

DATA SHEET

AI893

ABB Ability™ System 800xA® hardware selector



The Al893 Analog Input Module has 8 channels. The module includes Intrinsic Safety protection components on each channel for connection to process equipment in hazardous areas without the need for additional external devices.

The module can be configured for either 2 or 3-wire RTD sensors or for TC sensors. In TC mode, channel 8 is used for Cold Junction (ambient) temperature measurements, thus serving as CJ-channel for channel 1...7. The junction temperature may be measured locally on the MTUs screw terminals, or on a connection unit distant from the device. The cold junction temperature is measured with a 3-wire Pt 100 sensor. Alternatively, a fixed junction temperature for the module may be set by the user (as parameter). Channel 8 may be used in the same manner as channels 1-7 when no CJ-temperature measurement is needed.

TU890 and TU891 Compact MTU can be used with this module and it enables three wire connections to the process devices without additional terminals. TU890 for Ex applications and TU891 for non Ex applications.

Features and benefits

- 8 differential input channels for 2 or 3-wire RTD and Thermocouple.
- 1 group of 8 channels isolated from ground.
- 15 Bit + sign resolution.
- Ex certified inputs.

General info		
Article number	3BSC690141R1	
Туре	Analog Input	
Signal specification	RTD or TC	
Number of channels	8	
Signal type	Differential	
HART	No	
SOE	No	
Redundancy	No	
High integrity	No	
Intrinsic safety	Yes	
Mechanics	S800	

Detailed data		
Resolution	15 bit + sign	
Input impedance	>10 MΩ	
Isolation	Groupwise isolated from ground	
Error	TC/mV: <20 μ V ; RTD (0-400 Ω): <0.1 Ω ; RTD (0-4000 Ω): <1 Ω	
Temperature drift	TC/mV: <20 μ V/10°C ; RTD (0-400 Ω): <0.1 Ω /10°C ; RTD (0-4000 Ω): <1 Ω /10°C	
Update cycle time	(no of active channels) x 125 + 125 ms	
Common mode voltage input	+/-5V	
CMRR, 50Hz, 60Hz	>100 dB	
NMRR, 50Hz, 60Hz	>80 dB	
Rated insulation voltage	50 V	
Dielectric test voltage	500 V a.c.	
Power dissipation	0.5 W	
Current consumption +5 V Modulebus	Typ. 90 mA, Max. <125 mA	

Diagnostics	
Front LED's	F(ault), R(un), W(arning)
Supervision	Open circuit, Short circuit for RTD

Environment and certification		
CE mark	Yes	
Electrical safety	EN 61010-1, EN 61010-2-201	
Hazardous Location	ATEX/IECEx Zone 2 with interface to Zone 0, cFMus C1, Div 2/Zone 2 with interface to C1, C2, C3 Div 1/Zone 0	
Marine certification	-	
Temperature, Operating	0 to +55 °C (+32 to +131 °F)	
Temperature, Storage	-40 to +70 °C (-40 to +158 °F)	
Pollution degree	Degree 2, IEC 60664-1	
Corrosion protection	ISA-S71.04: G3	
Relative humidity	5 to 95 %, non-condensing	
Max ambient temperature	55 °C (131 °F), for vertical mounting in compact MTU 40 °C (104 °F)	
Protection class	IP20 according to IEC 60529	
Mechanical operating conditions	IEC/EN 61131-2	
EMC	EN 61000-6-4, EN 61000-6-2	
Overvoltage categories	IEC/EN 60664-1, EN 50178	
Equipment class	Class I according to IEC 61140; (earth protected)	
RoHS compliance	DIRECTIVE/2011/65/EU (EN 50581:2012)	
WEEE compliance	DIRECTIVE/2012/19/EU	

Compatibility		
Use with MTU	TU890, TU891	
Keying code	ВА	

Dimensions	
Width	45 mm (1.77")
Depth	102 mm (4.01"), 111 mm (4.37") including connector
Height	119 mm (4.7")
Weight	0.16 kg (0.35 lbs.)

Related products



TU890



TU891



solutions.abb/800xA solutions.abb/controlsystems

800xA and Symphony Plus is a registered trademark of ABB. All rights to other trademarks reside with their respective owners.

We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2025 ABB All rights reserved