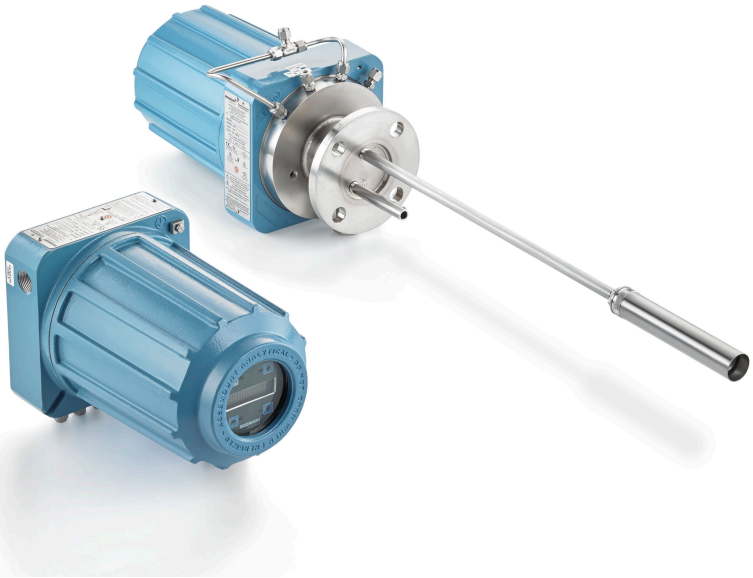
Quick Start Guide
00825-0100-4880, Rev AE
July 2023

Rosemount™ OCX8800 Oxygen and Combustibles Transmitter

with 4–20 mA HART® Protocol



ROSEMOUNT™

EMERSON

Safety information

Emerson designs, manufactures, and tests its products to meet many national and international standards. Because these instruments are sophisticated technical products, you must properly install, use, and maintain them to ensure they continue to operate within their normal specifications. You must adhere to the following instructions and integrate them into your safety program when installing, using, and maintaining Emerson's Rosemount products.

⚠ WARNING

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.

Read all instructions prior to installing, operating, and servicing the product.

⚠ WARNING

Install equipment as specified in the installation instructions of the appropriate manual and per local and national codes. connect all products to the proper electrical and pressure sources.

⚠ 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.

Symbols

Earth (ground) terminal

Protective conductor terminal

Risk of electrical shock

Refer to manual.

Contents

1 Description and specifications

1.1 Component checklist

Check the model number of your Rosemount OCX8800 against the transmitter features and options, making sure options specified by this number are on or included with the unit. Use this complete model number for any correspondence with Emerson.

2 Installation

2.1 Product safety

⚠ WARNING

Safety instructions

Failure to follow the safety instructions could result in serious injury or death.

Before installing this equipment, read Safety information.

⚠ WARNING

Hazardous areas

The Rosemount OCX88A can be installed in general purpose areas only. The Rosemount Xi Advanced Electronics can be installed in general purpose areas only.

Do not install the Rosemount OCX88A in hazardous areas.

Do not install the Rosemount Xi in hazardous areas or in the vicinity of flammable liquids.

⚠ WARNING

Hazardous areas

The Rosemount OCX88C may explode in hazardous areas.

All cable entry devices and blanking elements for unused apertures must be certified flameproof, suitable for the conditions of use, and properly installed.

The sensor housing must not be mounted to any surface or flange that exceeds 383 °F (195 °C).

The sample entering the sensor housing must not exceed 383 °F (195 °C).

⚠ WARNING

Electrical shock

Failure to install covers and ground leads could result in serious injury or death.

Install all protective equipment covers and ground leads after installation.

If external loop power is used, the power supply must be a safety extra low voltage (SELV) type.

Note
Plug all unused ports on the probe housing and Rosemount Xi enclosure with a suitable filling.

2.2 Mechanical installation

2.2.1 Select a location

The location of the transmitter in the stack or flue is important for maximum accuracy in the oxygen analyzing process. You must position the probe so the gas it measures is representative of the process.

For best results, position the transmitter near the center of the duct (40 to 60 percent insertion). Longer ducts may require several transmitters since the oxygen and combustibles can vary due to stratification. A point too near the wall of the duct or the inside radius of a bend may not provide a representative sample because of the very low flow conditions. Select the sensing point so the process gas temperature falls within the range of probe material used.

⚠ CAUTION

Damage to the electronics may result.

Do not allow the temperature of the electronics housing to exceed 185 °F (85 °C).

⚠ CAUTION

Failure to connect the pneumatic lines can allow the flow of contaminants into the transmitter's ports.

Whenever a positive stack pressure exists at the installation site, be sure to connect all pneumatic lines prior to installing the transmitter in the stack or ductwork.

Procedure

1. Check the flue or stack for holes and air leakage.

   The presence of this condition will substantially affect the accuracy of the oxygen and combustibles readings. Make the necessary repairs or install the transmitter upstream of any leakage.

2. Ensure the area is clear of internal and external obstructions that will interfere with installation and maintenance access to the transmitter.

   Allow adequate clearance for the removal of the transmitter.

2.2.2 Install the transmitter

Procedure

1. Ensure all components are available to install the transmitter.

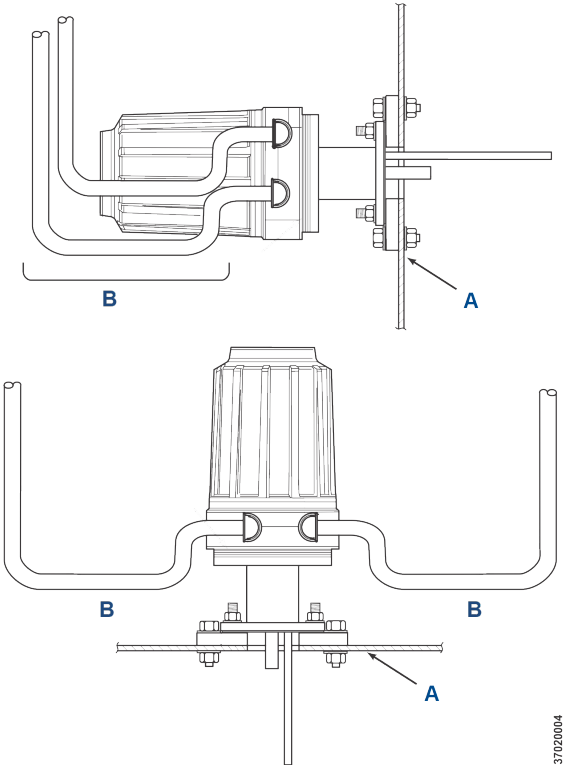
   You can install the transmitter intact as it is received.

2. Weld or bolt adapter plate onto the duct.
3. Use the pipe or wall mounting hardware to mount a remote electronics housing. Choose a location that does not exceed the length of the electronics cable ordered.

4. Ensure the conduits drop vertically from the transmitter and the conduit is routed below the level of the conduit ports on the housing to form a drip loop.

   Drip loops minimize the possibility that moisture will damage the electronics.

Figure 2-1: Installation with drip loops



A. Duct wall
B. Conduit drip loops

5. Where a positive stack pressure exists at the installation site, connect all pneumatic lines prior to installing the transmitter in the stack or ductwork.

⚠ CAUTION

If process temperatures will exceed 392 °F (200 °C), use anti-seize compound on stud threads to ease future removal of the transmitter.

6. Insert sample and exhaust tubes through the opening in the mounting flange and bolt the unit to the flange.

⚠ CAUTION

Uninsulated stacks or ducts may cause ambient temperatures in the electronics housing to exceed 185 °F (85 °C) and damage the electronics.

If insulation is removed to access the duct for mounting the transmitter, make sure to replace the insulation afterward.

7. If insulation is removed to access the duct for mounting the transmitter, make sure to replace insulation afterward.

2.3 Electrical installation

All wiring must conform to local and national codes. Figure 2-2 shows factory wired solenoid power connections.

⚠ WARNING

Failure to install covers and ground leads could result in serious injury or death.

Install all protective equipment covers and safety ground leads after installation.

⚠ WARNING

To meet the Safety Requirements of IEC 61010 (EC requirement), and ensure safe operation of this equipment, connection to the main electrical power supply must be made through a circuit breaker (minimum 10 A) in close proximity and marked for this equipment which will disconnect all current-carrying conductors during a fault situation. This circuit breaker should also include a mechanically operated isolating switch. If not, then another external means of disconnecting the supply from the equipment should be located close by. Circuit breakers or switches must comply with a recognized standard such as IEC 947.

Note
To maintain proper earth grounding, ensure a positive connection exists between the sensor housing, the electronics housing, and earth. The connecting ground wire must be 14 AWG minimum. Refer to Figure 2-2.

Note
Line voltage, signal, and relay wiring must be rated for at least 221 °F (105 °C).

2.3.1 Electrical connections

Make electrical connections, power, and communications to the electronics enclosure through two ¾-in. NPT ports in the enclosure, using fittings and cables provided by the customer.

Cable installation must meet NEC, IEC, and/or other applicable national or local codes for Class I, Zone 1, IIB +H2 T3/T6 permanently mounted equipment.

2.3.2 Connect line voltage

The transmitter operates on 100 to 240 Vac line voltage at 50 to 60 Hz. The power supply requires no setup.

Connect the line (L wire) to the **L** terminal and the neutral (N wire) to the **N** terminal on the AC power input terminal block in the electronics housing. Connect the ground (G wire) to the ground stud in the electronics housing as shown in Figure 2-2.

