

Rosemount™ Clarity II T1056 Turbidimeter

Turbidity Measurement System



Essential instructions

Read this page before proceeding!

Your instrument purchase from Emerson is one of the finest available for your particular application. These instruments have been designed and tested to meet many national and international standards. Experience indicates that its performance is directly related to the quality of the installation and knowledge of the user in operating and maintaining the instrument. To ensure continued operation to the design specifications, read this Manual thoroughly before proceeding with installation, commissioning, operation, and maintenance of this instrument.

- Failure to follow the proper instructions may cause any one of the following situations to occur: loss of life, personal injury, property damage, damage to this instrument, and warranty invalidation.
- Ensure that you have received the correct model and options from your purchase order. Verify that this Quick Start Guide covers your model and options. If it does not, call 800 854 8257 or 949 757 8500 to request the correct Quick Start Guide.
- For clarification of instructions, contact your Rosemount representative.
- Follow all warnings, cautions, and instructions marked on and supplied with the product.
- Use only qualified personnel to install, operate, program, and maintain the product.
- Educate your personnel on the proper installation, operation, and maintenance of this product.
- Install equipment as specified in the installation instructions of the appropriate Reference Manual and per applicable local and national codes. Connect all products to the proper electrical and pressure sources.
- Use only factory documented components for repair. Tampering or unauthorized substitution of parts and procedures can affect the performance and cause unsafe operation of your process.
- All equipment doors must be closed, and protective covers must be in place unless qualified personnel are performing maintenance.

WARNING

Risk of electrical shock

Installation and servicing of this product may expose personnel to dangerous voltages.

Equipment protected throughout by double insulation.

Disconnect main power wired to separate power source before servicing.

Do not operate or energize instrument with case open.

Signal wiring within this box must be rated at least 240 V.

Non-metallic cable strain reliefs do not provide grounding between conduit connections. Use grounding type bushings and jumper wires.

Unused cable conduit entries must be securely sealed by non-flammable closures to provide exposure integrity in compliance with personal safety and environmental protection requirements. Unused conduit openings must be sealed with NEMA 4X or IP65 conduit plugs to maintain the ingress protection rating (IP65).

Electrical installation must be in accordance with the National Electrical Code (ANSI/NFPA-70) and/or any other national or local codes.

Operate only with front panel fastened and in place.

Proper use and configuration is the operator's responsibility.

⚠ WARNING

This product is not intended for use in the light industrial, residential, or commercial environments per the instrument's certification to EN50081-2.

⚠ CAUTION**Radio interference**

This product generates, uses, and can radiate radio frequency energy and thus can cause radio communication interference. Improper installation or operation may increase such interference. As temporarily permitted by regulation, this unit has not been tested for compliance within the limits of Class A computing devices, pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference.

Operation of this equipment in a residential area may cause interference, in which case the operator, at his own expense, will be required to take whatever measures may be required to correct the interference.

⚠ WARNING**Physical access**

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental to protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

Warranty

Seller warrants that the firmware will execute the programming instructions provided by Seller, and that the Goods manufactured or services provided by Seller will be free from defects in materials or workmanship under normal use and care until the expiration of the applicable warranty period. Goods are warranted for twelve (12) months from the date of initial installation or eighteen (18) months from the date of shipment by Seller, whichever period expires first. Consumables, such as glass electrodes, membranes, liquid junctions, electrolyte, O-rings, catalytic beads, etc. and services are warranted for a period of 90 days from the date of shipment or provision.

Products purchased by Seller for resale to Buyer ("Resale Products") shall carry only the warranty extended by the original manufacturer. Buyer agrees that Seller has no liability for Resale Products beyond making a reasonable commercial effort to arrange for procurement and shipping of the Resale Products.

If Buyer discovers any warranty defects and notifies Seller thereof in writing during the applicable warranty period, Seller shall, at its option, promptly correct any errors that are found by Seller in the firmware or Services, or repair or replace F.O.B. point of manufacture that portion of Goods or firmware found by Seller to be defective, or refund the purchase price of the defective portion of the Goods/Services.

All replacements or repairs necessitated by inadequate maintenance, normal wear and usage, unsuitable power sources, unsuitable environmental conditions, accident, misuse, improper installation, modification, repair, storage or handling, or any other cause not the fault of Seller are not covered by this limited warranty, and shall be at Buyer's expense. Seller shall not be obligated to pay any costs or charges incurred by Buyer or by any other party except as may be agreed upon in writing in advance by an authorized Seller representative. All costs of dismantling, reinstallation and freight and the time and expenses of Seller's personnel for site travel and diagnosis under this warranty clause shall be borne by Buyer unless accepted in writing by Seller.

Goods repaired and parts replaced during the warranty period shall be in warranty for the remainder of the original warranty period or ninety (90) days, whichever is longer. This limited warranty is the only warranty made by Seller and can be amended only in a writing signed by an authorized representative of Seller. Except as otherwise expressly provided in the Agreement, THERE ARE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR ANY OTHER MATTER WITH RESPECT TO ANY OF THE GOODS OR SERVICES.

