Isolated Transmitter

TAxxxPW series

MORNSUN®

Programmable analog isolators with isolated power

RoHS

3 years Warranty

FEATURES

- Input, output and power supply are mutually isolated from each other: 2000VAC
- Ultra-slim 12.5mm case
- High accuracy (0.1% Full Scale)
- High linearity (0.1% Full Scale)
- Extremely low temperature coefficient (50PPM/℃)
- Low power consumption
- Excellent EMC performance
- Mini USB port communication
- Programmable Input / Output range
- Proven reliability with MTBF >500,000 hours

TAxxxPW series of analog isolators and isolators with isolated power are mainly used in systems for industrial automation. They provide an isolated conversion of analog input signals from common industrial instruments into matching analog output signals for the DCS/PLC, by realizing acquisition and transmission of field signal. An independent DC power supply is required to supply the module that isolates the power ports from the signal input and output ports. This series of products contains a combinations of 1 input with 1 output, 1 input with 2 outputs or 2 inputs with 2 outputs. The extremely compact design having a thickness of only 12.5mm, meets the demand for high density installations.

Selection Guide

Transformation Types	1 input 1 output	2 input 2 output	1 input 2 output
Current Input, Current Output (Isolator)	TA100PW	TA200PW	TA600PW
Current Input, Voltage Output (Isolator)	TA120PW	TA220PW	TA620PW
Voltage Input, Voltage Output (Isolator)	TA130PW	TA230PW	TA630PW
Voltage input, Current Output (Isolator)	TA140PW	TA240PW	TA640PW
Current input, Current Output (Isolators with isolated power output)	TA105PW	TA205PW	TA605PW
Current input, Voltage Output (Isolators with isolated power output)	TA125PW	TA225PW	TA625PW
Input Signal	--		
Input Type	Input signal		
Current input	4-20mA / 0-20mA（Programmable）		
Voltage input	0-5V / 0-10V / 1-5V / 2-10V（Programmable）		
Output Signal	--		
Output Type	Output signal		
Current Output	4-20mA / 0-20mA（Programmable）		
Voltage Output	0-5V / 0-10V / 1-5V / 2-10V（Programmable）		

Note:1. The customer must define type of input signal, measuring range and form of output signal when placing the order; customizations are available on request;
2. The auxiliary USB adapter model is T-01; please contact our technical staff for specific information.

Input Specifications

Item		Value
Power Input	Input Voltage	18~30VDC(Typical values 24VDC)
	Power Dissipation (isolators)	1 input 1output≤1.3W 1 input 2 output, 2 input 2 output≤1.8W
	Power Dissipation (isolators with isolated power output)	1 input 1output≤1.8W 1 input 2 output, 2 input 2 output≤2.2W
	Power Protection	Reverse polarity protection, over-voltage protection
Field Area	Input Impedance	≤ 25Ω （Input current signal）
		≥500kΩ （Input voltage signal）
	Isolation Power Output	No-load 24VDC±10%, 20mA output ≥ 20VDC
	Distribution Output Protection	Short-circuit protection

Output Specifications

Item		Operating Conditions					
Control Area	Fault Output	--					
	Output Type	4-20mA	0-20mA	1-5V	0-5V	0-10V	2-10V
	Disconnect Alarm Signal	About 21mA	About 21mA	About 5.25V	About 5.25V	About 10.5V	About 10.5V
	Normal Operation	Corresponding channel's Red LED warning light is off					
	Input Over-range(limit)	Corresponding channel's red LED blinks (0-20mA/0-5V/0-10V Input type modules do NOT have this function)					
	Disconnect Alarm	Red light of the corresponding channel input disconnection(red, Single-channel 1pcs, Dual-channel 2pcs)					
	Load Capacity	≤500Ω (Output current maximum)					
		≥1MΩ (Output voltage maximum)					
	Communication Port	Mini USB port					
	Communication Protocol	See "MORNSUN Modbus Protocol Rules"					

Transmission Specifications

Item	Operating Conditions	Value
Signal Precision	Ta=25℃, Full-scale range,100% load	0.1% Full Scale
Zero Offset	Ta=25℃, Sin=0, 100% load	0.1% Full Scale
Temperature Coefficient	Operating temperature range of -25℃ ~ +71℃	0.005% Full Scale / ℃
Response Time		< 0.5s

