

8-channel Analog Input

0-10V/potentiometer input

8230-AI-IS

- ◆ 8 single-ended input channels
- ◆ intrinsically safe field circuits
- ◆ 0-10V/100Ω-10kΩ potentiometer
- ◆ 0/4 - 20mA current input with additional burden resistor
- ◆ true zero on voltage input
- ◆ open circuit field wiring detection

MODULE SPECIFICATION

See also System Specification

INPUTS

Number of channels 8, single-ended

0-10V input characteristics

Nominal signal range (span) 0 to 10V
 Full signal range 0 to +11V
 Resolution 16 bits
 Input impedance > 100kΩ
 Under-range indication -100mV

Potentiometer input characteristics

Nominal signal range (span) 0 to 100 % of travel
 Potentiometer resistance 100Ω to 10kΩ
 Excitation voltage (nom.) 10V (from 2.2kΩ source)
 Resolution (≥1kΩ potentiometer) 14 bits
 Resolution (100Ω potentiometer) 11 bits

Accuracy (at 25°C) ± 0.1% of span

Isolation

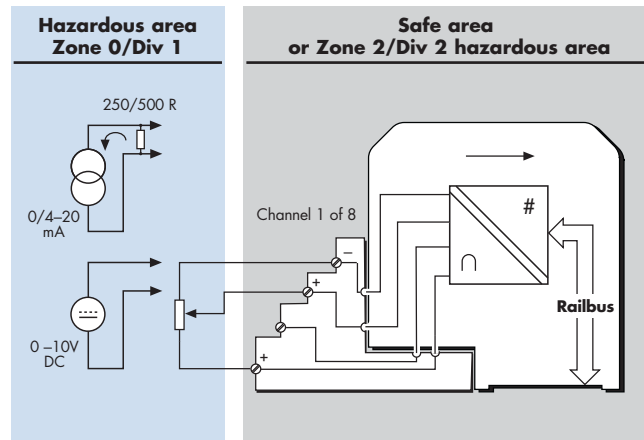
(any channel to Railbus) 100V ac
 (between channels) none

CONFIGURABLE PARAMETERS

Input type (per channel) voltage/potentiometer
Alarms high and low
Alarm deadband (hysteresis) user defined value
Input filter time constant user defined value
Input dead zone user defined value
Drive on open circuit disabled /upscale /downscale
Channel status active/inactive
Lead compensation user defined value

RESPONSE TIME

Signal change to availability on Railbus 33ms (max.)
Open circuit line fault detection time ≤ 5s



SAFETY

Field wiring protection [EExia] IIC

Safety description (each channel - non linear output)
 $U_o \leq 15.75V$, $I_o \leq 20mA$, $P_o \leq 0.315W$

FM entity parameters $V_{oc} = 15.75V$, $I_{sc} = 20mA$
 $C_a = 0.22\mu F$, $L_a = 5mH$

Extract from certificate BAS01ATEX7346U/1

It is permitted to connect an external, intrinsically safe, resistively-limited source of 28V, 300Ω, 93mA to Channels 1 to 8, output terminals VIN_* w.r.t. 0V_A (CON6). When the source is connected to the terminals, the capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to the terminals must not exceed the values detailed in the certificate of the intrinsically safe source.

POWER SUPPLIES

IS Railbus (12V) current

Typical 200mA
 Max with voltage/current inputs 250mA
 Max. with 100Ω potentiometer inputs 350mA

Power dissipation within module

Max with voltage/current inputs 3W
 Max. with 100Ω potentiometer inputs 4.2W

MECHANICAL

Module Key Code C4
Module width 42mm
Weight 200g

FIELD TERMINAL

Field wiring type	Recommended Field Terminal
Intrinsically safe, standard	8623-FT-IS