Contents

Install..... 5

Wire..... 16

EU Declaration of Conformity..... 26

China RoHS Table..... 28

1 Install

1.1 Unpack and inspect

The Rosemount™ Clarity II Turbidimeter is a complete system for the determination of turbidity in drinking water. The system consists of the transmitter, sensor(s), cable(s), and flow chamber/debubbler(s). Consult the table to verify that you have received the parts for the option you ordered.

Table 1-1: Rosemount Clarity II Turbidimeter Parts

Item	Model/part number
Single input turbidity transmitter	1056-03-27-38-AN
Dual input turbidity transmitter	1056-03-27-37-AN
Single input turbidity transmitter with HART®	1056-03-27-38-HT
Dual input turbidity transmitter with HART	1056-03-27-38-HT
Sensor - EPA standards	8-0108-0002-EPA
Sensor - ISO standard	8-0108-0003-ISO
Cable - 3 ft. (0.9 m)	2413800
Cable - 20 ft. (6.1 m)	2409700
Cable - 50 ft. (15.2 m)	2409800
Calibration cup	2410100
Molded chamber/debubbler	24170-00

Note

The transmitter model number is printed on a label attached to the side of the instrument.

1.2 Install

1.2.1 General installation information

1. Although the transmitter is suitable for outdoor use, do not install it in direct sunlight or in areas of extreme temperatures.
2. Install the transmitter in an area where vibration and electromagnetic and radio frequency interference are minimized or absent.

3. Keep the transmitter and sensor wiring at least one foot (0.3 m) from high voltage conductors. Be sure there is easy access to the transmitter.
4. The transmitter is suitable for panel, pipe, or surface mounting. Refer to the figures below.

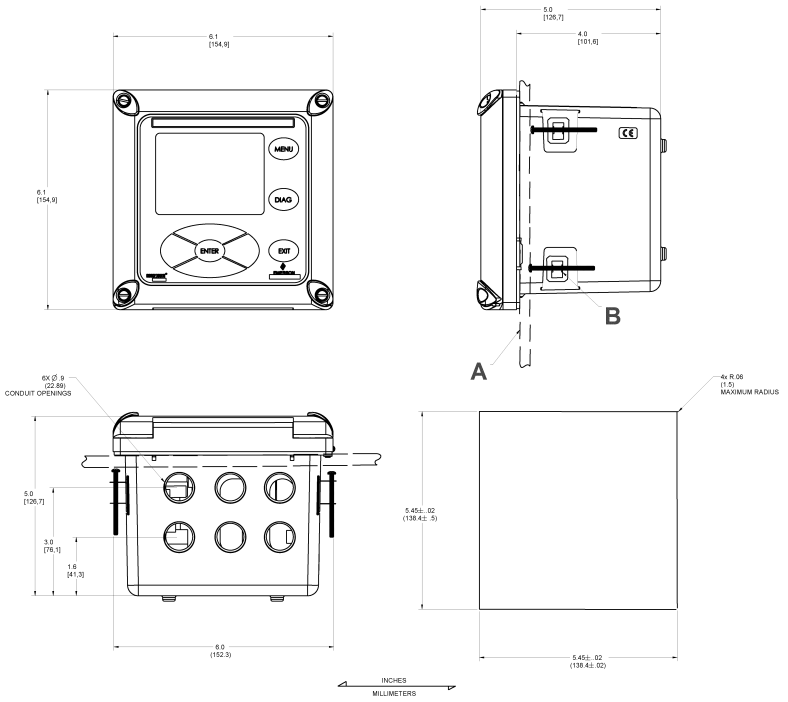
⚠ WARNING

Electrical shock

Electrical installation must be in accordance with the National Electrical Code (ANSI/NFPA-70) and/or any other applicable national or local codes.

Do not operate or energize instrument with case open.

Figure 1-1: Panel Mounting Dimensions

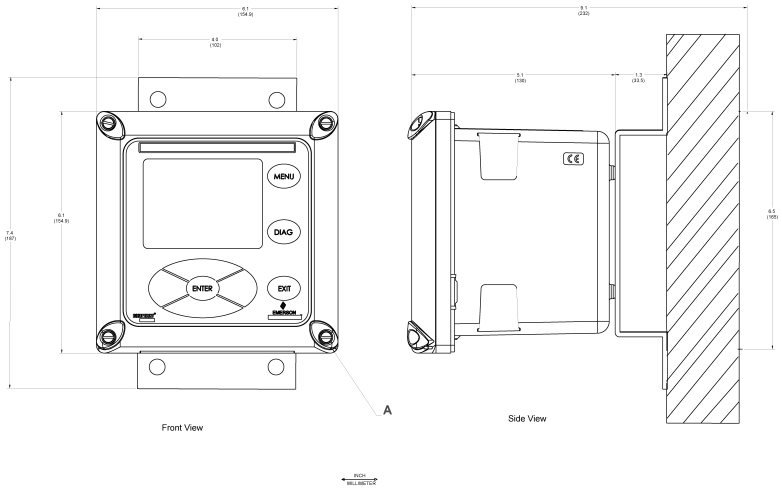


- A. Panel supplied by others. Maximum thickness: 3.75 in. (9.52 mm)
- B. 4X mounting brackets and screws provided with instrument

