Isolated safety barrier

TAxxxW-xx series

MORNSUN®

12.5mm analog signal isolators / Transducers power supply

FEATURES

- Three-port isolation (input, output and power supply)
- 12.5mm slim case
- High accuracy (0.1% F.S.)
- High linearity (0.1% F.S.)
- Low temperature drift(35PPM/℃)
- Low-power dissipation
- EMI meets CISPR22/EN55022
- EMS meets IEC/EN61000
- High reliability(MTBF>500,000 hours)

The current or voltage signal from application field is picked up by this product and transmitted to the control cabinet.
One independent power supply is required. Moreover, within the interface of rail power supply, input and output are mutually isolated.
A green LED indicates that the device is working.
Field devices connected with this product:2-wire or 3-wire isolation transducer (Distribution), industrial standard current source (not to be used in intrinsically safe area).

Selection Guide

Part No.	Channels	Input Signal	Output Signal	Description
TA100W-11	1 input 1 output	4-20mA	4-20mA	--
TA100W-15	1 input 1 output	4-20mA	0-10VDC	--
TA105W-11	1 input 1 output	4-20mA	4-20mA	Transducers power supply
TA105W-14	1 input 1 output	4-20mA	1-5VDC	Transducers power supply
TA105W-15	1 input 1 output	4-20mA	0-10VDC	Transducers power supply
TA140W-51	1 input 1 output	0-10VDC	4-20mA	--
TA140W-52	1 input 1 output	0-10VDC	0-20mA	--
TA140W-55	1 input 1 output	0-10VDC	0-10VDC	--
TA142W-41	1 input 1 output	1-5VDC	4-20mA	Current loop output
TA200W-11	2 input 2 output	4-20mA	4-20mA	--
TA200W-15	2 input 2 output	4-20mA	0-10VDC	--
TA205W-11	2 input 2 output	4-20mA	4-20mA	Transducers power supply
TA205W-15	2 input 2 output	4-20mA	0-10VDC	Transducers power supply
TA240W-51	2 input 2 output	0-10VDC	4-20mA	--
TA240W-52	2 input 2 output	0-10VDC	0-20mA	--
TA240W-55	2 input 2 output	0-10VDC	0-10VDC	--
TA600W-11	1 input 2 output	4-20mA	4-20mA	--
TA600W-15	1 input 2 output	4-20mA	0-10VDC	--
TA602W-11	1 input 2 output	4-20mA	4-20mA	Current loop output
TA605W-11	1 input 2 output	4-20mA	4-20mA	Transducers power supply
TA605W-15	1 input 2 output	4-20mA	0-10VDC	Transducers power supply
TA640W-51	1 input 2 output	0-10VDC	4-20mA	--
TA640W-55	1 input 2 output	0-10VDC	0-10VDC	--

Note: Customers need to determine the type of input signal, measuring range and form of output signal while placing an order, customization is available for special requirements.

Input Specifications

Item		Operating Conditions	Value
Power Supply Input	power supply		18-30VDC (Typical value 24VDC)
	Input power	when the output current is in its max. value	Dual output distributor ≤3W, Single output distributor ≤1.5W, Dual output isolator ≤2W, Single output isolator ≤1.2W
	Power supply protection		Anti-reverse protection
Distribution (Isolators with isolated power output)	No-load Voltage		24V±10%
	Full-load Voltage	Load 20mA	≥20V

Field Area	Input signal		See selection guide
	Input Impedance	current input @20mA	Voltage Drop≤2.5V
		voltage input	≥ 100KΩ (Typ.)

Output Specifications

Item		Operating Conditions	Value
Control Area	Output signal		See selection guide
	Load capacity	Output current @maximum output current	≤500Ω
		Output Voltage	≥1000Ω

Transmission Specifications

Item	Operating Conditions	Value
Precision	Ta=25℃	0.1%F.S.
Gain Error	Ta=25℃	0.1%F.S.
Zero Offset	Ta=25℃	0.1%F.S.
Temperature Drift	Operating temperature range of -25 to +71℃	0.0035%F.S./ ℃

General Specifications

Item	Operating Conditions	Value
Electric Isolation	1Min ,humidity < 70%, leakage current ≤1mA	Site area and control area: 2.0KVAC ,3.0KVDC
		Output and power supply :2.0KVAC,3.0KVDC
		between channels (multi-channel products):2.0KVAC,3.0KVDC
Insulation Resistance	500VDC(signal input terminal, signal output terminal)	100MΩ
Operating Temperature		-25 ~ +71℃
Transportation and Storage Temperature		40 ~ +85℃

EMC Specifications

EMI	Conducted Disturbance	CISPR22/EN55022	CLASS A	
	Radiated Emission	CISPR22/EN55022	CLASS A	
EMS	Electrostatic Discharge	IEC/EN61000-4-2	Contact ±4KV/Air ±8KV	perf. Criteria B
	Conduction Immunity	IEC/EN61000-4-6	3 Vr.m.s	perf. Criteria A
	Radiation Immunity	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 ports ±1KV	perf. Criteria A
	Surge Immunity	IEC/EN61000-4-5	Power supply port ±1KV	perf. Criteria B
		IEC/EN61000-4-5	Signal ports ±1KV (line-to-ground)	perf. Criteria B