2.3.3 Connect output signals

The transmitter comes with two 4-20 mA signals with HART® on the oxygen O_2 signal.

Connect the output terminals in the electronics housing as shown in Figure 2-2.

Use individual shielded twisted wire pairs. Terminate the shield at the electronics housing.

2.3.4 Oxygen (O_2) 4-20 mA signal

One 4-20 mA signal represents the O_2 value.

Superimposed on the O_2 signal is the HART® information accessible through a handheld communicator or AMS Device Manager software.

The O_2 signal is at the **AOUT 1** terminals.

2.3.5 Combustibles equivalent (COe) 4-20 mA signal

Another 4-20 mA signal at the **AOUT 2** terminals represents the COe value.

HART® information is not available on the COe signal.

2.3.6 Alarm output relay

Connect any customer-supplied relay input to the alarm output relay terminal. Use shielded wire and terminate the shield at the electronics housing. The alarm output relay terminal is a set of dry, number 2, form C contacts with 30 mA, 30 Vdc capacity.

2.3.7 Remote electronics connections to sensor housing

Make the following connections between the remote electronics and sensor housings with the electronics cable ordered with the package. Braided cable is available in lengths up to 150 ft (46 m).

Note
Interconnect wiring shown is for Emerson-supplied cables.

2.3.8 Signal connections

Connect the electronics housing terminals to the corresponding terminals in the sensor housing. The twisted wire pairs are numbered on the inner plastic wrapper.

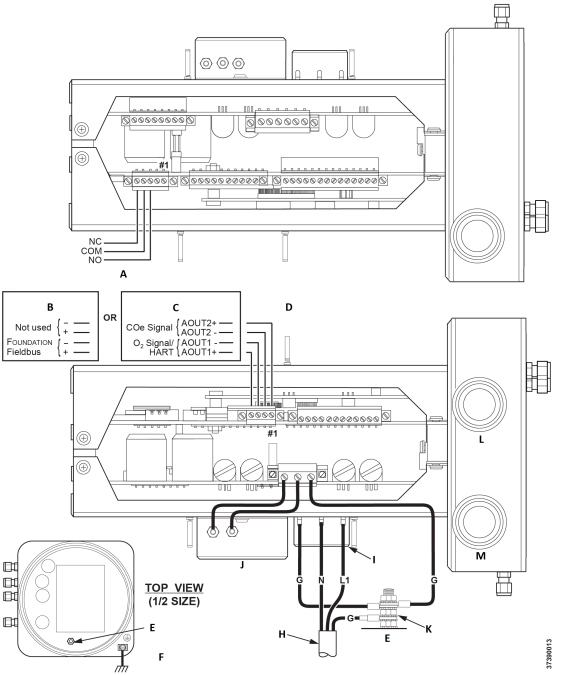
Keep twisted pairs together and match the numbers and wire colors.

2.3.9 Heater power connections

Use the blue, white, orange, black, red, and yellow stranded wires in the heater power cable to connect power to the three heaters in the sensor housing.

Match the wire colors to the corresponding heater power terminal blocks in the sensor and electronics housings.

Figure 2-2: Line voltage, earth, and 4-20 mA connections



A. Alarm output relay terminal block
B. FOUNDATION™ Fieldbus
C. HART®
D. Signal output terminal block
E. Ground stud
F. Earth ground typical for electronics and sensor housing
G. Ground
H. Customer wiring
I. Terminal block
J. EMI filter
K. External tooth locks washer
L. Signal port ¾ NPT
M. Power port ¾ NPT

2.4 Pneumatic installation

Pneumatic system connections depend on whether reference air set, calibration solenoids, and/or blowback equipment options are

equipped on your transmitter. Refer to the following sections and select the option that applies to your transmitter configuration.

2.4.1 Reference air set option (only)

When no options or only the reference air set option is equipped, use the following procedure to install the pneumatic system components.

Procedure

1. Refer to Figure 2-3. Connect the reference air set (regulator/ filter and pressure gauge) to the instrument air inlet on the electronics housing and to the inlet side of the dilution air flow meter.
2. Connect the dilution air flow meter output to the dilution air inlet fitting on the sensor housing.
3. Install an air line between the instrument air outlet fitting on the electronics housing and the tee fitting on the sensor housing.

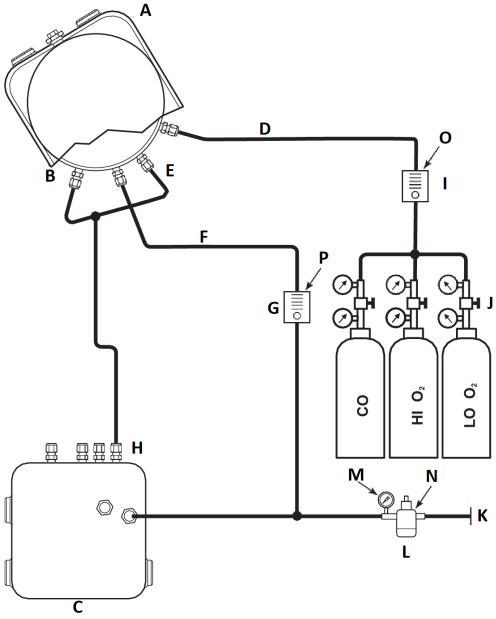
⚠ CAUTION

Failure to use proper gases will result in erroneous readings.

Do not use 100 percent nitrogen as an O_2 low gas.
Emerson recommends using O_2 low gas between 0.4 percent and 2.0 percent O_2.
Do not use gases with hydrocarbon concentrations of more than 40 parts per million.

4. Use one CO gas and two O_2 gases to calibrate the transmitter.
   - CO: 1000 ppm or up to 4 percent, balance air
   - O_2 low gas: 0.4 percent , balance N_2
   - O_2 high gas: 8 percent, balance N_2
5. Connect the output of the test gas sources to the inlet port of the **CAL GAS** flow meter. Install an air line between the flow meter outlet port and the **CAL GAS** inlet fitting on the sensor housing.

Figure 2-3: Pneumatic installation, Rosemount OCX8800 with reference air set without autocalibration



A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Calibration gas in
E. Reference air in
F. Dilution air in
G. Dilution air flow meter 0.1 scfh
H. Instrument air out
I. Calibration gas flow meter (7 scfh, 20 to 30 psig [1.4 to 2.1 barg] recommended)
J. Two-stage regulators
K. Instrument air supply
L. Pressure regulator/filter
General purpose: 35 psig (2.4 barg)
Hazardous area: 45 psig (3.1 barg)
M. 2-in. pressure gauge, 0 to 60 psig (0 to 4.1 barg)
N. Combination filter-regulator, 0 to 60 psig (0 to 4.1 barg)
O. Flow meter, 1-10 scfh
P. Flow meter, 0.05-0.5 scfh

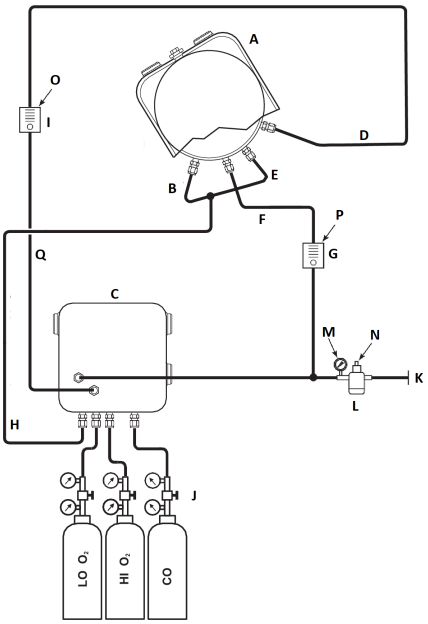
2.4.2 Reference air set and solenoids option without COe zero function

When the reference air set and test gas solenoids are included with your transmitter, use the following procedure to install the pneumatic system components.

Procedure

1. Install the reference air set according to the instructions in Reference air set option (only), Step 1 through Step 3.
2. Refer to Figure 2-4. Connect the O_2 low gas source to the **CAL GAS LO** O_2 inlet fitting on the electronics housing. Install a shutoff valve and pressure regulator with gauge in the O_2 low supply line, as shown.
3. Connect the O_2 high gas source to the **CAL GAS HI** O_2 inlet fitting. Install a shutoff valve and pressure regulator with gauge in the O_2 high supply line.
4. Connect the CO high gas to the **CAL GAS HI COe** inlet fitting. Install a shutoff valve and pressure regulator with gauge in the **CO** high supply line.
5. Connect the **CAL GAS** outlet fitting of the electronics housing to the inlet port of the **CAL GAS** flow meter. Install an air line between the flow meter outlet port and the **CAL GAS** inlet fitting on the sensor housing.