Note

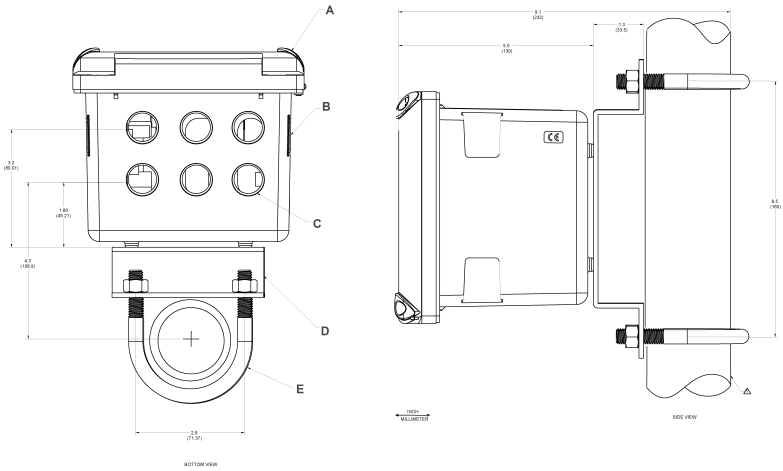
Panel mounting seal integrity (4/4X for outdoor applications) is your responsibility.

Figure 1-2: Wall Mounting Dimensions



A. 4X cover screw

Figure 1-3: Pipe Mounting Dimensions

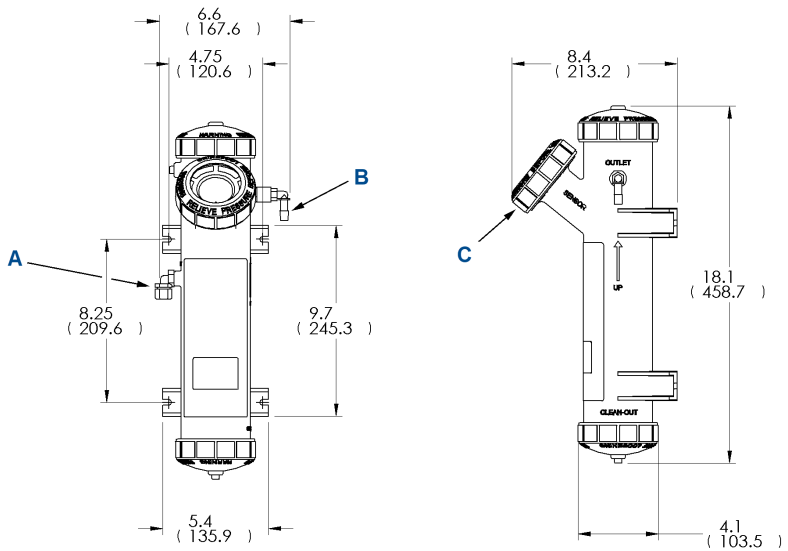


- A. Front panel
- B. Panel & pipe mount enclosure
- C. 6x Ø conduit openings
- D. 2-in. pipe mount bracket
- E. 2X set U-bolts for 2-in. pipe in kit PN 23280-00

The front panel is hinged at the bottom. The panel swings down for easy access to the wiring locations.

1.3 Install debubbler assembly

See [Figure 1-4](#) for installation.

Figure 1-4: Debubbler and Flow Chamber

- A. Inlet
- B. Outlet
- C. Sensor port

Procedure

1. Connect the sample line to the inlet fitting.
The fitting accepts 1/4-in. OD tubing. See [Sample point](#) for recommended installation of the sample port.
2. Attach a piece of 3/8-in. ID soft tubing to the drain fitting.
The debubbler must drain to atmosphere.

⚠ WARNING

High pressure and temperature

Before removing the sensor, be absolutely certain that the process pressure is reduced to 0 psig and the process temperature is lowered to a safe level!

⚠ CAUTION

Reading errors

During operation, the debubbler is under pressure. A 0.040 in. (1 mm) orifice in the outlet provides the pressure. Back pressure helps prevent outgassing, which can lead to bubbles accumulating on the sensor face, resulting in erroneous readings.

Do not exceed 30 psig (308 kPa abs) inlet pressure.

The amount of pressure in the debubbler can be estimated from the flow rate. See [Table 1-2](#).

Table 1-2: Approximate Debubbler Pressure as a Function of Flow (0.040 Inch Outlet Orifice)

gph	psig	ml/min	kPa abs
2	1	100	110
4	3	200	120
6	8	300	140
8	14	400	160
10	21	500	190
11	26	600	240
12	31	700	280
--	--	800	340