General Specifications

Item	Operating Conditions	Value
Electrical Isolation	Electric strength test for 1 minute with a leakage current of ≤5mA	Field area to control area 2kVAC / 3kVDC
		Signal port to power supply 2kVAC / 3kVDC
Isolation Resistance	Signal input port, signal output port	100MΩ at 500VDC

Mechanical Specifications

Case Material	Flame retardant material UL94 V-0
Safety Class	IP20 (IEC60529 / EN60529)
Dimensions	35mm DIN-rail package: T-rail card package (DIN50022), pluggable connection pin, 12.5mm wide
Weight, typical	100g / 135g (1 input 1 output / 2 input 2 output & 1 input 2 output)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

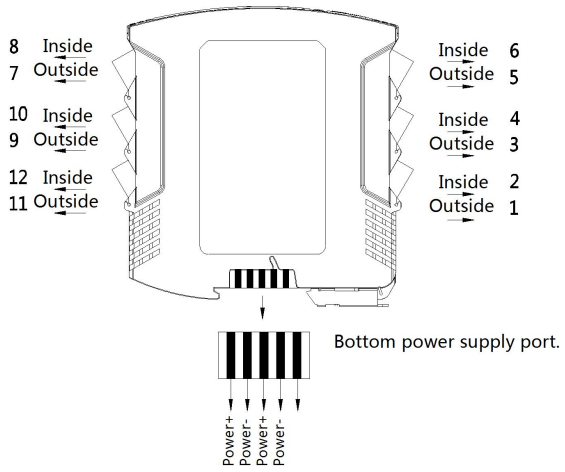
Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±4kV/Air ±8kV	perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	power supply port ±2kV	perf. Criteria A
		IEC/EN61000-4-4	signal port ±1kV	perf. Criteria A
	Surge	IEC/EN61000-4-5	power supply port ±1kV/2kV	perf. Criteria B
		IEC/EN61000-4-5	signal port ±1kV (line-to-ground)	perf. Criteria B
	CS	IEC/EN61000-4-6	3 Vr.m.s	perf. Criteria A

Application Precautions

1. Carefully read and follow the instructions before use; contact our technical support if you have any question;
2. Do not use the product in hazardous areas;
3. Use DC power supply for the product. and 220V AC power supply is prohibited;
4. Do not dismantle the product in order to avoid loss of warranty, product failure or malfunction.

Design Reference

1. Wiring diagram for product application



Note: When use bottom power supply, anyone group or both is OK.

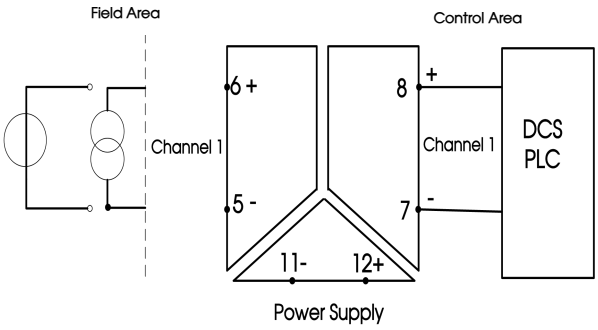
Programmable analog signal isolator

PIN	Description (2 input 2 output)
1	Signal 2 input-
2	Signal 2 input+
5	Signal 1 input-
6	Signal 1 input+
7	Signal 1 output-
8	Signal 1 output+
9	Signal 2 output-
10	Signal 2 output+
11	power input-
12	power input+

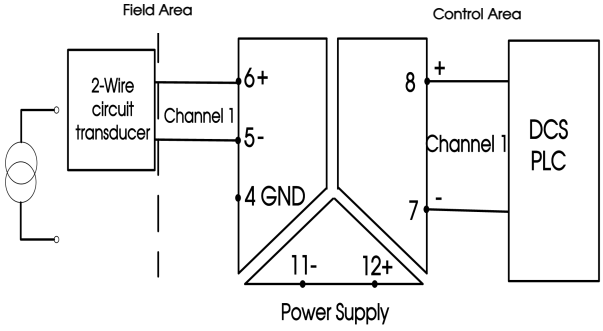
Programmable analog signal isolator with isolation power output