Figure 2-4: Pneumatic installation, Rosemount OCX8800 with reference air set, solenoids, and autocalibration, without COe zero function

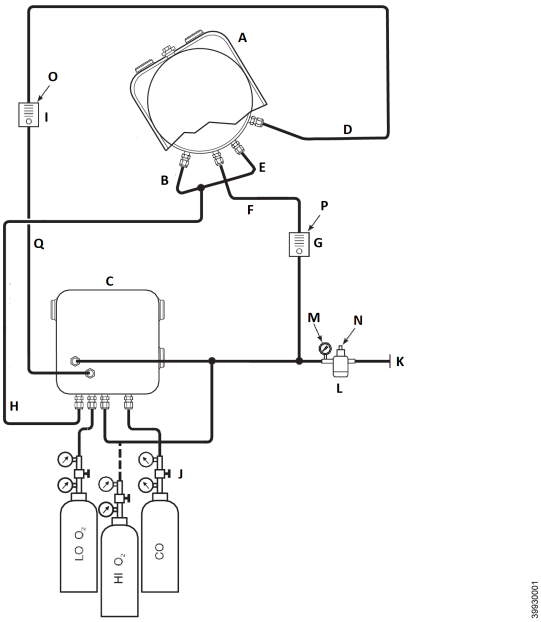


A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Calibration gas in
E. Reference air in
F. Dilution air in
G. Dilution air flow meter 0.1 scfh
H. Instrument air out
I. Calibration gas flow meter (7 scfh, 20 to 30 psig [1.4 to 2.1 barg] recommended)
J. Two-stage regulators
K. Instrument air supply
L. Pressure regulator/filter 35 psig (2.4 barg) for general purpose, 45 psig (3.1 barg) for hazardous areas
M. 2-in. pressure gauge 0-60 psig (0 to 4.1 barg)
N. Combination filter-reg. 0-60 psig (0 to 4.1 barg)
O. Flow meter 1-10 scfh
P. Flow meter 0.05-0.5 scfh
Q. Calibration gas out

2.4.3 Reference air set and solenoids option with COe zero function

Figure 2-5 shows the piping arrangement for the transmitter with autocalibration when the COe zero function is used. The arrangement is similar to Figure 2-4, except instrument air is used as the high O_2 test gas.

Figure 2-5: Pneumatic installation, Rosemount OCX8800 with reference air set, solenoids, and autocalibration, with COe zero function



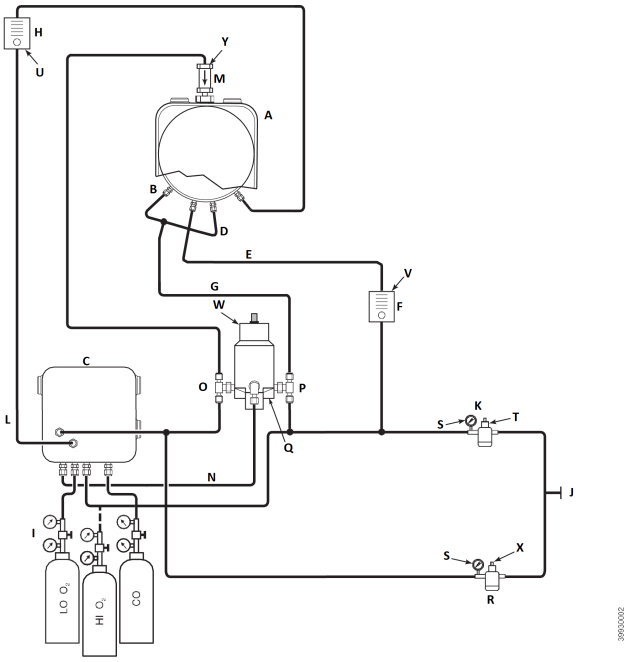
A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Calibration gas in
E. Reference air in
F. Dilution air in
G. Dilution air flow meter 0.1 scfh
H. Instrument air out
I. Calibration gas flow meter (7 scfh, 20-30 psig [1.4 to 2.1 barg] recommended)
J. Two-stage regulators
K. Instrument air supply
L. Pressure regulator/filter 35 psig (2.4 barg) for general purpose, 45 psig (3.1 barg) for hazardous areas
M. 2-in. pressure gauge, 0-60 psig (0 to 4.1 barg)
N. Combination filter-regulator, 0-60 psig (0 to 4.1 barg)
O. Flow meter, 1-10 scfh
P. Flow meter, 0.05-0.5 scfh
Q. Calibration gas out

Note
If instrument is to be used as the high O_2 calibration gas, the low O_2 and COe calibration gases must also be set to the same pressure.

2.4.4 Reference air set, solenoids, and blowback option with COe zero function

Figure 2-6 shows the piping arrangement for the transmitter with the blowback and autocalibration options when COe zero function is used. The arrangement is similar to Figure 2-4 except instrument air is used as the high O_2 test gas.

Figure 2-6: Pneumatic installation, Rosemount OCX8800 with reference air set, solenoids, and autocalibration, with COe zero function



A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Reference air in
E. Dilution air in
F. Dilution air flow meter, 0.1 scfh
G. Instrument air
H. Calibration gas flow meter (7 scfh, 20 to 30 psig [1.3 to 2.1 barg] recommended)
I. Two-stage regulators
J. Instrument air supply
K. Pressure regulator/filter
- *General purpose: 35 psig (2.4 barg)*
- *Hazardous area: 45 psig (3.1 barg)*

L. Calibration gas out
M. Check valve
N. Actuating air

O. *Normally open solenoid valve*[1]
P. *Normally closed solenoid valve*[1]
Q. *Blowback valve, air operated*
R. *2-in. pressure gauge, 0 to 60 psig (0 to 4.1 barg)*
S. *Combination filter/regulator, 0 to 60 psig (0 to 4.1 barg)*
T. *Flow meter, 1-10 scfh*
U. *Flow meter, 0.05-0.5 scfh*
V. *Pneumatic actuator*
W. *Combination filter/regulator, 0.60 psig (0.04 barg)*
X. *Check valve, 5 psig (0.3 barg)*

Note
Wall mount the air-operated blowback valve on a suitable mounting plate.

Note
Actuating air pressure at blowback valve inlet port must be at least 51 psig (3.5 barg) to fully actuate the valve.

Note
If instrument is to be used as the high O_2 calibration gas, the low O_2 and COe calibration gases must also be set to the same pressure.

2.4.5 Reference air set, solenoids, and blowback option without COe zero function

Installing a transmitter with the blowback option requires the addition of air operated blowback valve, regulator and gauge, and check valve. Figure 2-7 shows the piping arrangement for the transmitter with the blowback and autocalibration options. Figure 2-8 shows the piping arrangement for the transmitter with the blowback option, but without autocalibration (without test gas solenoids). When the reference air set, calibration gas solenoids, and blowback options are included with your transmitter, use the following procedure to install the pneumatic system components.

Procedure

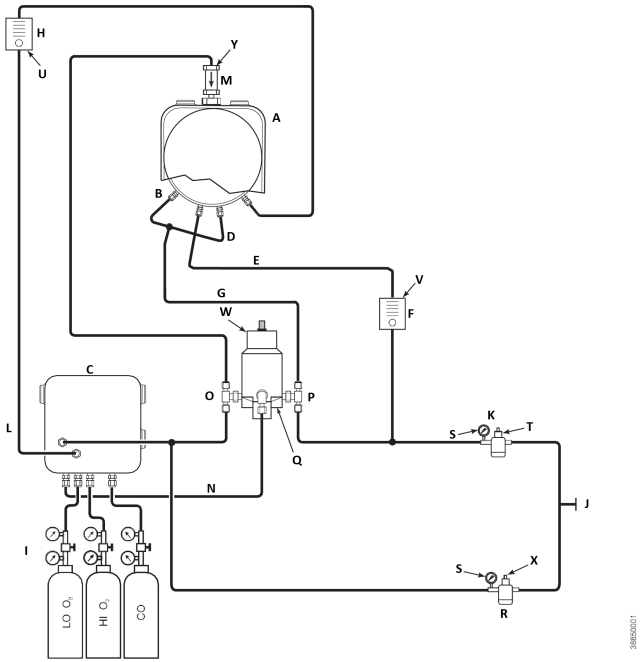
1. Connect the calibration gas sources according to Reference air set and solenoids option without COe zero function, Step 2 through Step 5.
2. Connect a clean, dry, instrument-quality supply of air (20.95 percent O_2) to the 45 psig and 55 psig pressure regulators.

(1) *During blowback operation, states of both solenoid valves change.*

The inlet to the 45 psig regulator accepts a ⅛-in. NPT fitting. The inlet to the 55 psig regulator accepts a ¼-in. NPT fitting.

3. See the upper leg of the instrument air supply. Connect the output of the 35 psi regulator/filter to one port of the normally closed air-operated solenoid valve, and to the inlet side of the dilution air flow meter.
4. Connect the dilution air flow meter output to the DILUTION AIR inlet fitting on the sensor housing.
5. Install an instrument air line between the open port of the normally open air-operated solenoid valve and the tee fitting on the sensor housing.
6. Connect the output of the 55 psi regulator/filter to one port of the normally open air-operated solenoid valve, and to the instrument air inlet on the back of the electronics housing.
7. Install an air line between the open port of the normally closed air-operated solenoid valve and the check valve inlet fitting on the sensor housing.
8. Install an air line between the instrument air outlet fitting on the electronics housing and the control air inlet fitting on the air-operated solenoid valve.

Figure 2-7: Pneumatic installation, Rosemount OCX8800 with reference air set, solenoids, blowback, and autocalibration without COe zero function



A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Reference air in
E. Dilution air in
F. Dilution air flow meter 0.1 scfh
G. Instrument air
H. Calibration gas flow meter (7 scfh, 20-30 psig recommended)
I. Two-stage regulators
J. Instrument air supply
K. Pressure regulator/filter 35 psig - general purpose
L. Calibration gas out
M. Check valve
N. Actuating air
O. Normally open solenoid valve(2)
P. Normally closed solenoid valve(2)

(2) During blowback operation, states of both solenoid valves change.

Q. Blowback valve, air operated
R. Two-in. pressure gauge 0-60 psig
S. Combination filter-reg. 0-60 psig
T. Flow meter 1-10 scfh
U. Flow meter 0.05-0.5 scfh
V. Pneumatic actuator
W. Combination filter/reg. 0.60 psig
X. Check valve 5 psig

Note
Wall mount the air-operated blowback valve on a suitable mounting plate.