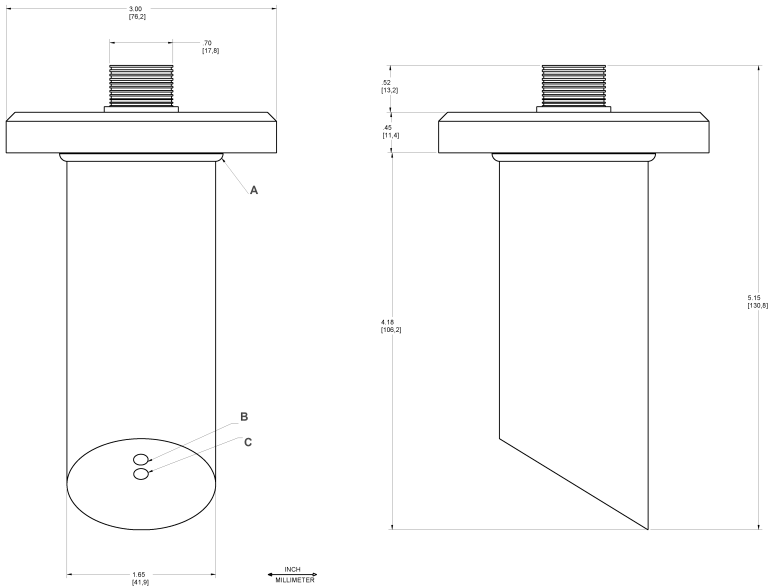
To control and monitor sample flow, a valved rotameter with fittings is available (PN 24103-00).

3. Attach the rotameter to the debubbler outlet.

You can also use the rotameter to increase back pressure on the debubbler if additional pressure is needed to prevent outgassing.

1.4 Install sensor

Figure 1-5: Sensor



- A. O-ring PN 9550145
- B. Light source
- C. Detector

Procedure

1. Unscrew the nut on the side of the debubbler.
2. Insert the sensor in the mouth of the measuring chamber.
Be sure the pin on the debubbler lines up with the hole in the sensor.
3. Replace the nut.
4. Remove the protective cap from the sensor.
5. Screw the cable onto the receptacle.
The plug and receptacle are keyed for proper alignment.

The sensor is rated to IP65 when properly connected to the cable.

Postrequisites

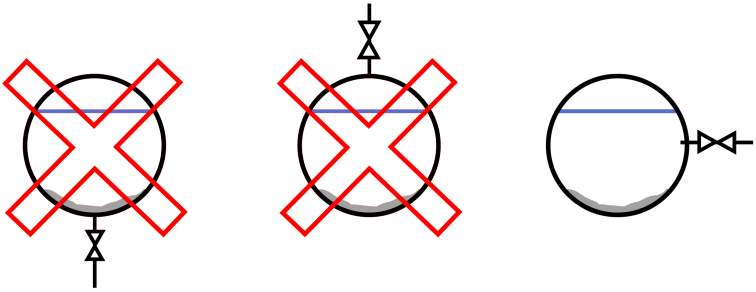
To prevent possible water damage to the connector contacts, be sure the cable receptacle and the connector on the back of the sensor are dry when connecting or disconnecting the cable.

1.5 Sample point

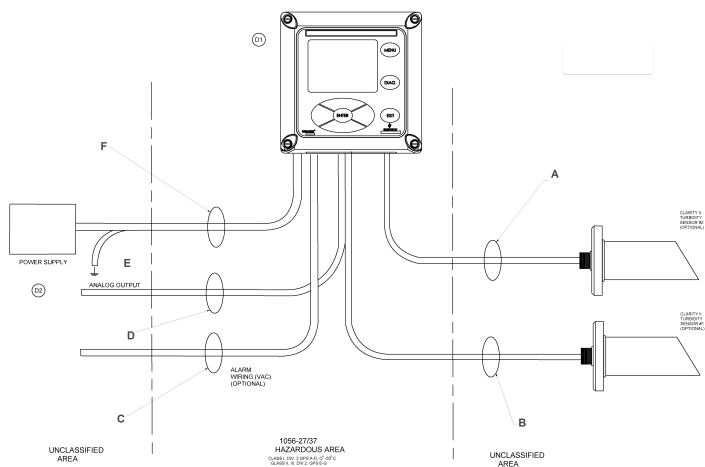
Locate the sample tap to minimize pickup of sediment or air.

See [Figure 1-6](#).

Figure 1-6: Sampling for Turbidity



If possible, install a sampling port that extends one or two inches (25 - 50 mm) into the pipe. Use 1/4 in. OD rigid plastic tubing. Avoid soft plastic tubing if possible. To reduce sample lag time, install the debubbler and flow chamber as close to the sample tap as possible.

Figure 1-7: Non Incendive Field Wiring Installation (CSA) 1056-27/37

- A. Sensor cable is shielded. Max cable length is 50 ft. (15.2 m).
- B. Sensor cable is shielded. Max cable length is 50 ft. (15.2 m).
- C. Metal conduit
- D. Metal conduit
- E. Ground connection may be made in hazardous area.
- F. Metal conduit