Physical Specifications

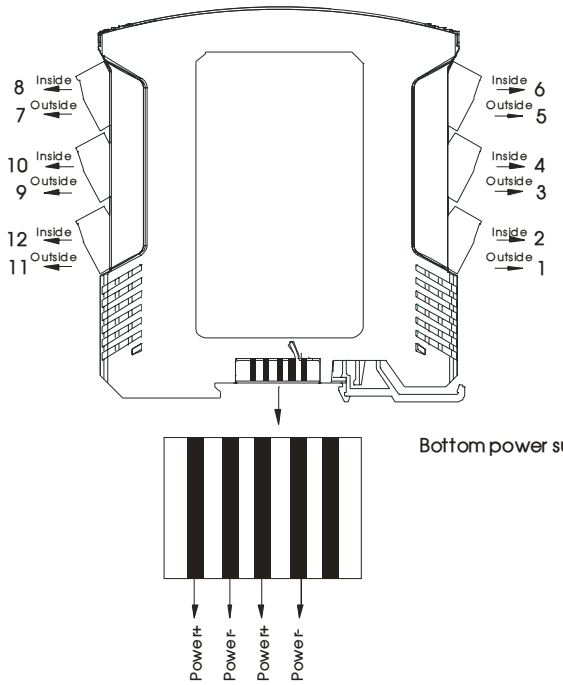
Casing Material	Retardant material UL94-V0
Safety Class	IP20(IEC60529 / EN60529)
Package Dimensions	35mm DIN-rail package: T-rail card package (DIN50022), pluggable connection pin, thickness 12.50mm
Weight	Single input/single output About 100g Single input/double output & double input/double output About 128g
Cooling Method	Free air convection

Application Precautions

1. Please read the instructions carefully before use; contact our technical support if you have any problem;
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 disassemble or assemble the product without permission to avoid explosion protection failure or malfunction of product.

Design Reference

1. Wiring diagram for product application



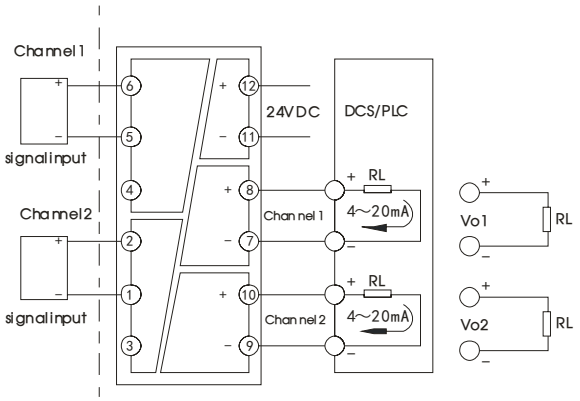
Bottom power supply port

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

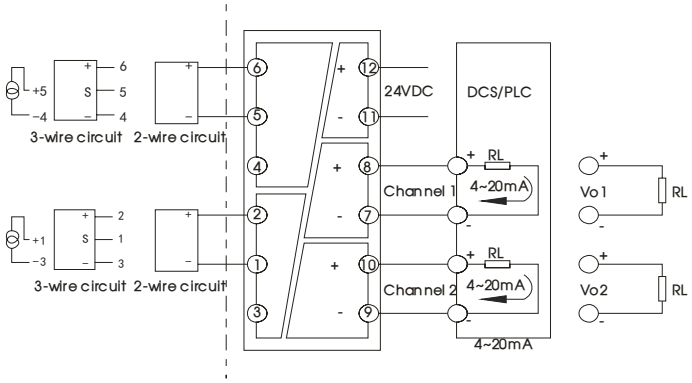
PIN	TAx00W（Isolators）
1	Si2- Signal 2 input-
2	Si2+ Signal 2 input+
3	/
4	/
5	Si1- Signal 1 input-
6	Si1+ Signal 1 input+
7	So1- Signal 1 output-
8	So1+ Signal 1 output+
9	So2- Signal 2 output-
10	So2+ Signal 2 output+
11	Power- Power Input-
12	Power+ Power Input+

PIN	TAx05W (Isolator With Isolated Power Output Circuit Diagram)	TAx05W (Isolator Circuit Diagram)
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+

Wiring diagram for isolator



Wiring diagram for transducers power supply



1) The instrument wiring using direct plug wiring terminal, easy to use;
2) Recommended the sectional area of conductor is 0.5mm2-2.5 mm2;
3) Recommended the length of conductor exposed is 8mm and is fastened by M3 bolts.

2. Application in industry

In the field application, isolator should not be installed in intrinsically safe area.

3. Selection guidelines for Isolator or Isolator with isolation power output

1) Take care of output independence of isolator or isolator with isolation power output and loop resistance to make sure the its output voltage meets the minimum operation voltage requirement of field device.
2) Select suitable isolator which matches the field device according to its power polarity, signal type and transmission mode.