Note
Actuating air pressure at blowback valve inlet port must be at least 51 psig to fully actuate the valve.

⚠ CAUTION

If regulators are not installed in correct locations, the transmitter will not work.

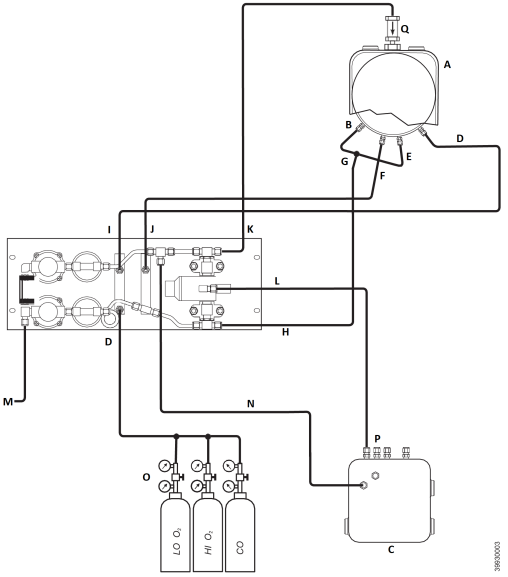
Pressure regulator with ⅛-in. inlet port is factory set for 35 psig. Regulator with ¼-in. inlet port is factory set for 55 psig.

2.4.6 Reference air set and blowback panels

Piping arrangement for blowback panel without autocalibration without COe zero function is shown in Figure 2-8. Piping arrangement for blowback panel with autocalibration without COe zero function is shown in Figure 2-9. Piping arrangement for

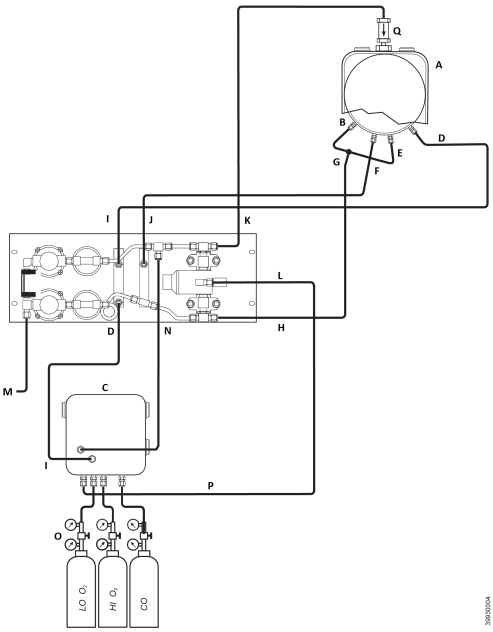
blowback panel with autocalibration with COe zero function is shown in Figure 2-10.

Figure 2-8: Pneumatic Installation, Blowback Panel without Autocalibration without COe Zero Function



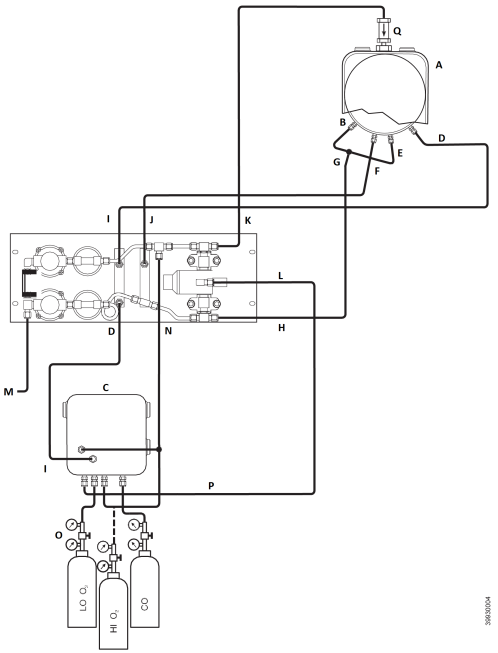
A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Calibration gas in
E. Reference air in
F. Dilution air in
G. Instrument air
H. Instrument air out
I. Calibration gas out
J. Dilution air out
K. Blowback air out
L. Blowback control air
M. Instrument air supply
N. Instrument air to electronics
O. Two-stage regulators
P. Actuating air
Q. Check valve

Figure 2-9: Pneumatic Installation, Blowback Panel with Autocalibration without COe Zero Function



A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Calibration gas in
E. Reference air in
F. Dilution air in
G. Instrument air
H. Instrument air out
I. Calibration gas out
J. Dilution air out
K. Blowback air out
L. Blowback control air
M. Instrument air supply
N. Instrument air to electronics
O. Two-stage regulators
P. Actuating air
Q. Check valve

Figure 2-10: Pneumatic Installation, Blowback Panel with Autocalibration with COe Zero Function



A. Sensor housing
B. Eductor air in
C. Electronics housing
D. Calibration gas in
E. Reference air in
F. Dilution air in
G. Instrument air
H. Instrument air out
I. Calibration gas out
J. Dilution air out
K. Blowback air out
L. Blowback control air
M. Instrument air supply
N. Instrument air to electronics
O. Two-stage regulators
P. Actuating air
Q. Check valve

2.5 Initial start-up

Observe the following Caution.

Refer to Configuration and startup for start-up information.

⚠ CAUTION

Damage can result from having a cold transmitter exposed to the process gases.

If ducts will be washed down during outages, make sure to power down the transmitter and remove it from the wash area.

Upon completing installation, make sure that the transmitter is turned on and operating prior to firing up the combustion process.

During outages, and whenever possible, leave the transmitter running to prevent condensation and premature aging from thermal cycling.

3 Configuration and startup

⚠ WARNING

Failure to install covers and ground leads could result in serious injury or death.

Install all protective equipment covers and safety ground leads after installation.

3.1 Verify installation

Ensure the transmitter is installed correctly. Verify mechanical installation and all electrical and pneumatic connections.

⚠ CAUTION

Damage can result from having a cold transmitter exposed to the process gases.

Make sure that the transmitter is turned on and operating prior to firing up the combustion process.

During outages, and whenever possible, leave all transmitters running to prevent condensation and premature aging from thermal cycling.

3.1.1 Verify configuration - HART® electronics

There are three switches on the microprocessor board which are user configurable for the Rosemount OCX8800 with HART electronics (Figure 3-1).

SW1 determines if the O_2 4-20 mA signal is internally or externally powered. SW2 determines if the COe 4-20 mA signal is internally or externally powered. SW3 sets the rail limits for the O_2 and COe 4-20 mA signals and configures the sample line heater control circuit. All switches are accessible through holes in the electronics box.

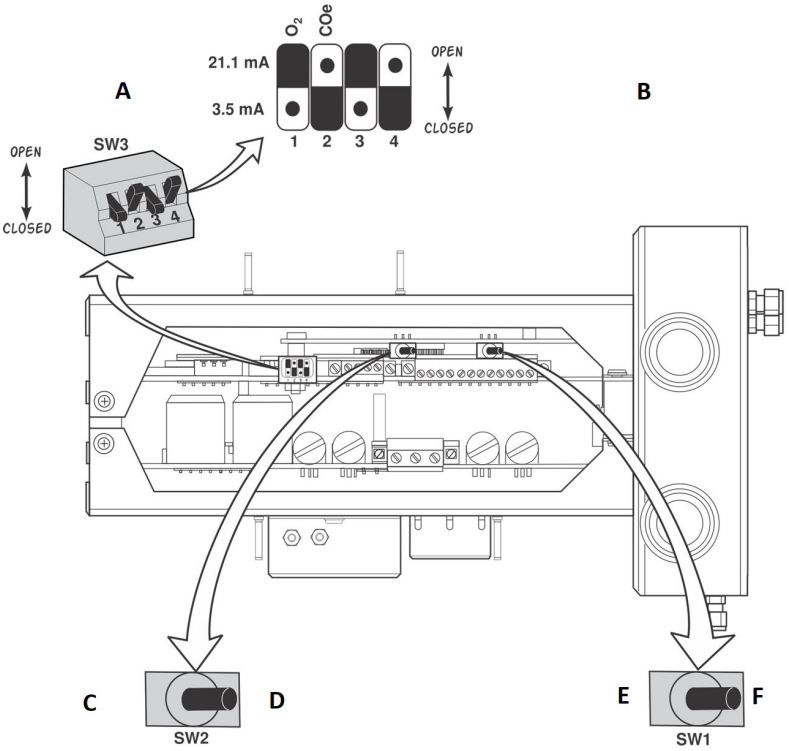
⚠ CAUTION

If defaults are changed under power, damage to the electronics may occur.

Remove power from the transmitter before changing defaults.

Verify that the following switch settings are correct for your installation:

Figure 3-1: Rosemount OCX8800 Defaults - HART Electronics



A. Switch default positions shown

B. O_2 21.1 mA / 3.5 mA: O_2 4-20 mA signal
Rail limits:
Open High: 21.1 mA
Closed Low: 3.5 mA
COe 21.1 mA/3.5 mA: COe 4-20 mA signal
Rail limits:
Open High: 21.1 mA
Closed Low: 3.5 mA

C. Internal: COe 4-20 mA is internally powered.

D. External: COe 4-20 mA requires an external power supply (default).

E. Internal: O_2 4-20 mA is internally powered.

F. External: O_2 4-20 mA requires an external power supply (default).

SW1: The two settings are internally or externally powering the O_2 4-20 mA signal. The factory setting is for the O_2 4-20 mA signal to be internally powered.