⚠ WARNING

Flammable

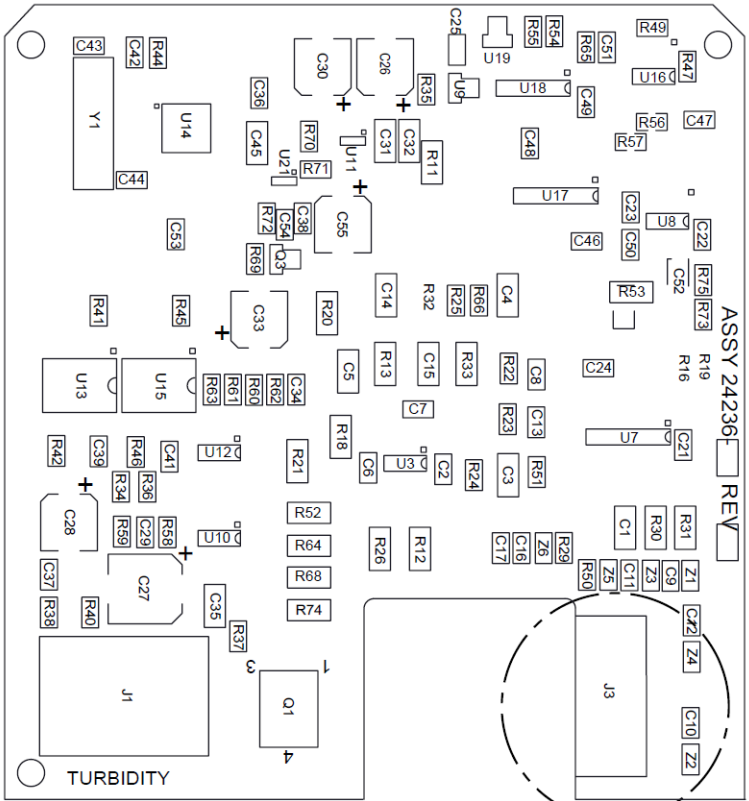
Use with non-flammable process media only.

Note

- A. Installation must conform to the CEC.
- B. Seal required at each conduit entrance.
- C. During installation, leave maximum amount of jacket insulation possible on N.I. field wiring within instrument enclosure. After termination, wrap N.I. field wiring within enclosure with mylar tape to ensure adequate double insulation remains.

Unless otherwise specified.

Figure 1-8: Non-Incendive Field Wiring Connection for Class 1, Division 1, Group D



Turbidity sensor board

Option -27/-37: turbidity

May only be used with a Clarity II Turbidity Sensor.

2 Wire

2.1 General wiring information

The transmitter is easy to wire.

It includes removable connectors and slide-out signal input boards.

2.1.1 Removable connectors and signal input boards

The transmitter uses removable signal input boards and communication boards for ease of wiring and installation.

You can remove each of the signal boards either partially or completely from the enclosure for wiring. The transmitter has three slots for placement of up to two signal input boards and one communication board.

Slot 1 - left	Slot 2 - center	Slot 3 - right
Communication board	Input board 1	Input board 2

2.1.2 Signal input boards

Slots 2 and 3 are for signal input measurement boards.

Procedure

1. Wire the sensor leads to the measurement board following the lead locations marked on the board.
2. Carefully slide the wired board fully into the enclosure slot and take up the excess sensor cable through the cable gland.
3. Tighten the cable gland nut to secure the cable and ensure a sealed enclosure.

2.1.3 Digital communication boards

2.1.4 Alarm relays

Emerson supplies four alarm relays with the switching power supply (85 to 264 Vac, 03 order code) and the 24 Vdc power supply (20 - 30 Vdc, 02 order code). You can use all relays for process measurement(s) or temperature. You can also configure any relay as a fault alarm instead of a process alarm. In addition, you may configure any relay independently and program it to activate pumps or control valves.

As process alarms, alarm logic (high or low activation or USP*) and deadband are user-programmable. Customer-defined failsafe operation is supported as a programmable menu function to allow all relays to be energized or not energized as a default condition upon powering the transmitter. You may program the USP* alarm to activate when the

conductivity is within a user-selectable percentage of the limit. USP* alarming is available only when a contacting conductivity measurement board is installed.

2.2 Prepare conduit openings

The transmitter enclosure has six conduit openings. Four conduit openings are fitted with conduit plugs.

Conduit openings accept ½-in. conduit fittings or PG 13.5 cable glands. To keep the case watertight, block unused openings with NEMA® 4X or IP65 conduit plugs.

Note

Use watertight fittings and hubs that comply with the requirements of UL514B. Connect the conduit hub to the conduit before attaching the fitting to the transmitter (UL508-26 16).

2.3 Prepare sensor cable

The Rosemount T1056 is intended for use with all Rosemount sensors. Refer to the sensor installation instructions for details on preparing sensor cables.

2.4 Power, output, and sensor connections

2.4.1 Power wiring

Emerson offers two power supplies for the Rosemount T1056

1. 24 Vdc (20-30 V) power supply (02 ordering code)
2. 85-265 Vac switching power supply (03 ordering code)

AC mains (115 or 230 V) leads and 24 Vdc leads are wired to the power supply board which is mounted vertically on the left side of the main enclosure cavity. Each lead location is marked clearly on the power supply board. Wire the power leads to the power supply board using the lead markings on the board.

Figure 2-1: 24 Vdc Power Supply (02 Ordering Code)

2.4.2 Current output wiring

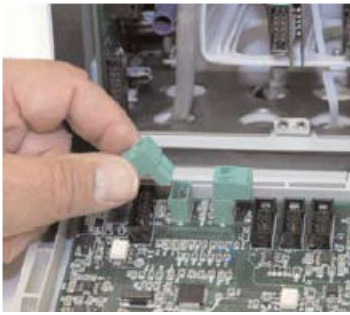
Emerson ships all instruments with two 4-20 mA current outputs. Wiring locations for the outputs are on the main board which is mounted on the hinged door of the instrument.

