive circuitry.
2. Done as part of the DC Power Testing.
3. Product is DC Powered.

3 of 4

SCHEDULE

32302406

Revision: F

ATEX Directive (2014/34/EU)

EU-Type Certificate No: SIRA 14ATEX2147X Protection: Intrinsically Safe, and Flameproof

Equipment Group II Category 1 G

Ex ia IIC T4 Ga (Ta= -20°C TO +70°C)

FISCO Field Device (RMA803 Series only)

Ex ia IIC T4 Ga (Ta= -20°C TO +70°C)

Equipment Group II Category 2 G D

Ex db IIC T6..T5 Gb (T6= -20°C TO +65°C; T5= -20°C TO +85°C)

Ex tb IIIC T95°C Db (Ta= -20°C TO +85°C)

Harmonized Standards :

EN 60079-0: 2018 EN 60079-1: 20014 EN 60079-11 : 2012

EN 60079-31: 2014

Type Certificate No: SIRA 14ATEX4148X

Protection: Non Sparking

Equipment Group II Category 3 G

Ex ec IIC T4 Gc (Ta= -20°C TO +85°C)

Ex ic IIC T4 Ga (Ta= -20°C TO +70°C)

FISCO Field Device (RMA803 Series only)

Ex ic IIC T4 Ga (Ta= -20°C TO +70°C)

Harmonized Standards :

EN 60079-0: 2018 EN 60079-7: 2015/ A1: 2018 EN 60079-11 : 2012

ATEX Notified Body for EC Type Certificates

CSA Group Netherlands B.V., [Notified Body Number: 2813]

Utrechtseweg 310 (842),

6812 Arnhem

Netherlands

ATEX Notified Body for Quality Assurance

DEKRA Certification B.V. [Notified Body Number: 0344]

Meander 1051

6825 Mj Arnhem

The Netherlands

Restriction of Hazardous Substances Directive (RoHS) (2011/ 65/ EU)

EN50581: 2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

4 of 4

A2 Marking ATEX Directive

a. General

The following information is provided as part of the labeling of the Remote Indicator:
Name and Address of the manufacturer

The serial number of the Remote Indicator is located on the Meter Body data-plate. The first two digits of the serial number identify the year (12) and the second two digits identify the week of the year (23); for example, 1223xxxxxxx indicates that the product was manufactured in 2012, in the 23rd week.

b. Apparatus Marked with Multiple Types of Protection

The user must determine the type of protection required for installation the equipment. The user shall then check the box [] adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, the equipment shall not then be reinstalled using any of the other certification types.

c. WARNINGS and Cautions

Non-Incendive / Non-Sparking (Division 2 and Zone 2 Environments):

WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR

SUITABILITY FOR CLASS I, DIVISION 2

Intrinsically Safe (Divisions 1, Zone 1 and Zone 2 Environments):

WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR

INTRINSIC SAFETY.

WARNING – DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT.

Explosion-Proof (Division 1 and Zone 1 Environments):

WARNING – DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT.

WARNING – DO NOT OPEN WHEN ENERGIZED

“OPEN CIRCUIT BEFORE REMOVING COVER”

Flameproof (Division 1 and Zone 1 Environments):

WARNING – DO NOT OPEN WHEN ENERGIZED

General Requirements / Increased Safety (Zone 1):

WARNING – DO NOT OPEN WHEN ENERGIZED

WARNING – OPEN CIRCUIT BEFORE REMOVING COVER

All Protective Measures:

WARNING: FOR CONNECTION IN AMBIENTS ABOVE 60°C USE WIRE RATED 105°C

A.3 Conditions of Use” for Ex Equipment”, Hazardous Location Equipment or “Schedule of Limitations”:

- Consult the manufacturer for dimensional information on the flameproof joints for repair.
- Painted surface of the RMA 800 series may store electrostatic charge and become a source of ignition in applications with a low relative humidity less than approximately 30% relative humidity where the painted surface is relatively free of surface contamination such as dirt, dust or oil. Cleaning of the painted surface should only be done with a damp cloth.
- The ambient temperature range and applicable temperature class of the equipment is as follows:

RMA805 series: T4 for -50°C < Ta < 70°C
- The RMA800 series enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be considered during installation and use to prevent impact or friction to avoid impact.
- If a charge-generating mechanism is present, the exposed metallic part on the enclosure is capable of storing a level of electrostatic charge that could become incendive for IIC gases. Therefore, the user/installer shall implement precautions to prevent the buildup of electrostatic charge, e.g. earthing the metallic part. This is particularly important if the equipment is installed in a zone 0 location.
- On installation, the RMA800 series shall be provided with supply transient protection external to the apparatus such that the voltage at the supply terminals of the RMA800 series does not exceed 140% of the voltage rating of the equipment. However when an RMA805 is connected to a SmartRadar FlexLine or to a SmartServo 954 the supply transient protection is included in the SmartRadar FlexLine or SmartServo 954.