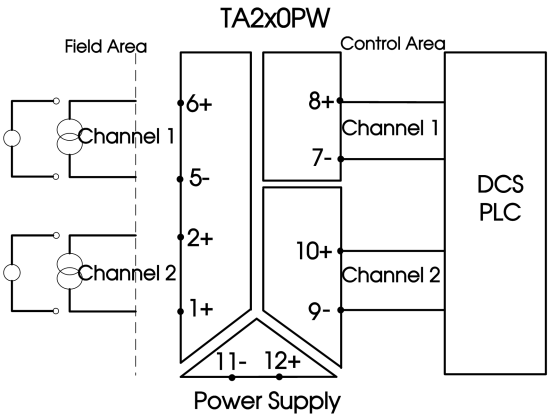
PIN	Distributor wiring method Description (2 input 2 output)	Isolator wiring method Description (2 input 2 output)
1	Signal 2 isolated input-	Signal 2 input+
2	Signal 2 isolated input+	/
3	/	Signal 2 input -
4	/	Signal 1 input -
5	Signal 1 isolated input-	Signal 1 input +
6	Signal 1 isolated input+	/
7	Signal 1 output-	Signal 1 output-
8	Signal 1 output+	Signal 1 output+
9	Signal 2 output-	Signal 2 output-
10	Signal 2 output+	Signal 2 output+
11	power input-	power input-
12	power input+	power input+

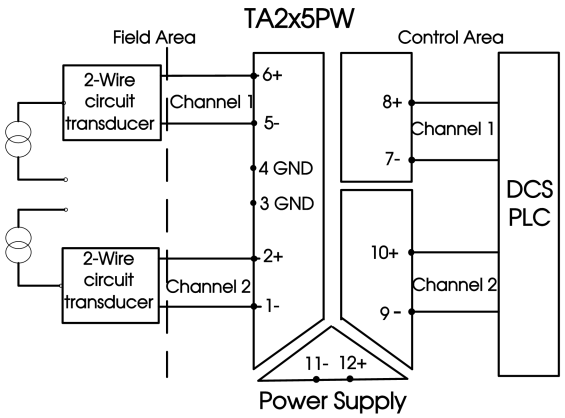
TA1x0PW

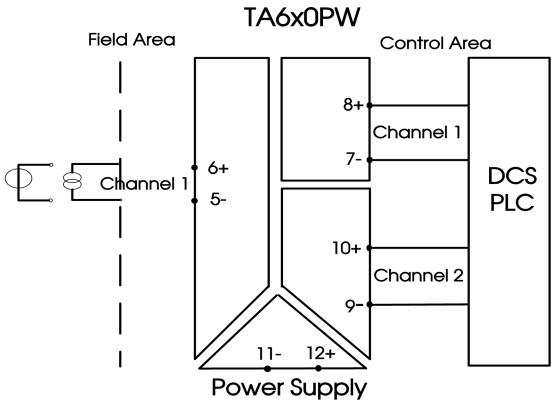


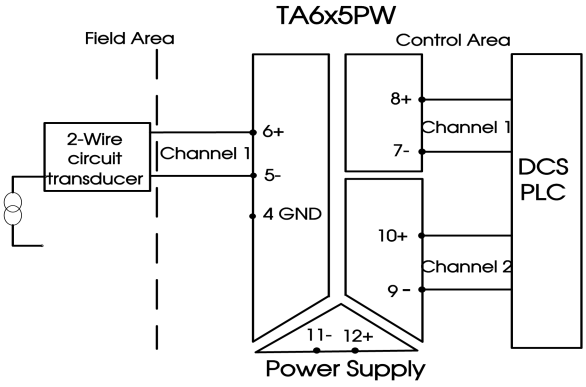
TA1x5PW











① Use dismountable terminals for instrument wiring, easy to operate;
② The sectional area of conductor is 0.5mm^2-2.5 mm^2;
③ The length of conductor exposed is 8mm and is fastened by M3 bolts.