Wire the output leads to the correct position on the main board using the lead markings (+/positive, -/negative) on the board. Emerson provides male mating connectors with each unit.

For best EMI/RFI protection use shielded output signal cable enclosed in an earth-grounded metal conduit. Connect the shield to earth ground. AC wiring should be 14 gauge or greater. Provide a switch or breaker to disconnect the analyzer from the main power supply. Install the switch or breaker near the analyzer and label it as the disconnecting device for the analyzer.

Keep sensor and output signal wiring separate from power wiring. Do not run sensor and power wiring in the same conduit or together in a cable tray.

Figure 2-2: Current Output Wiring



2.4.3 Alarm relay wiring

Emerson supplies four alarm relays with the switching power supply (85 to 265 Vac, 03 order code) and the 24 Vdc power supply (20-30 Vdc, 02 order code).

Wire the relay leads on each of the independent relays to the correct position on the power supply board using the printed lead markings (NO/ Normally open, NC/Normally closed, or Com/Common) on the board. See [Figure 2-3](#).

Figure 2-3: Alarm Relay Wiring for Rosemount 1056 Switching Power Supply (03 Order Code)

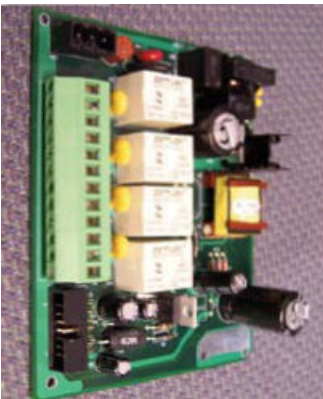


Table 2-1: Performance Specifications

NO1	Relay 1
COM1	
NC1	

Table 2-1: Performance Specifications (continued)

NO2	Relay 2
COM2	
NC2	
NO3	Relay 3
COM3	
NC3	
NO4	Relay 4
COM4	
NC4	

2.4.4 Sensor wiring to signal boards

Plug the pre-terminated sensor cable connector directly into the turbidity signal board mating connector.

▲ WARNING

Electrical shock

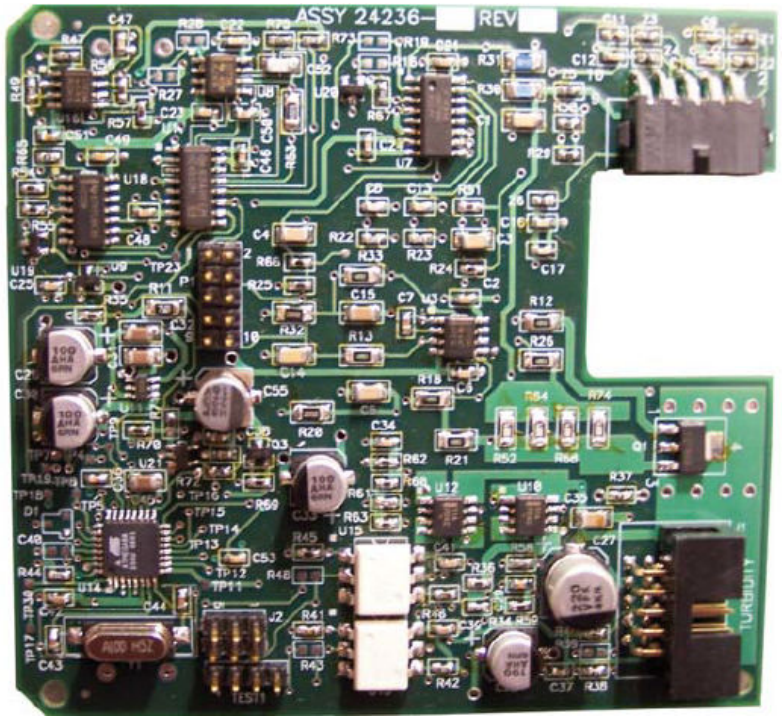
Electrical installation must be in accordance with the National Electrical Code (ANSI/NFPA-70) and/or any other applicable national or local codes.

2.4.5 Wire sensor cable

The sensor cable is pre-wired to a plug that inserts into a receiving socket on the signal board.

See [Figure 2-4](#).

Figure 2-4: Turbidity Signal Board with Plug-in Sensor Connection



The cable also passes through a strain relief fitting. To install the cable:

Procedure

1. Remove the wrenching nut from the strain relief fitting.
2. Insert the plug through the hole in the bottom of the enclosure nearest the sensor socket. Seat the fitting in the hole.
3. Slide the wrenching nut over the cable plug and screw it onto the fitting.
4. Loosen the cable nut so the cable slides easily.
5. Insert the plug into the appropriate receptacle. To remove the plug, squeeze the release clip and pull straight out.
6. Adjust the cable slack in the enclosure and tighten the cable nut.
Be sure to allow sufficient slack to avoid placing stress on the cable and connections.
7. Plug the cable into the back of the sensor.
The sensor is rated to IP65 when properly connected to the cable. To prevent possible water damage to the connector contacts, be sure

the cable receptacle and the connector on the back of the sensor are dry when connecting or disconnecting the cable.

8. Place the sensor in either the measuring chamber or the calibration cup.

Important

The sensor must be in a dark place when power is first applied to transmitter.

