

SAFE INSTALLATION MANUAL (CENELEC APPROVAL)
**TWO-WIRE TEMPERATURE TRANSMITTER
(intrinsically safe)**
MODEL 27 Series
BEFORE USE
■ SAFETY PRECAUTIONS

This manual describes important points of caution for safe use of this product in potentially explosive atmosphere. Please read this manual carefully before installing and operating the product.

■ SPECIAL CONDITIONS FOR SAFE USE

1. If the transmitter is mounted in a non-metallic enclosure and if it is used in an explosive gas atmosphere where the use of equipment of category 1 G is required, it shall be installed such, that electrostatic charging of the enclosure is avoided.
2. If the transmitter is mounted in an enclosure of light metal and if it is used in an explosive gas atmosphere where the use of equipment of category 1 G is required, it shall be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction are excluded.

■ MODEL NUMBER IDENTIFICATION

- Model No. 27 -
- 1) FUNCTION _____
 - 27HU : Universal temperature input (HART)
 - 27U : Universal temperature input
 - 27TS : Thermocouple input
 - 27RS : RTD input
 - 27R : RTD input (non-isolated)
 - 2) SAFETY APPROVAL _____
 - 0 : None
 - 2 : CENELEC intrinsically safe (ATEX)
 - 3) OPTIONS _____
 - /L : Ultra-low temperature drift (27HU only)
 - X : Special specification

■ MANUFACTURED DATE CODE IDENTIFICATION

The manufactured year and month can be identified by the serial number described on the specification label.

- Serial No. Y M xxxxxx
- | | |
|------------|----------|
| YEAR _____ | |
| V : 2008 | 1 : 2011 |
| W : 2009 | : : |
| X : 2010 | 9 : 2019 |
-
- | | |
|--------------|--|
| MONTH _____ | |
| A : January | |
| B : February | |
| C : March | |
| : : | |
| L : December | |

⚠ WARNING
Explosions could result in death or serious injury:

- Before you remove the unit or mount it, or before you connect or disconnect the wiring, turn off the power supply and the input signal for safety. Do not disconnect unless the area is known to be non-explosive.
- Whenever you need to measure voltage across the terminals, to apply a simulated input signal to the terminals, or to connect the Bell202 Modem to the transmitter, make sure that there is no danger of explosion in the atmosphere.
- Before connecting a HART communicator to the 27HU in an explosive atmosphere, make sure the instruments in the loop are installed in accordance with intrinsically safe field wiring practices.
- Verify the certification of the product described on the specification label on the product.
- Verify that the operating atmosphere of the transmitter is consistent with the appropriate hazardous locations certifications.
- Verify that the environmental temperature is within the temperature class required for the area.

Failure to follow these installation guidelines could result in death or serious injury:

- Make sure only qualified personnel perform the installation.

⚠ SAFETY FEATURES & CAUTIONS
■ INTRINSICALLY SAFE APPROVAL

- CENELEC / ATEX
 - EC-Type Examination Certificate: KEMA 05ATEX1114 X
 - ⊕ II 1G Ex ia IIC T4, T5, T6
 - Zone 0
- Applicable Standards
 - EN 60079-0 : 2006
 - EN 60079-11 : 2007
 - EN 60079-26 : 2007
- IS Data

U _i = 30V DC	U ₀ = 30V DC
I _i = 96mA DC	I ₀ = 24mA DC
P _i = 720mW	P ₀ = 180mW
C _i = 1 nF	C ₀ = 50 nF
L _i = 0 mH	L ₀ = 40 mH
- Prior to installation, check that the safety class of this unit satisfies the system requirements.
- The transmitter shall be mounted in an enclosure with a protection level of at least IP20 in accordance with EN 60529. When the environmental conditions are such that a higher degree in ingress protection is required, this shall be taken into account.
- A safety barrier must be installed between the unit and its power supply. Refer to "Installation Diagram" attached at the end of this manual when selecting a safety barrier.
- The power supply and the safety barrier must be located in a non-hazardous area.

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- Environmental temperature must be within the following ranges depending upon the required temperature class.

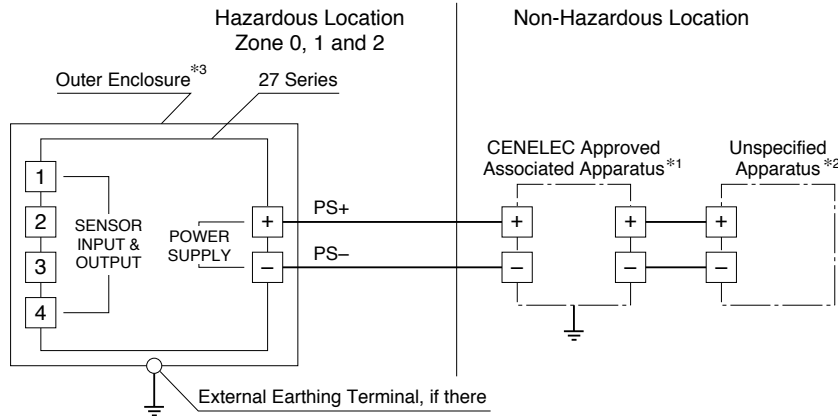
T4 : $-40^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$

T5 : $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

T6 : $-40^{\circ}\text{C} \leq T_a \leq +45^{\circ}\text{C}$

- DO NOT RUB the surface of the plastic enclosure with a dry cloth. Electrostatic charge generated by the friction may cause an explosion.
- The wiring method must be in accordance with the electrical parameters described in this manual.
- Substitution of components may impair suitability for the hazardous location and may cause an explosion.

INSTALLATION DIAGRAM for CENELEC INTRINSICALLY SAFE MODEL



ELECTRICAL DATA

Power Supply (+ and -)

Maximum Input Voltage U_i : 30 V

Maximum Input Current I_i : 96 mA

Maximum Input Power P_i : 0.72 W

Maximum Internal Capacitance C_i : 1 nF

Maximum Internal Inductance L_i : 0 mH

Sensor Circuit (1 to 4)

Maximum Output Voltage U_o : 30 V

Maximum Output Current I_o : 24 mA

Maximum Output Power P_o : 180 mW

Maximum External Capacitance C_o : 50 nF

Maximum External Inductance L_o : 40 mH

NOTES

*1 : In any safety barrier, the output current of the barrier must be limited by a resistor 'R' such that $I_o = U_o / R$.
The safety barrier must be certified by an EEC approved certification body to EEx ia IIC.
In case of isolated barrier, the earth is not required.

*2 : Apparatus which is unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250 Volts RMS.

*3 : Install into an adequate enclosure which has at least IP20 protection degree.



Specifications are subject to change without notice.