Innovative temperature measurement indication and transmission

HART COMMUNICATION PROTOCOL

IEC IECEx

loop powered

for use in

hazardous and safe areas

visit our website **www.beka.co.uk/tx**

BEKA associates

NEW

Loop powered indicating temperature transmitters

eliminate the need for Zener barriers or galvanic isolators

These new smart loop powered 4/20mA indicating transmitters have HART® communication, sensor diagnostics and can show temperature or other process variables on their large display while transmitting a linear 4/20mA and HART® digital output.

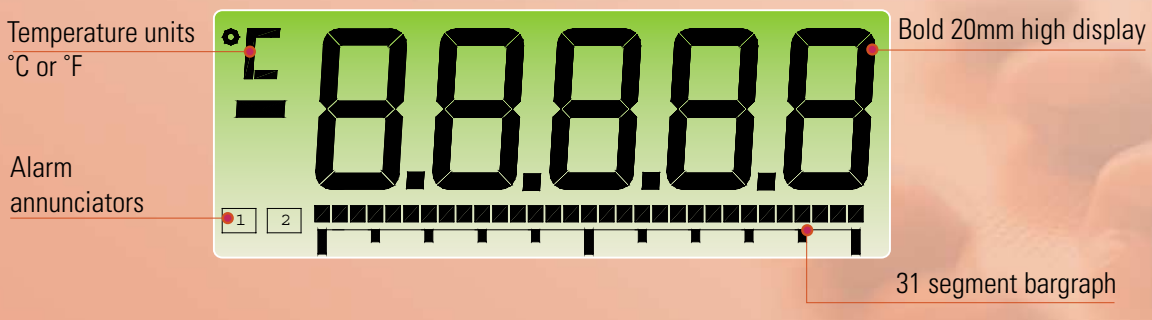
The robust field mounting models significantly reduce the cost of hazardous area temperature measurement by eliminating the need for Zener barriers and galvanic isolators in many applications.

All the hazardous area models have ATEX and IECEx certification and North American approvals will soon be available allowing these innovative transmitters to be used worldwide.

HART COMMUNICATION PROTOCOL

- **Large display with 31 segment bargraph**
- **4/20mA loop powered**
- **RTD, THC, voltage or resistance input**
- **HART® communication with transmitter and sensor diagnostics**
  protocol revision 7.
- **BA474ND Ex n certified with intrinsically safe sensor input**
  permits transmitter installation in Zone 2 with sensor in Zone 0, 1 or 2 without the need for Zener barriers or galvanic isolators.
- **BA474D intrinsic safety and associated apparatus certification**
  permits sensor in Zone 0, 1 or 2 without the need for Zener barriers or galvanic isolators when transmitter is installed in a safe area.
- **BA474D and BA478C intrinsic safety certification**
  permits transmitter installation in Zones 0, 1 or 2 when protected by Zener barriers or galvanic isolators.
- **Dust certification**
- **Field mounting models have IP66 protection with separate terminal compartment**
- **Panel mounting models have 144 x 72mm DIN enclosure with IP66 front of panel protection**
- **Non-certified field and panel mounting models available for use in safe areas**
- **Optional loop powered Backlight does not require additional barriers, isolators or field wiring**
- **Optional Dual Alarms**
- **3 year guarantee**

Display shown full size



Applications

Zone 0, 1, 2, 20, 21 or 22

Intrinsic safety associated apparatus certification permits a **BA474D transmitter** to be directly connected to sensors in Zone 0, 1, 2, 20, 21 or 22 without Zener barriers or galvanic isolators.
Dust certification is an option.

Zone 2 or 22

Safe area

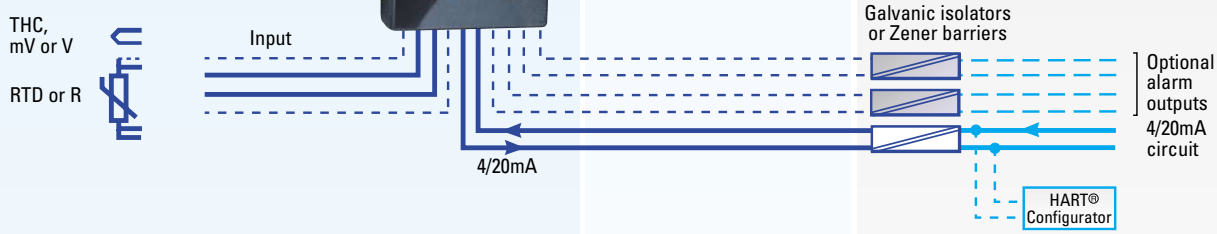
Field mounting BA474D

Field mounting BA474ND

Intrinsically safe galvanically isolated input permits **BA474ND Ex n certified transmitter** to be connected to sensors in Zone 0, 1, 2, 20, 21 or 22 without Zener barriers or galvanic isolators.