Note

If *S1 Warning* appears, check sensor cable connection and confirm sample water flow at debubbler drain outlet.

Important

When using EPA/incandescent sensors (P 8-0108-0002-EPA):

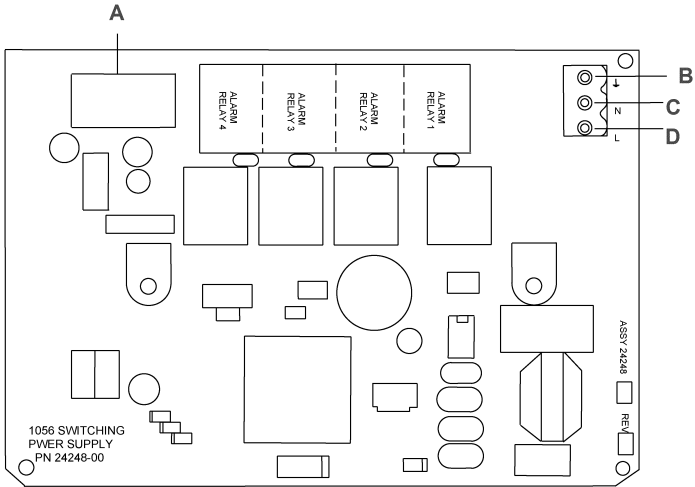
- Do not power up the instrument without the sensor connected.
- Do not disconnect and reconnect a sensor while a transmitter is powered.

If this is inconvenient or cannot be avoided:

- Cycle power to the instrument after connecting to the sensor or
- Perform a slope calibration or standard calibration routine after connecting the sensor.

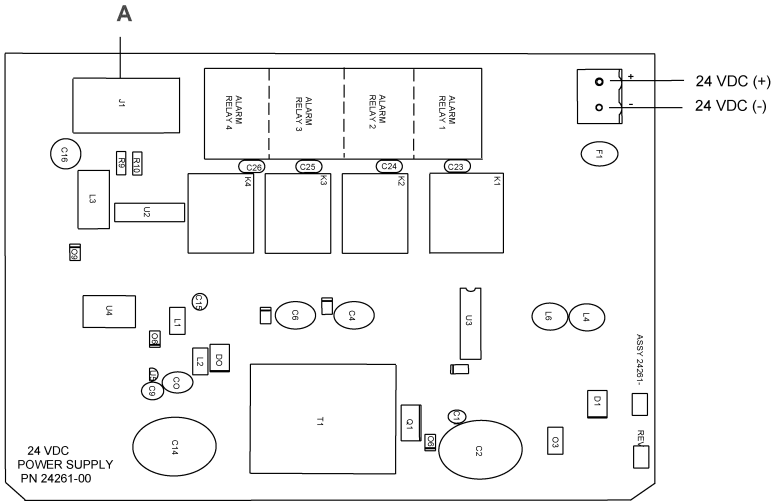
Following these guidelines will extend the life of the incandescent lamp and avoid premature warnings and faults due to reduced lamp life.

Figure 2-5: Power Wiring for Rosemount 1056 85-265 Vac Power Supply (03 Ordering Code)



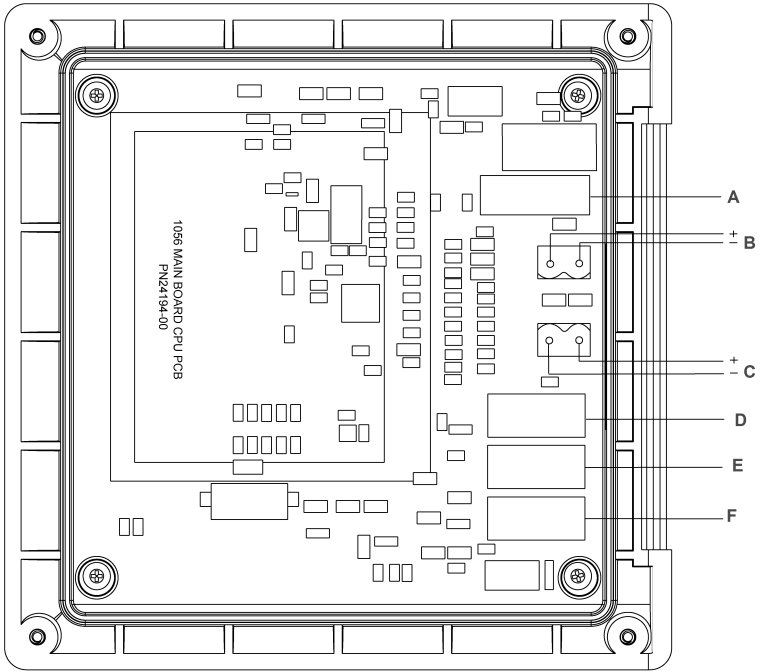
- A. To main board
- B. Earth ground
- C. Neutral
- D. Line

Figure 2-6: Power Wiring for Rosemount 1056 254 Vdc Power supply (02 Ordering Code)






A. To main PCB

Figure 2-7: Output Wiring for Rosemount 1056 Main PCB



- A. To power supply PCB
- B. Analog output 1
- C. Analog output 2
- D. To digital I/O PCB
- E. To sensor 1 PCB
- F. To sensor 2 PCB