SW2: The two settings are internally or externally powering the COe 4-20 mA signal. The factory setting is for the COe 4-20 mA signal to be internally powered.

SW3: The factory sets this switch as follows:

- Position 1 determines the O_2 4-20 mA signal rail limit. The settings are high, 21.1 mA, or low, 3.5 mA. The factory setting is low, 3.5 mA.
- Position 2 determines the COe 4-20 mA signal rail limit. The settings are high, 21.1 mA, or low, 3.5 mA. The factory setting is high, 21.1 mA.

Positions 3 and 4 must be set as shown for proper software control of the device heaters.

3.2 Initial power up

Allow adequate time (approximately 60 minutes) for the heaters to begin operation and for the transmitter to reach normal operating temperature on power up.

Normal operating temperature for the O_2 cell is 1357 °F (736 °C). Normal operating temperature for the combustibles cell is 572 °F (300 °C). The normal sample line temperature is 338 °F (170 °C). During this time, the eductor air solenoid will remain closed, so no sample is pulled through the transmitter. When the transmitter reaches operating temperature, the solenoid will energize, eductor air will begin to flow, and the transmitter will begin normal operation.

3.3 Setting test gas values

3.3.1 Set test gas values with HART®

Procedure

1. Use the Field Communicator software to access the HART® menu.
2. From the ***DETAILED SETUP*** menu, select **O_2 CALIB PARAMS**.
3. From **O_2** ***CAL PARAMS***, select **O_2 HIGH GAS**. Enter the percent O_2 used for the high O_2 test gas.
4. From **O_2** ***CAL PARAMS***, select **O_2 LOW GAS**. Enter the percent O_2 used for the low O_2 test gas.
5. From the ***DETAILED SETUP*** menu, select **COe CALIB PARAMS**.
6. From ***COe CAL PARAMS***, select **COe Test Gas**. Enter the CO concentration (ppm) used for COe test gas.

3.3.2 Set test gas values with the local operator interface (LOI)

Procedure

1. Use the "Z" pattern to enter the LOI menu tree.
2. From the ***SYSTEM*** menu, select **Calib Setup**.
3. From ***Calib Setup***, select **O_2 High Gas %**. Enter the percent O_2 used for the high O_2 test gas.
4. Press **Down**, and the next selection will be **O_2 Low Gas %**. Enter the percent O_2 used for the low O_2 test gas.
5. Press **Down** several times to display **COe Test Gas**. Enter the CO concentration (ppm) used for COe test gas.

3.4 Calibration solenoids

Emerson can provide the transmitter with optional calibration solenoids for autocalibration. The transmitter's software controls the solenoids, which automatically switch in the proper calibration gas during the calibration cycle.

3.4.1 Configure the calibration solenoids with the Field Communicator - HART®

Procedure

1. Use the Field Communicator to access the ***HART*** menu.
2. From the ***DETAILED SETUP*** menu, select CAL SETUP.
3. From the ***CAL SETUP*** menu, select O_2 CAL PARAMS/COe CAL PARAMS.
4. From the O_2 CAL PARAMS/COe CAL PARAMS, select Solenoids. Select Yes to enable the solenoids.

3.4.2 Configure the calibration solenoids with the LOI

Procedure

1. Use the *Z* pattern to enter the LOI menu tree.
2. From the ***SYSTEM*** menu, select Calib Setup.
3. From the ***Calib Setup*** menu, select Use Solenoids. Select Yes to enable the solenoids.

3.5 Blowback feature

The blowback feature blows instrument air back through the center of the internal filter and out the sample tube of the probe. This

removes built up dirt and particulate from the internal filter, sample line, and any optional in-situ filter on the end of the sample tube.

The blowback feature is normally used in systems that have heavy particulate in the process stream. The blowback feature requires the optional blowback hardware to be properly installed external to the transmitter. A Rosemount OCX8800 shipped from the factory must be configured before blowback can be implemented. This same process must be performed any time a replacement card stack is installed.

3.5.1 Configure blowback with the Field Communicator - HART®

Procedure

1. Use the Field Communicator or AMS software to access the ***HART*** menu.
2. From the ***DETAILED SETUP*** menu, select INPUT/OUTPUT.
3. From the ***INPUT/OUTPUT*** menu, select BLOWBACK.
4. From the ***BLOWBACK*** menu, select BlBk Enabled. Select Yes to enable blowback. Also set the following parameters:
   - BlBk Intrvl: Length of time between blowback events (60 minutes recommended).
   - BlBk Period: Length of time blowback is activated (five seconds recommended).
   - BlBk Purge Time: Length of time after blowback is complete before oxygen / combustibles readings are considered valid (set as required by the application).
5. Manually initiate blowback from ***DIAG/SERVICE***.

3.5.2 Configure blowback with the LOI

Procedure

1. Use the *Z* pattern to enter the LOI menu tree.
2. From the ***SYSTEM*** menu, select Blow Back.
3. From the ***Blow Back*** menu, select Blow Bk Enable. Select Yes to enable blowback. Also set the following parameters:
   - Blow Bk Intrvl: Length of time between blowback events. Range is 0 to 32,000 minutes. Default is 60 minutes. Emerson recommeneds 60 minutes.
   - Blow Bk Period: Length of time blowback in activated. Range is one to five seconds. Default is two seconds. Emerson recommends five seconds.

- Blow Bk Purge: Length of time after blowback is complete before oxygen/combustibles readings are considered valid. Range is 0 to 500 seconds. Default is 88 seconds. Set as required by the application.
- Force Blow Bk: Initiates a blow back event manually.

3.6 COe purge/zero feature

This feature provides a way to periodically flood the COe sensor with air to perform two functions:

1. Provide additional oxygen to help burn off any combustible residue from the COe sensor.
2. Allow for optional adjustment of the COe calibration constant.

If the transmitter is configured to update the COe calibration constant, only the constant is updated. The COe calibration slope is not affected. To update both the constant and slope, you must do a full calibration.

The feature uses the calibration solenoid that is also used for high O_2 test gas and COe zero gas. For the feature to work properly, instrument air is used as the high O_2 test gas. This also requires the high O_2 test gas value to be set at 20.95 percent. You can install a two-way valve to switch the high O_2 test gas between the normal calibration gas and instrument air. This allows the transmitter to use a specified calibration gas for calibration, then instrument air for the COe zero feature. Switching between the two gases must be manually coordinated between scheduled calibrations and COe zero events.

When the COe zero feature is used, special pneumatic connections are required.

The COe zero feature is only valid if the transmitter is supplied with calibration solenoids and the solenoids have been activated.

A Rosemount OCX8800 shipped from the factory must be configured before the COe zero feature can be implemented. This same process must be performed any time a replacement card stack is installed.

⚠ WARNING

During the COe Zero Function, the analog output signals may track the oxygen and combustibles readings if configured to do so.

To avoid a potentially dangerous operating condition, remove the transmitter from the automatic combustion control loop before performing the COe Zero Function procedure.

Note
At the completion of the COe Zero Function, the COe analog output signal will change if the Zero Update parameter is set to Yes.

3.6.1 Configure COe zero with the Field Communicator - HART®

Procedure

1. Use the Field Communicator or AMS software to access the ***HART*** menu.
2. From the ***DETAILED SETUP*** menu, select **INPUT/OUTPUT**.
3. From the ***INPUT/OUTPUT*** menu, select **COE ZERO**.
4. From the ***COE ZERO*** menu, select the functions as follows:
   - Zero Enabled: Select **Yes** or **No** to enable or disable this feature.
   - Zero Intrvl: Length of time between COe zero events. Range is 60 to 480 minutes. Default is 60 minutes.
   - Zero Flow: Length of time COe zero gas flows. Range is 120 to 600 seconds. Default is 120 seconds.
   - Zero Purge: Length of time after COe zero is complete before oxygen/combustibles readings are considered valid. Range is 60 to 180 seconds. Default is 60 seconds. Total duration of this function is flow time plus purge time.
   - Zero Tracks: Determines if the analog output signals track or hold during the function. Valid choices are **None**, **Both**, **COe**, and O_2.
   - Zero Update: Determines if the COe calibration constant is updated at the end of the function. Valid choices are **Yes** and **No**. A **Yes** choice will cause the COe calibration constant to update.

Note
At the completion of the COe Zero Function, the COe analog output signal will change if the Zero Update parameter is set to **Yes**.

3.6.2 Configure COe zero with the LOI

Procedure

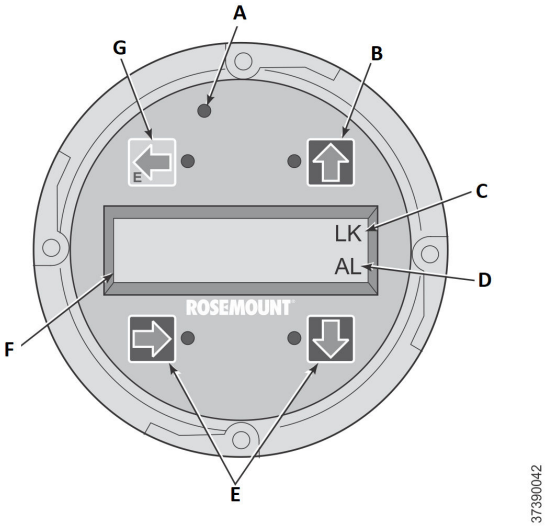
1. Use the *Z* pattern to enter the LOI menu tree.
2. From the ***SYSTEM*** menu, select **Input/Output**.
3. From the ***Input/Output*** menu, select **COe Zero**. Select the functions as follows:
   - COe Zero Enable: Select Yes or No to enable or disable this feature.
   - COe Zero Intrvl: Length of time between COe zero events. Range is 60 to 480 minutes. Default is 60 minutes.
   - COe Zero Flow: Length of time COe zero gas flows. Range is 120 to 600 seconds. Default is 120 seconds.
   - COe Zero Purge: Length of time after COe zero is complete before oxygen/combustibles readings are considered valid. Range is 60 to 180 seconds. Default is 60 seconds. Total duration of this function is flow time plus purge time.
   - COe Zero Tracks: Determines if the analog output signals track or hold during the function. Valid choices are **None**, **Both**, **COe**, and **O_2**.
   - COe Zero Update: Determines if the COe calibration constant is updated at the end of the function. Valid choices are **Yes** and **No**. A **Yes** choice will cause the COe calibration constant to update.