Field mounting BA474D

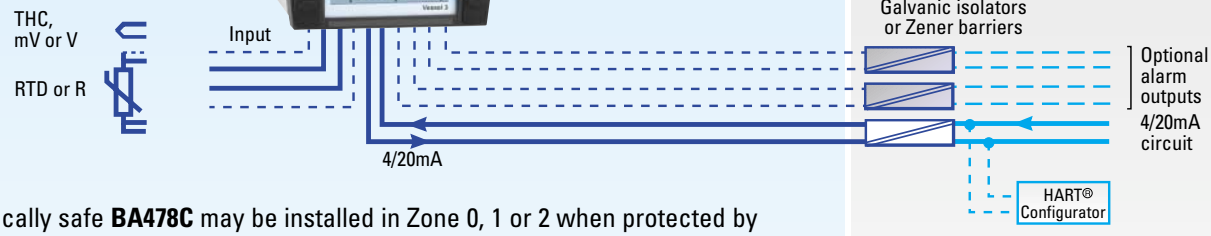
Zener barriers or galvanic isolators are only required when an intrinsically safe **BA474D** is installed in Zone 0, 1, 2, 20, 21 or 22.
Dust certification is an option



Zone 0, 1 or 2

Panel mounting BA478C

Safe area



Intrinsically safe **BA478C** may be installed in Zone 0, 1 or 2 when protected by Zener barriers or galvanic isolators

Safe area field mounting **BA674D** and panel mounting **BA678C Indicating Temperature Transmitters** complete the range.

Intrinsically safe models

Model	BA474D	BA478C
Mounting	Field	Panel 144 x 72mm DIN enclosure
Protection	IP66	Front IP66 Rear IP20
Certification	**ATEX and IECEx**	**ATEX and IECEx**
Instrument	II 1G, Ga Ex ia IIC T5 II (1)G, (Ga) [Ex ia] IIC (associated apparatus) Ta = -40 to +70˚C	II 1G Ga Ex ia IIC T5 Ta = -40 to +70˚C
Sensor input	Intrinsically safe II 1G Ga Ex ia IIC T5	
	OR with optional dust certification	
Instrument	II 1D, Ex iaD 20 T80˚C IP66 II (1) D, [Ex iaD] (associated apparatus)	
Sensor input	Intrinsically safe II 1GD Ga Ex ia IIC T5 and Ex iaD Ta = -20 to +60˚C	

Type n model

Model	BA474ND
Mounting	Field
Protection	IP66
Certification	**ATEX and IECEx**
Instrument	II 3 GD, Ex nA nL [ia] IIC T5 Ex tD [iaD] A22 IP66 T80˚C Ta = –20 to +60˚C
Sensor input	Intrinsically safe II 1GD Ga Ex ia IIC T5 and Ex iaD

Safe area models

Model	BA674D	BA678C
Mounting	Field	Panel 144 x 72mm DIN enclosure
Protection	IP66	Front IP66 Rear IP20

Common specification

for detailed specification please see individual product datasheets at **www.beka.co.uk/tx**

Supply voltage

Without backlight	9 to 28V
With backlight	15.5 to 28V

Output

Operating range	3.8 to 20.5mA
Resistance	5MΩ min

Display

Type	20mm high -99999 to 99999 and 31 segment bargraph with optional backlight
Reading rate	2 per second

Input

Resistance thermometer	3 wire, 4 wire or differential; Pt100 or Pt1000
Thermocouple	Type B, E, J, K, N, R, S or T
Resistance	Adjustable between 0 and 10kΩ; min span 10Ω
Voltage	Adjustable between ±1.9V; min span 2mV

Diagnostics Generally as NAMUR NE107. Output via HART® and under or over range output current

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