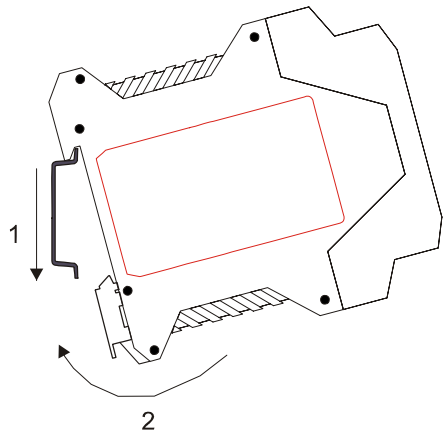
4. For more information please find the application notes on www.mornsun-power.com

Installation & disassembly

Installation

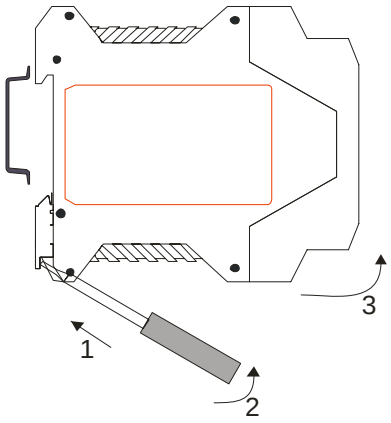
DIN35mm standard rail installation

1. Insert the top of the instrument card in the rail;
2. Push the bottom of the instrument into the rail

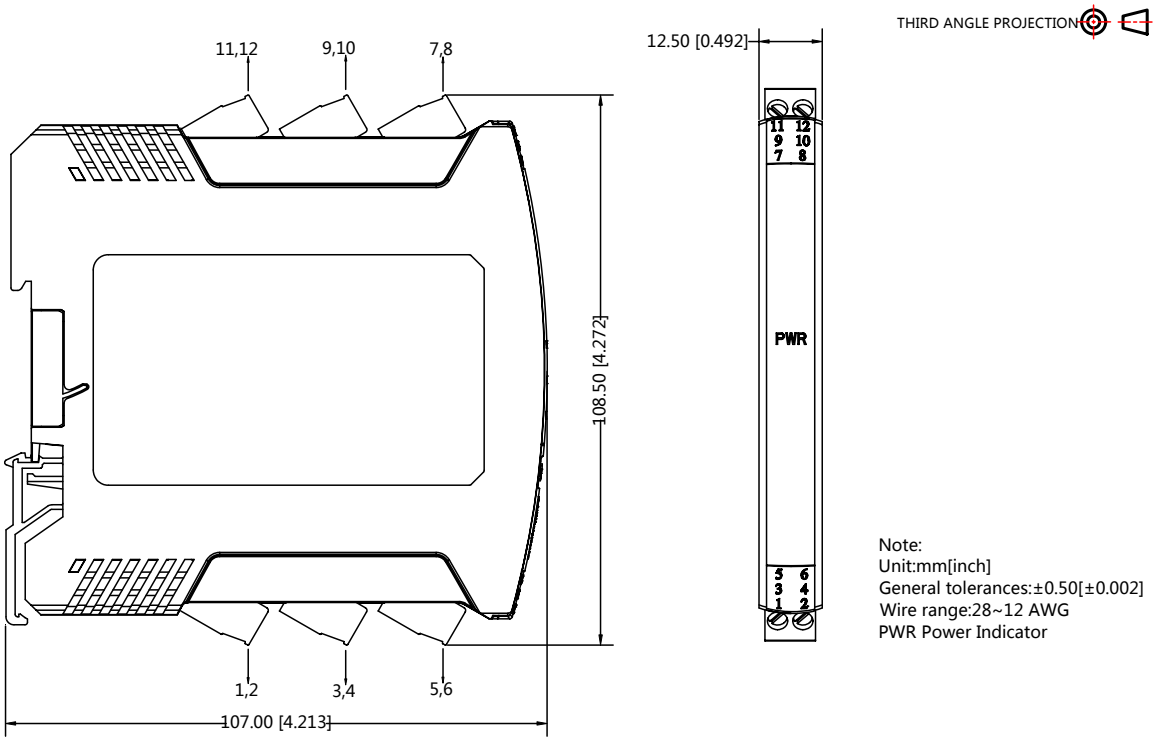


Disassembly

1. Insert to the clamp on the lower end of instrument with a screw driver (tool edge width≤6mm);
2. Push the screw driver up, and pry the clamp down;
3. Pull the instrument up out of the guide rail.



Dimensions



Note:
Unit:mm[inch]
General tolerances:±0.50[±0.002]
Wire range:28~12 AWG
PWR Power Indicator

Note:

1. Packing Information please refer to 'Product Packing Information'. Packing bag number: 58040010;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25℃, humidity<75%, The nominal power supply, can be measured when the input signal at full range and output signal at rated load;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technician for specific information;
5. We can provide product customization service;
6. Specifications of this product are subject to changes without prior notice.

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