A EU Declaration of Conformity

	
<p>EU Declaration of Conformity No: RAD 1122 Rev. C</p>	
<p>We,</p> <p>Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p> <p>declare under our sole responsibility that the product,</p> <p>Rosemount™ Dual Input Intelligent Analyzer model 1056-AA-BB-CC-DD-EE</p> <p>manufactured by,</p> <p>Rosemount Inc. 8200 Market Boulevard Chanhassen, MN 55317-9685 USA</p> <p>to which this declaration relates, is in conformity with the provisions of the European Union on Directives, including the latest amendments, as shown in the attached schedule.</p> <p>Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Union notified body certification, as shown in the attached schedule.</p>	
 <hr/> <p>(signature)</p>	<p>Vice President of Global Quality</p> <hr/> <p>(function)</p>
<p>Chris LaPoint</p> <hr/> <p>(name)</p>	<p>10-Jan-19, Shakopee, MN USA</p> <hr/> <p>(date of issue & place)</p>
<p>Page 1 of 2</p>	



EU Declaration of Conformity

No: RAD 1122 Rev. C

The product,

Rosemount™ Dual Input Intelligent Analyzer model 1056-AA-BB-CC-DD-EE

Where

AA is Power:

- 01 115/230V AC, no relays
- 02 24 VDC, 4 alarm relays
- 03 85-265V AC, 4 alarm relays

BB is Measurement 1:

- 20 Contacting Conductivity
- 21 Toroidal Conductivity
- 22 pH/ORP/ISP
- 23 Flow/Current
- 24 Chlorine
- 25 Dissolved Oxygen
- 26 Ozone
- 27 Turbidity

CC is Measurement 2:

- 30 Contacting Conductivity
- 31 Toroidal Conductivity
- 32 pH/ORP/ISP
- 33 Flow/Current
- 34 Chlorine
- 35 Dissolved Oxygen
- 36 Ozone
- 37 Turbidity
- 38 None

DD is Communication Output:

- AN 4-20 mA analog signaling
- HT 4-20 mA plus HART comm.
- DP Profibus protocol

EE is UL option:

- Blank if no selection
- UL UL, Ordinary Location

to which this declaration relates, is in conformity with relevant Union harmonization legislation:

EMC Directive (2014/30/EU)

Harmonized Standards:
EN 61326-1:2013

Low Voltage Directive (2014/35/EU)

Harmonized Standard:
EN 61010-1:2010

RoHS Directive (2011/65/EU)

Harmonized Standard:
EN 50581:2012

B China RoHS Table

含有China RoHS管控物质超过最大浓度限值的部件型号列表 1056
List of 1056 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)
电子组件 Electronics Assembly	X	O	O	O	O	O
传感器组件 Sensor Assembly	X	O	O	O	O	O

本表格系依据SJ/T11364的规定而制作。

This table is proposed in accordance with the provision of SJ/T11364.

O: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求。

O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 意为在该部件所使用的的所有均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求。


X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.


部件名称 Part Name	组装备件说明 Spare Parts Descriptions for Assemblies
电子组件 Electronics Assembly	电子线路板组件 Electronic Board Assemblies 液晶显示屏或本地操作界面显示屏 LCD or LOI Display
传感器组件 Sensor Assembly	传感器模块 Sensor Module



GLOBAL HEADQUARTERS

6021 Innovation Blvd.
Shakopee, MN 55379


 +1 866 347 3427


 +1 952 949 7001

 RMTNA.RCCPO@Emerson.com

NORTH AMERICA

Emerson Automation Solutions
8200 Market Blvd
Chanhassen, MN 55317


 Toll Free +1 800 999 9307


 F +1 952 949 7001

 RMTNA.RCCPO@Emerson.com

EUROPE

Emerson Automation Solutions
Neuhofstrasse 19a PO Box 1046
CH-6340 Baar
Switzerland


 +41 (0) 41 768 6111


 +41 (0) 41 768 6300

 RMTNA.RCCPO@Emerson.com

MIDDLE EAST AND AFRICA

Emerson Automation Solutions
Emerson FZE
Jebel Ali Free Zone
Dubai, United Arab Emirates, P.O. Box
17033


 +971 4 811 8100


 +971 4 886 5465

 RMTNA.RCCPO@Emerson.com


ASIA-PACIFIC

Emerson Automation Solutions
1 Pandan Crescent
Singapore 128461
Republic of Singapore

 +65 6 777 8211

 +65 6 777 0947

 RMTNA.RCCPO@Emerson.com

 [LinkedIn.com/company/Emerson-Automation-Solutions](https://www.linkedin.com/company/Emerson-Automation-Solutions)

 [Twitter.com/rosemount_news](https://twitter.com/rosemount_news)

 [Facebook.com/Rosemount](https://www.facebook.com/Rosemount)

 [Youtube.com/RosemountMeasurement](https://www.youtube.com/RosemountMeasurement)

©2020 Emerson. All rights reserved.

The Emerson logo is a trademark and service mark of Emerson Electric Co. Rosemount is a mark of one of the Emerson family of companies. All other marks are the property of their respective owners.