A.4 Control Drawing

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| PRE REL | REVISION & DATE | APPD |
|---------|-----------------|------|
| IGS | 5/26/2020 | |
| F | ECN 2020-2672 | OJM |

RMA 800 Series Remote Meter

Analog, DE Communications, Foundation Fieldbus and ENRAF FLEXLINE Communications

- Intrinsically safe installation shall be in accordance with:
 - FM (USA): ANSI/NFPA 70, NEC Articles 504 and 505.
 - CSA (Canada): Canadian Electrical Code (CEC), part I, section 18.
 - ATEX: Requirements of EN 60079-14, 12.3 (See also 5.2.4).
 - IECEx: Requirements of IEC 60079-14, 12.3 (See also 5.2.4).
- ENTITY approved equipment shall be installed in accordance with the manufacturer's Intrinsic Safety Control Drawing.
- The Intrinsic Safety ENTITY concept allows the interconnection of two ENTITY Approved intrinsically safe devices with ENTITY parameters not specifically examined in combination as a system when:

$U_o, V_o, \text{ or } V_t \leq U_i \text{ or } V_{max}; I_o, I_{sc}, \text{ or } I_t \leq I_i \text{ or } I_{max}; C_a \text{ or } C_o \geq C_i + C_{cable}; L_a \text{ or } L_o \geq L_i + L_{cable}; P_o \leq P_i$

Where two separate barrier channels are required, one dual-channel or two single-channel barriers may be used, where in either case, both channels have been Certified for use together with combined entity parameters that meet the above equations.
- System Entity Parameters:

RMA 800 Remote Meter: $V_{max} V_o$ or $U_o, I_{max} I_o$ or I_o ;
 RMA 800 Remote Meter: $C_i + C_{cable} \leq C_{control} Apparatus Ca$;
 RMA 800 Remote Meter: $L_i + L_{cable} \leq C_{control} Apparatus La$.
- When the electrical parameters of the cable are unknown, the following values may be used:
 Capacitance: 197pF/m (60 pF/ft)
 Inductance: 0.66μH/m (0.020μH/ft).
- Control equipment that is connected to Associated Equipment must not use or generate more than 250 V.
- Associated equipment must be FM, CSA ATEX or IECEx (depending on location) listed. Associated equipment may be installed in a Class I, Division 2 or Zone 2 Hazardous (Classified) location if so approved.
- Non-Galvanically isolated equipment (grounded Zener Barriers) must be connected to a suitable ground electrode per:
 - FM (USA): NFPA 70, Article 504 and 505. The resistance of the ground path must be less than 1.0 ohm.
 - CSA (Canada): Canadian Electrical Code (CEC), part I, section 10.
 - ATEX: Requirements of EN 60079-14, 12.2.4.
 - IECEx: Requirements of IEC 60079-14, 12.2.4.
- Intrinsically Safe DIVISION 1/ Zone 0 WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR USE IN HAZARDOUS LOCATIONS.
- Division 2/ Zone 2: WARNING: DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT.
- NO REVISION OF THIS CONTROL DRAWING IS PERMITTED WITHOUT AUTHORIZATION FROM THE AGENCIES LISTED.
- For release approvals see ECO-0103558.

| | | |
|---------------------------|-------------------|----------------------------------|
| DRAWN | | Honeywell |
| CHECKED | | |
| DEV ENG | | CONTROL DRAWING |
| MFG ENG | | RMA 800 SERIES REMOTE METER |
| QA ENG | | DIVISIONS 1 AND 2 / ZONE 0 AND 2 |
| TOLERANCE UNLESS NOTED | | |
| | A/A4 | 50089981 |
| MASTER FILE TYPE: MS WORD | ANGULAR DIMENSION | SCALE: None USED ON SH. 1 OF 4 |

RMA801, Analog/ DE Communications

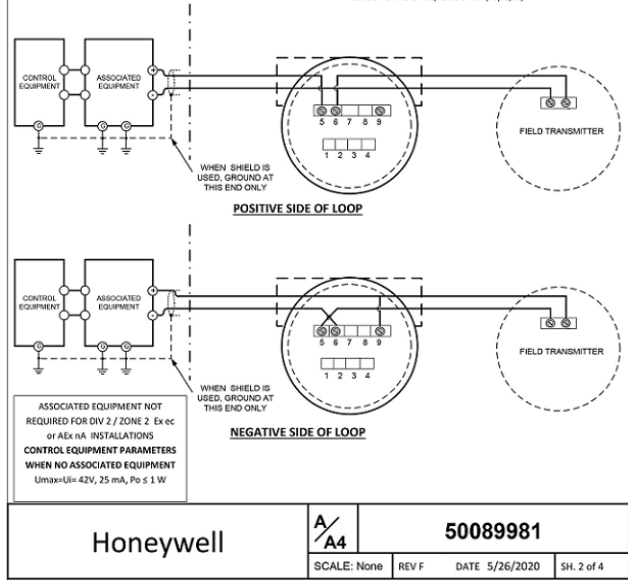
| ENTITY PARAMETERS "Ex ia" and Ex ic" | Associated Apparatus |
|---|--|
| $U_i \text{ or } V_{max} \leq 30V$ | $U_o, V_o \text{ or } V_t \leq 30V$ |
| $I_i \text{ or } I_{max} \leq 225 \text{ mA}$ | $I_o (I_{sc} \text{ or } I_t) \leq 225 \text{ mA}$ |
| $P_i \text{ or } P_{max} = 1W$ | $P_o \leq 1W$ |
| $C_i = 28.2nF$ | $C_a \text{ or } C_o \geq C_{cable} + C_{RMA800}$ |
| $L_i = 4\mu H$ | $L_a \text{ or } L_o \geq L_{cable} + L_{RMA800}$ |