4 Using the local operator interface (LOI)

4.1 Local operator interface (LOI) controls

4.1.1 LOI assembly

Figure 4-1: LOI Assembly



A. Touch confirmation LED
B. Selection arrow
C. Lockout notation
D. Status code
E. Selection arrow
F. Display window
G. Selection arrow (enter key)

4.1.2 Local operator interface (LOI) key functions

The gray (top left) key will move one level higher in the menu structure. When entering parameter values (numbers), this key moves the cursor to the left. The left-pointing key also doubles as an **Enter** key, used after the digits of a parameter value are entered and the cursor is moved to its left-most position. When you touch the **Enter** key, the new parameter value, if accepted, will appear in the top line of the display.

Use the blue (bottom left) key as a selector when choosing from among several menu items. This right-pointing key also will move the cursor to the right when entering the digits of a new parameter value.

Use the up and down pointing keys to increment up and down when selecting from a vertical list of menu items. You can also use these keys for incrementing values up and down for new data input.

4.1.3 Lockout

The local operator interface (LOI) has a lockout feature that prevents nuisance actuation by someone brushing against the glass window, raindrops, dirt, insects, etc. This lockout mode is automatically established when no buttons are pushed for 30 seconds (default). This countdown to lockout is configurable.

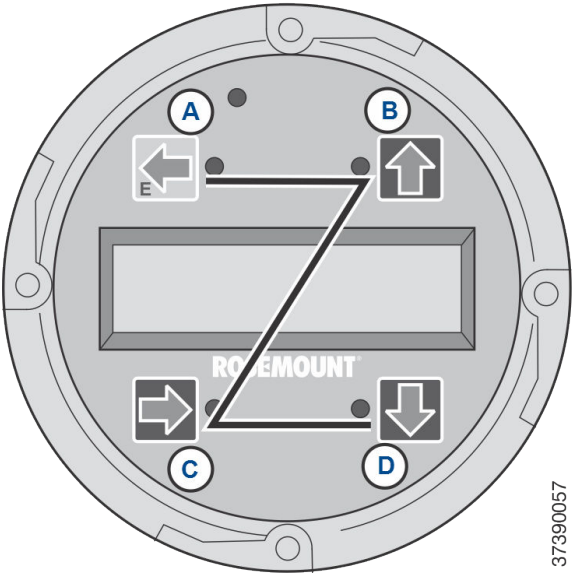
In order to unlock the display, input a *Z* pattern (Figure 4-2). First, touch the top left (gray) **Enter** key. Next, touch the top right key, followed by the bottom left key and the bottom right key. The **LK** notation in the upper right corner of the display will disappear. Touch **Enter** once more to enter into the menu structure. Whenever you touch a key, additional time to lockout is provided, so that the lockout feature does not become a nuisance. This additional revert time is one hour (default) and is also user configurable.

⚠ CAUTION

Excessive dust can prevent the LOI from entering lockout. This condition can cause uncommanded operations to occur.

Always clean dust and soil away from the LOI screen each time the LOI is used.

Figure 4-2: Z Pattern Entry



5 Calibration

5.1 Fully automatic calibration

If the transmitter is equipped with calibration solenoids, you can program it to automatically calibrate without any operator action.

Refer to Set up autocalibration using the local operator interface (LOI) or Set up autocalibration using HART® to set up the transmitter for fully automatic calibration.

5.1.1 Set up autocalibration using HART®

Use the following procedure to specify a time interval (in hours) at which the transmitter will automatically calibrate.

Note
Automatic calibration is only available on transmitters equipped with calibration solenoids.

Procedure

1. From the ***DEVICE SETUP*** screen, select **DETAILED SETUP**.
2. From the ***DETAILED SETUP*** screen, select **O_2 CALIB PARAMS** or **COE CALIB PARAMS**.
3. If the transmitter is equipped with calibration solenoids and you want timed automatic calibrations, select **Solenoids**; then select **Yes**. Select **No** to disable the calibration solenoids.
4. Select **O_2 CalIntrvl** (O_2 calibration interval) and enter the desired time in hours between automatic O_2 calibrations. Select **COE CalIntrvl** and enter the desired time between automatic COe calibrations. To disable automatic calibration for O_2 and COe, enter **0** for both **CalIntrvl** parameters.

   If you want, you can change the **O_2 NxtCalTm** and the **COeNxtCalTm** (next calibration time) parameters to synchronize a calibration at a specific day or time.

⚠ CAUTION

When setting automatic calibration times, set CalIntrvl and NxtCalTm so that O_2 and COe are NOT calibrated simultaneously.

Note
To select a menu item, either press **Up** and **Down** to scroll to the menu item and press **Right** or use the number keypad to select the menu item number.

To return to a preceding menu, press **Left**.

5. From the ***O_2 CALIB PARAMS*** screen, select **CalIntrvl** (O_2 calibration interval).
6. At the prompt, input a time interval (in hours) at which an automatic O_2 calibration will occur and press **ENTER**.
7. From the ***DETAILED SETUP*** screen, select **COE CALIB PARAMS**.
8. From the ***COE CALIB PARAMS*** menu, select **CalIntrvl**.
9. At the prompt, input a time interval (in hours) at which an automatic COe calibration will occur and press **ENTER**.

5.2 Operator-initiated autocalibration

An operator can initiate an automatic calibration at any time, as long as the transmitter is equipped with calibration solenoids.

5.2.1 Autocalibrate using HART®

Procedure

1. From the ***DEVICE SETUP*** menu, select **DIAG/SERVICE**.
2. From the ***DIAG/SERVICE*** menu, select **CALIBRATE**.
3. From the ***CALIBRATE*** menu, select PERFORM CAL.
4. From the ***PERFORM CAL*** menu, select **CAL METHODS**.
5. From the ***CAL METHODS*** menu, select the type of calibration desired: **O_2 Calibration**, **COe Calibration**, or **O_2 and COe Calibration**.

5.3 Manual calibration

If a transmitter is not equipped with calibration solenoids, an operator must calibrate by following prompts from the transmitter.

5.3.1 Calibrate manually using the optional local operator interface (LOI)

Once the operator initiates the manual calibration procedure at the LOI, a series of prompts will appear giving instructions to the operator.

Procedure

1. Press **Right** to select the ***CALIBRATION*** first column submenu.
2. From the ***CALIBRATION*** submenu, press **Right** to select the ***Cal Control*** second column submenu.
3. From the ***Cal Control*** submenu, press **Right** to select the third column **Start Cal O_2** option.

4. Remain at **Start Cal O_2** or press **Down** to select **Start Cal COe** or **Start Cal Both**.

   The following sequence applies when you select **Start Cal Both**.

5. Press **Right** to start the calibration. Turn on the low O_2 test gas, when prompted by the **Flow Low Gas** message.
6. Press **Right** after applying the low O_2 test gas.
   The calibration data changes as the calibration proceeds.
7. Press **Right** when the low O_2 reading is stable. Turn off the low O_2 test gas and turn on the high O_2 test gas as prompted by the **Flow High Gas** message.
8. Press **Right** after applying the high O_2 test gas.
   The calibration data changes as the calibration proceeds.
9. Press **Right** when the high O_2 reading is stable. Turn off the high O_2 test gas. Press **Right** to start the high O_2 gas purge. When the purge period expires, the LOI display reverts to the normal operation display. If the calibration failed, the display will indicate an alarm condition.
10. Press **Right** to start combustibles calibration. Turn on the CO test gas when prompted.
11. Press **Right** after applying the CO test gas.
    The calibration data changes as the calibration proceeds.
12. Press **Right** when the CO reading is stable.
13. Turn off the CO test gas and press **Right** to start the CO gas purge.
    When the purge period expires, the LOI display reverts to the normal operation display. If the calibration failed, the display will indicate an alarm condition.

5.3.2 Calibrate O_2 manually using the Field Communicator - HART®

To perform a manual O_2 calibration using the HART communicator or AMS, use the following procedure.

Note
To select a menu item, either use the up and down arrow keys to scroll to the menu item and press the right arrow key or use the number keypad to select the menu item number.

To return to a preceding menu, press the left arrow key.