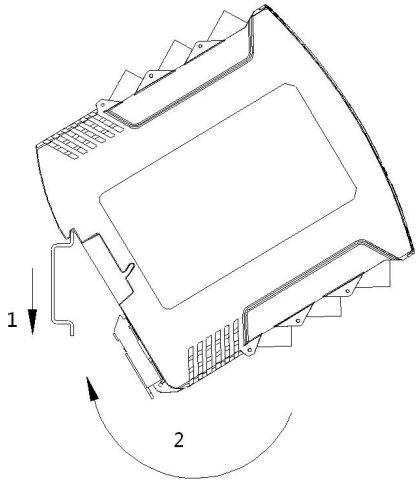
2. For additional information please refer to application notes on www.mornsun-power.com

Installation & Removal

Installation

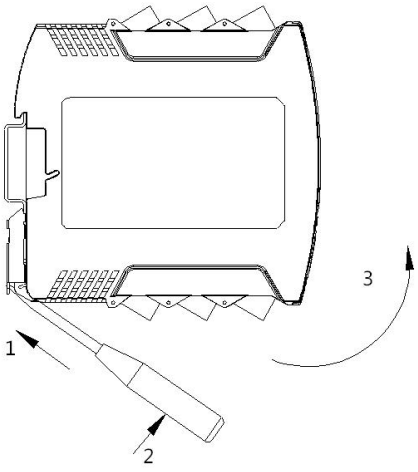
Standard 35mm DIN rail installation:

1. Insert top of Module into DIN rail;
2. Push bottom of Module into rail until it snaps in.

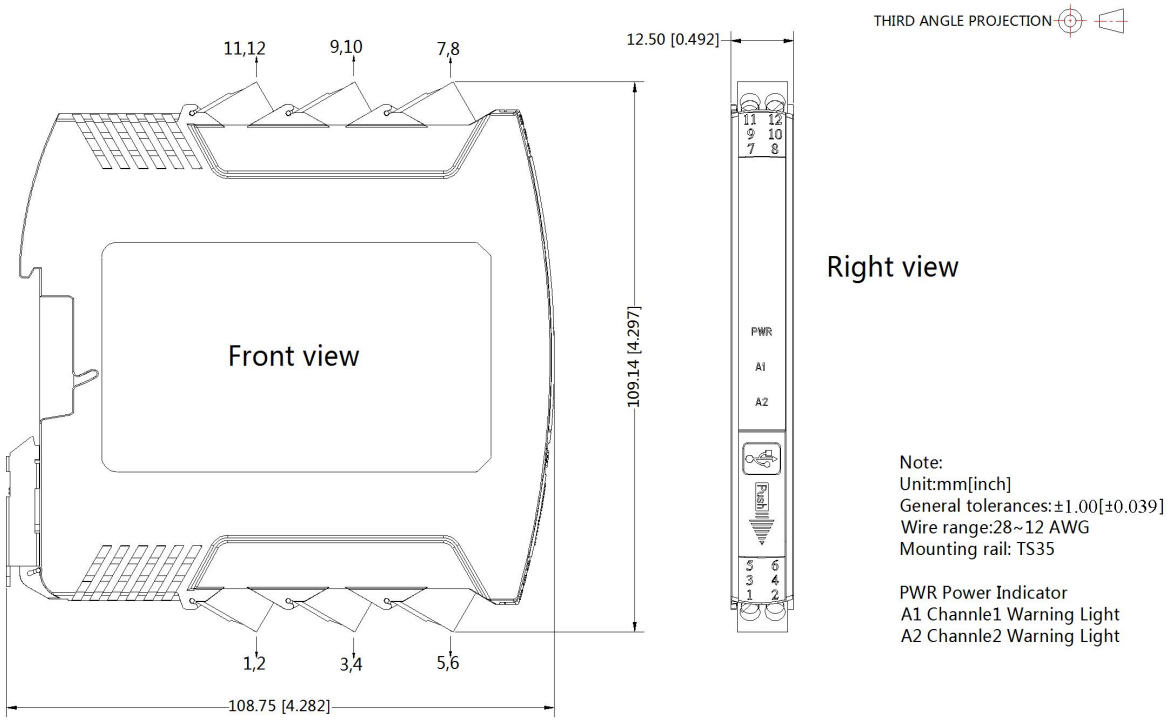


Removal

1. Insert screw driver on the lower end of Module to release clamp (tool edge width ≤6mm);
2. Push screw driver up towards Module to slide clamp out;
3. Pull Module up and out of guide rail.



Dimensions



Note:
Unit:mm[inch]
General tolerances:±1.00[±0.039]
Wire range:28~12 AWG
Mounting rail: TS35

PWR Power Indicator
A1 Channle1 Warning Light
A2 Channle2 Warning Light

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. The Packaging bag number:58040010;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on company corporate standards;
4. The above are the performance indicators of the product models listed in this datasheet. Some indicators of non-standard models will exceed the above requirements. For details, please contact our technical staff;
5. We can provide product customization service;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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