Note: No Change in Parameters when Terminal 9, DE Communications is connected

NON-HAZARDOUS LOCATION

HAZARDOUS (CLASSIFIED) LOCATION

CLASS I, CLASS II, DIVISION 1, GROUPS A, B, C, D, E, F & G;
 ZONE 0 IIC & ZONE 2 IIC,
 CLASS I DIVISION 2, GROUPS A, B, C, D;



RMA803, Foundation Fieldbus

| ENTITY PARAMETERS "Ex ia" and Ex ic" | Associated Apparatus |
|---|--|
| $U_i \text{ or } V_{max} \leq 30V$ | $U_o, V_o \text{ or } V_t \leq 30V$ |
| $I_i \text{ or } I_{max} \leq 180 \text{ mA}$ | $I_o (I_{sc} \text{ or } I_t) \leq 180 \text{ mA}$ |
| $P_i \text{ or } P_{max} = 1W$ | $P_o \leq 1W$ |
| $C_i = 0 \text{ nF}$ | $C_a \text{ or } C_o \geq C_{cable} + C_{RMA800}$ |
| $L_i = 9 \mu H$ | $L_a \text{ or } L_o \geq L_{cable} + L_{RMA800}$ |

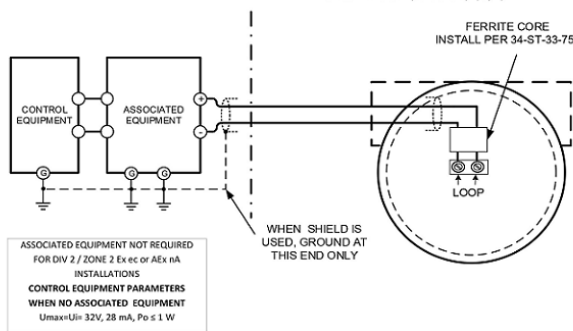
FISCO Parameters

| ENTITY PARAMETERS "Ex ia" and Ex ic" |
|---|
| $U_i \text{ or } V_{max} = 17.5V$ |
| $I_i \text{ or } I_{max} \leq 380 \text{ mA}$ |
| $P_i \text{ or } P_{max} \leq 5.32W$ |
| $L_i = 9 \mu H$ |
| $C_i = 0 \text{ nF}$ |

NON-HAZARDOUS LOCATION

HAZARDOUS (CLASSIFIED) LOCATION

CLASS I, CLASS II, DIVISION 1, GROUPS A, B, C, D, E, F & G;
 ZONE 0 IIC & ZONE 2 IIC,
 CLASS I DIVISION 2, GROUPS A, B, C, D;



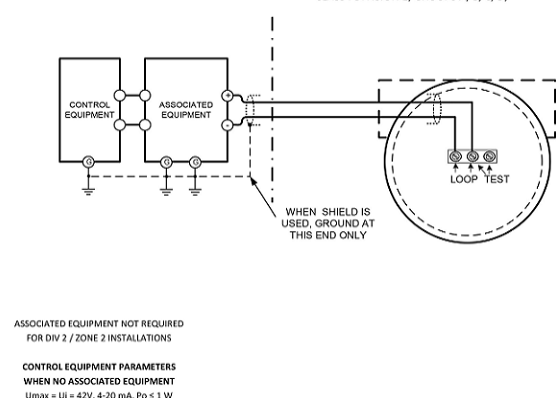
RMA805, ENRAF FLEXLINE COMMUNICATIONS

| ENTITY PARAMETERS | Associated Apparatus |
|---|--|
| $U_i \text{ or } V_{max} \leq 30V$ | $U_o, V_o \text{ or } V_t \leq 30V$ |
| $I_i \text{ or } I_{max} \leq 225 \text{ mA}$ | $I_o (I_{sc} \text{ or } I_t) \leq 225 \text{ mA}$ |
| $P_i \text{ or } P_{max} = 0.9W$ | $P_o \leq 0.9W$ |
| $C_i = 3.9 \text{ nF}$ | $C_a \text{ or } C_o \geq C_{cable} + C_{ST 800/ST 700}$ |
| $L_i = 0 \mu H$ | $L_a \text{ or } L_o \geq L_{cable} + L_{ST 800/ST 700}$ |

NON-HAZARDOUS LOCATION

HAZARDOUS (CLASSIFIED) LOCATION

CLASS I, DIVISION 1, GROUPS A, B, C, D, E, F & G;
 ZONE 0 IIC & ZONE 2 IIC,
 CLASS I DIVISION 2, GROUPS A, B, C, D;



Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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engine <http://bit.ly/2N5Vldi>

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For more information

To learn more about SmartLine Devices, visit <https://process.honeywell.com>

Or contact your Honeywell Account Manager

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