Procedure

1. Select ***DIAG/SERVICE*** from *DEVICE SETUP* menu.
2. Select ***CALIBRATION*** from the *DIAG/SERVICE* menu.

3. Select ***CAL CONTROL*** from the *CALIBRATION* menu.
4. Select ***CAL METHODS*** from the *CAL CONTROL* menu.
5. From the *CAL METHODS* menu, select the type of calibration desired: ***O_2 Calibration***.
   In the first Calibration screen, a `Loop should be removed from automatic control` warning appears.
6. Remove the transmitter from any automatic control loops to avoid a potentially dangerous operating condition and press **OK**.
7. The Calibration screen should be set to the following settings/values. Press **OK** to continue.
   - OCX: TAG NAME
   - STATUS: Idle
   - TIME REMAIN: 0s
   - O2: 0.4 %, 85.95 mV
   - **OK/NEXT** to Select
   - **ABORT/CANCEL** to Exit
8. From the *SELECT ACTION* screen, select **START/NEXT CALSTEP** to continue calibration, select **ABORT CAL** to abort calibration or **EXIT CAL** to exit calibration. Select one item from the list and press **ENTER**.
   - OCX: TAG NAME
   - SELECT ACTION
     - 1. **START/NEXT CALSTEP**
     - 2. **ABORT CAL**
     - 3. **EXIT CAL**
9. When the Calibration Status is at the AppO_2Low step, switch on O_2 Low Gas. Verify the O_2 concentration measured matches the O_2 LOW GAS parameter in the Setup. Press **OK** when ready.
10. Select **Start/Next Cal Step** to start applying the O_2 Low Gas.
    The time to apply the test gas is specified by the Gas Time.
    The Calibration Status should be automatically changed to FlowO_2Low and then ReadO_2Low for a period of time. During this period, if you try to go to the next calibration step by pressing **OK** and selecting **Start/Next Cal Step**, you will be prompted with Operator step command is not accepted at this

time. The **Next Cal Step** command is not accepted at this time. When ready, Calibration Status will stop at the AppO_2Hi.

11. Switch off the O_2 Low Gas and switch on the O_2 High Gas. Verify the O_2 concentration measured matches the O_2 HIGH GAS parameter in the Setup. Press **OK** when ready.
12. Select **Start/Next Cal Step** to start applying the O_2 High Gas.

    The time to apply the test gas is specified by the Gas Time.

    The Calibration Status should be automatically changed to FlowO_2Low and then ReadO_2Low for a period of time. During this period, if you try to go to the next calibration step by pressing **OK** and selecting **Start/Next Cal Step**, you will be prompted with Operator step command is not accepted at this time. The **Next Cal Step** command is not accepted at this time. When ready, Calibration Status will stop at the AppO_2Hi. When ready, Calibration Status will stop at STOP GAS.
13. Switch off the O_2 High Gas. Press **OK** when ready. Select **Start/Next Cal Step** to start purging gas.

    The time to purge gas is specified by the Purge Time.

    When the Purge step is complete, the Calibration Status will be at IDLE if the calibration is successful or CAL RECOMMENDED if the calibration has failed. A Calibration Failed alarm will be set if the calibration has failed.
14. When calibration is complete, select **Exit Cal** to exit the calibration method.

5.3.3 Calibrate COe manually using the Field Communicator: HART®

If necessary, refer to Figure 1 for the HART menu tree.

Note

To select a menu item, either use **Up** and **Down** to scroll to the menu item and press **Right** or use the number keypad to select the menu item number.

To return to a preceding menu, press **Left**.

Procedure

1. From the ***DIAG/SERVICE*** menu, select **CALIBRATION**.
2. From the ***CAL METHODS*** menu, select the type of calibration desired: **COe Calibration**.
   In the first ***Calibration*** screen, a **Loop should be removed from automatic control** warning appears.
3. Remove the transmitter from any automatic control loops to avoid a potentially dangerous operating condition and press **OK**.

4. Set the main ***Calibration*** screen to the following settings/ values. Press **OK** to continue.
   - OCX: TAG NAME
   - STATUS: Idle
   - TIME REMAIN: 0s
   - OK/NEXT to Select
   - ABORT/CANCEL to Exit
5. Switch on the COe high gas. Verify the COe concentration measured matches the **COe HIGH GAS** parameter in the ***Setup*** window. Press **OK** when ready.
6. When calibration is complete, select **Exit Cal** to exit the calibration method.

5.3.4 Calibrate O_2 and COe manually using the Field Communicator: HART®

To perform a manual O_2 and COe calibration using the Field Communicator or AMS, use the following procedure.

Note
To select a menu item, use either **Up** or **Down** to scroll to the menu item and press **Right** or use the number keypad to select the menu item number.

To return to a preceding menu, press the **Left**.

Procedure

1. Select **DIAG/SERVICE** from the ***DEVICE SETUP*** menu.
2. Select **CALIBRATION** from the ***DIAG/SERVICE*** menu.
3. Select **CAL CONTROL** from the ***CALIBRATION*** menu.
4. Select **CAL METHODS** from the ***CAL CONTROL*** menu.
5. From the ***CAL METHODS*** menu, select the type of calibration desired: **O2 and COe Calibration**.
   In the first ***Calibration*** screen, a **Loop should be removed from automatic control** warning appears.
6. Remove the transmitter from any automatic control loops to avoid a potentially dangerous operating condition and press **OK**.
7. Set the main ***Calibration*** screen to the following values. Press **OK** to continue.
   - OCX: TAG NAME

- STATUS: Idle
- TIME REMAIN: 0s
- O2: 0.4%, 85.95 mV
- COe: 0.20 ppm
- OK/NEXT to Select
- ABORT/CANCEL to Exit

8. From the ***SELECT ACTION*** screen, select **START CAL/STEP CAL** to continue calibration, select **ABORT CAL** to abort calibration, or select **EXIT CAL** to exit calibration method. Select one from the list and press **ENTER**.
   - OCX: TAG NAME
   - SELECT ACTION
     - 1. START CAL/STEP CAL
     - 2. ABORT CAL
     - 3. EXIT CAL
9. When the **Calibration Status** is at the **AppO2Low** step, switch on O_2 low gas. Verify the O_2 concentration measured matches the **O2 LOW GAS** parameter in ***Setup CAL***. Press **OK** when ready.
10. When the **Calibration Status** is at the **AppO2Low** step, switch on O_2 low gas. Verify the O_2 concentration measured matches the **O2 LOW GAS** parameter in ***Setup***. Press **OK** when ready.
11. Select **START CAL/STEP** to start applying the O_2 low gas.

    The time to apply the test gas is specified by the **Gas Time**.

    The **Calibration Status** should automatically change to **FIowO2Low** and then **ReadO2Low** for a period of time. During this period, if you try to go to the next calibration step by pressing **OK** and selecting **START CAL/STEP CAL**, you will be prompted with **Operator step command is not accepted at this time**. When ready, **Calibration Status** will stop at **AppO2Hi**.
12. Switch off the O_2 low gas and switch on the O_2 high gas. Verify the O_2 concentration measured matches the **O2 HIGH GAS** parameter in ***Setup***. Press **OK** when ready.
13. Select **START CAL/STEP CAL** to apply the O_2 high gas.

    The time to apply the test gas is specified by the **Gas Time**.

    The **Calibration Status** should automatically change to **FIowO2Hi** and then **ReadO2HI** for a period of time. During this

period, if you try to go to the next calibration step by pressing **OK** and selecting **START CAL/STEP CAL**, you will be prompted with **Operator step command is not accepted at this time**. When ready, **Calibration Status** will stop at **AppCOeHi**.

14. Switch off the O_2high gas and switch on the COe Gas. Verify the COe concentration measured matches the **COe TEST GAS** parameter in the Setup. Press **OK** when ready.
15. Select **START CAL/STEP CAL** to start applying the COe Gas. The time to apply the test gas is specified by the **Gas Time**. The **Calibration Status** should automatically change to **FIowCOeHi** and then **ReadCOeHi** for a period of time. During this period, if you try to go to the next calibration step by pressing **OK** and selecting **START CAL/STEP CAL**, you will be prompted with **Operator step command is not accepted at this time**. The **START CAL/STEP CAL** command is not accepted at this time. When ready, **Calibration Status** will stop at **STOP GAS**.
16. Switch off the COe gas. Press **OK** when ready. Select **START CAL/STEP CAL** to start purging gas.

    The time to apply the test gas is specified by the **Purge Time**.

6 Product certifications

6.1 Directive information

The most recent revision of the Declaration of Conformity can be found at Emerson.com/Rosemount.

6.2 Ordinary location certification

As standard, the transmitter has been examined and tested to determine that the design meets the basic electrical, mechanical, and fire protection requirements by a nationally recognized test laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

6.3 Installing equipment in North America

The US National Electrical Code® (NEC) and the Canadian Electrical Code (CEC) permit the use of Division marked equipment in Zones and Zone marked equipment in Divisions. The markings must be suitable for the area classification, gas, and temperature class. This information is clearly defined in the respective codes.

6.4 Rosemount OCX8800 Oxygen/Combustibles Transmitter (OCX88A) for general purpose locations

6.4.1 USA/Canada

CSA

Certificate: 1602514

Standards: C22.2 No. 0:10 (September 2010),
C22.2 No 94.2:20 (Third Edition),
C22.2 No. 61010-1-12,
ANSI/ISA-61010-1 (82.02.01) (Third Edition)
ANSI/UL 50E-2020 (Third Edition)

Markings: Type 4X, IP66**
**when reference air vents are routed to a dry area

6.5 Rosemount OCX8800 Oxygen/Combustibles Transmitter (OCX88C) for Hazardous Locations and Sensor Models 00088-0100-0001 and 00088-0100-0002

6.5.1 USA/Canada

CSA

Certificate: 1602514

Standards: C22.2 No. 0-10, C22.2 No 94.2:20 (Third Edition)
C22.2 No. 61010-1-12, CAN/CSA-C22.2 No. 60079-0:15
CAN/CSA-C22.2 No. 60079-1:16, ANSI/ISA-60079-0 (12.00.01)-2013
ANSI/ISA-60079-1 (12.22.01)-2009 (R2013)
ANSI/ISA-61010-1 (82.02.01) (Third Edition)
ANSI/UL 50E-2020 (Third Edition)

Markings: 

Class 1, Zone 1, AEx db IIB+H_2 T* Gb
Ex db IIB+H_2 T* Gb
Type 4X, IP66**
*Sensor assembly enclosure: T3 (-40 °C <= Tamb <= +100 °C)
*Electronics assembly enclosure: T6 (-40 °C <= Tamb <= +65 °C)
*Integral configuration: T3 (-40 °C <= Tamb <= +65 °C)
**when reference air vents are routed to a dry area

Conditions of Acceptability

1. Calibration air lines and reference air lines shall not contain pure oxygen or combustible gas other than inert/oxygen gas mixture of which oxygen represents no more than that normally present in air.
2. The pressure within the enclosure and gas lines shall not be higher than 1.1 times the atmospheric pressure during the normal operation of the equipment.

6.5.2 Europe

ATEX/UKCA

ATEX Certificate:	KEMA 04ATEX2308 X
UKCA Certificate:	DEKRA 21UKEX0287 X
Standards:	EN IEC 60079-0:2018 EN 60079-1: 2014
Markings:	Ex II 2G Ex db IIB + H_2 T3 Gb* *Temperature Classification and Ambient temperature range: T6 (split architecture – transmitter assembly) -40°C to +65°C T3 (split architecture – sensor assembly) -40°C to +100°C T3 (integral version) -40°C to +65°C

Specific Conditions of Use (X):

1. Calibration air lines and reference air lines shall not contain pure oxygen or combustible gas other than inert/oxygen gas mixture of which oxygen represents no more than normally present in air.
2. The pressure within the enclosure and gas lines shall not be higher than 1.1 times atmospheric pressure during normal operation.
3. Flameproof joints are not intended to be repaired.
4. Precautions shall be taken to minimize the risk from electrostatic discharge of painted parts.

6.5.3 International

IECEx

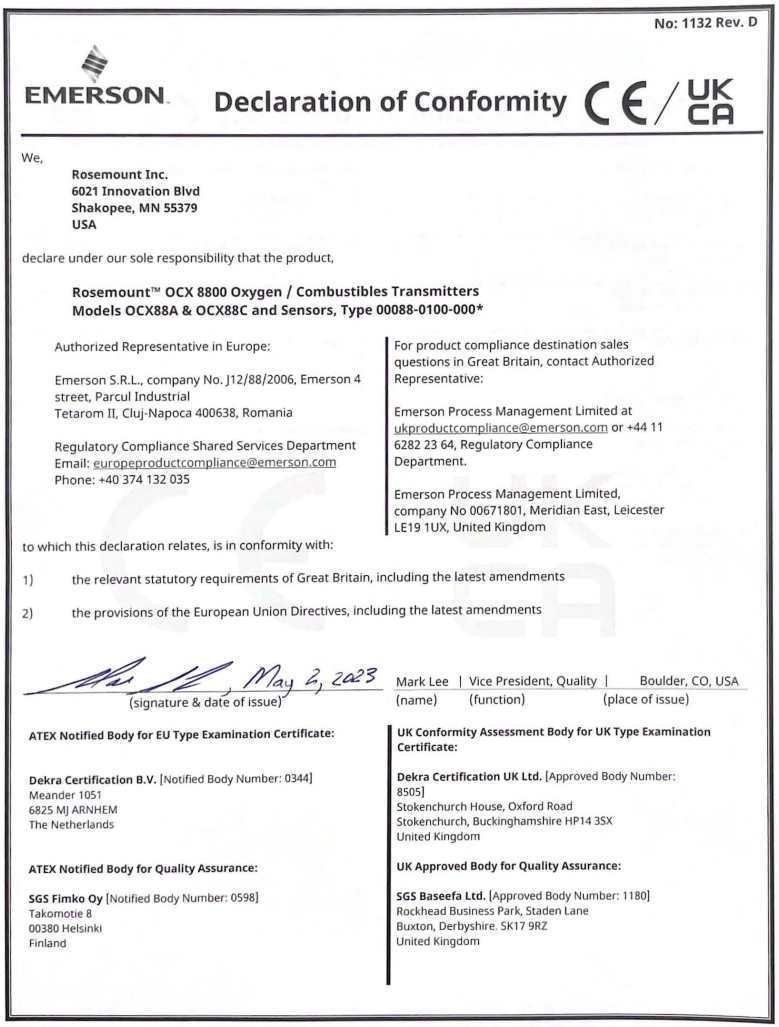
Certificate:	IECEx CSA 10.0002X
Standards:	IEC 60079-0: 2017 Edition 7.0 IEC 60079-1: 2014-06 Edition 7.0
Markings:	Transmitter: Ex db IIB+H_2 T6 Gb; Tamb: -40 °C to 65 °C Sensor: Ex db IIB+H_2 T3 Gb; Tamb: -40 °C to 100 °C

Integral Version: Ex db IIB+H_2 T3 Gb; Tamb: -40 °C to 65 °C

Specific Conditions of Use (X):

1. Calibration air lines and reference air lines shall not contain pure oxygen or combustible gas other than inert/oxygen gas mixture of which oxygen represents no more than normally present in air.
2. The pressure within the enclosure and gas lines shall not be higher than 1.1 times atmospheric pressure during normal operation.
3. Flameproof joints are not intended to be repaired.

7 Declaration of Conformity



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Declaration of Conformity CE / UK CA

We,

Rosemount Inc.
6021 Innovation Blvd
Shakopee, MN 55379
USA

declare under our sole responsibility that the product,

Rosemount™ OCX 8800 Oxygen / Combustibles Transmitters
Models OCX88A & OCX88C and Sensors, Type 00088-0100-000*

Authorized Representative in Europe:

Emerson S.R.L., company No. J12/88/2006, Emerson 4 street, Parcul Industrial
Tetarom II, Cluj-Napoca 400638, Romania

Regulatory Compliance Shared Services Department
Email: europeproductcompliance@emerson.com
Phone: +40 374 132 035

For product compliance destination sales questions in Great Britain, contact Authorized Representative:

Emerson Process Management Limited at ukproductcompliance@emerson.com or +44 11 6282 23 64, Regulatory Compliance Department.

Emerson Process Management Limited, company No 00671801, Meridian East, Leicester LE19 1UX, United Kingdom

to which this declaration relates, is in conformity with:

1) the relevant statutory requirements of Great Britain, including the latest amendments

2) the provisions of the European Union Directives, including the latest amendments

May 2, 2023
(signature & date of issue)

Mark Lee | Vice President, Quality | Boulder, CO, USA
(name) (function) (place of issue)

ATEX Notified Body for EU Type Examination Certificate:

Dekra Certification B.V. [Notified Body Number: 0344]
Meander 1051
6825 MJ ARNHEM
The Netherlands

ATEX Notified Body for Quality Assurance:

SGS Fimko Oy [Notified Body Number: 0598]
Takomotie 8
00380 Helsinki
Finland

UK Conformity Assessment Body for UK Type Examination Certificate:

Dekra Certification UK Ltd. [Approved Body Number: 8505]
Stokenchurch House, Oxford Road
Stokenchurch, Buckinghamshire HP14 3SX
United Kingdom

UK Approved Body for Quality Assurance:

SGS Baseefa Ltd. [Approved Body Number: 1180]
Rockhead Business Park, Staden Lane
Buxton, Derbyshire. SK17 9RZ
United Kingdom

No: 1132 Rev. D

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Declaration of Conformity CE / UK CA

EMC Directive (2014/30/EU)

Harmonized Standards:
EN 61326-1:2013

Low Voltage Directive (2014/35/EU)
Harmonized Standards:
EN 61010-1:2010

PED Directive (2014/68/EU)
Sound Engineering Practice

ATEX Directive (2014/34/EU)

(Only valid for Models OCX88C and Sensors, Type 00088-0100-000*)
KEMA 04ATEX2308 X – Explosion proof
Equipment Group II 2 G
Ex db IIB+H2
T6 Gb (split architecture – electronics assembly)
T3 Gb (split architecture – sensor assembly)
T3 Gb (integral version)

Harmonized Standards:
EN IEC 60079-0:2018
EN 60079-1:2014

Electromagnetic Compatibility Regulations 2016 (S.I. 2016/1091)
Designated Standards:
EN 61326-1:2013

Electrical Equipment (Safety) Regulations 2016 (S.I. 2016/1101)
Designated Standards:
EN 61010-1:2010

Pressure Equipment (Safety) Regulations 2016 (S.I. 2016/1105)
Sound Engineering Practice

Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016 (S.I. 2016/1107)

(Only valid for Models OCX88C and Sensors, Type 00088-0100-000*)
DEKRA 21UKEX0287X – Explosion proof
Equipment Group II 2 G
Ex db IIB+H2
T6 Gb (split architecture – electronics assembly)
T3 Gb (split architecture – sensor assembly)
T3 Gb (integral version)

Designated Standards:
EN IEC 60079-0:2018
EN 60079-1:2014

8 China RoHS table

表格 1: 含有 China RoHS 管控物质超过最大浓度限值的部件型号列
Table 1: List of Model 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
壳体组件 Housing Assembly	O	O	O	X	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.

Quick Start Guide
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For more information: **Emerson.com**

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