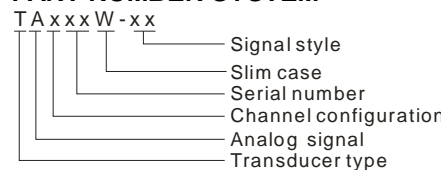


# MORNSUN®

## 12.5mm analog signal isolators / Transducers power supply —— TAxW-xx Series



### PART NUMBER SYSTEM



### 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 Output Ripple & Noise ( $\leq 60\text{MV}_{\text{P-P}}$ )
- Low temperature drift ( $35\text{PPM}/^{\circ}\text{C}$ )
- Low-power dissipation
- Excellent EMC performance
- High reliability ( $\text{MTBF} > 500,000$  hours)

### GENERAL DESCRIPTION

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

TA	x	xx	W-	x	x	Description
Channels	1					1 input 1 output
	2					2 input 2 output
	6					1 input 2 output
Serial Number		00				Current signal input, Current source or voltage source output
		02				Current signal input, 2-wire current source output
		05				(Distribution) 2-wire current input, current source or voltage source output
		40				voltage signal input, current source or voltage source output
		42				voltage signal input, 2-wire current source output
Package mark						Slim case
Input signal				1		4-20mA
				2		0-20mA
				3		2-10V
				4		1-5V
				5		0-10V
				6		0-5V
Output signal				1		4-20mA
				2		0-20mA
				3		2-10V
				4		1-5V
				5		0-10V
				6		0-5V

Note: Customers need to choose the type of the input signal and output signal. We could also offer customer design for special input and output.

### ELECTRICAL CHARACTERISTICS

Power Supply	Input voltage	18-30VDC (Typical 24VDC)	
	Power Dissipation	1 input 1 output	1 input 2 output/2 input 2 output
		$\leq 1.2\text{W}$ (TA100W)	$\leq 2\text{W}$ (TA600W/TA200W)
		$\leq 1.5\text{W}$ (TA105W)	$\leq 2\text{W}$ (TA605W/TA205W)
Power Protection	Reverse connection protection		

Distribution (Isolators with isolated power output)	No-load Voltage	24V±10%
	Full-load Voltage	≥20V
Field Area	Input Signal	See selection guide
	Input Impedance	≤2V (Current input @20mA) ≥100KΩ (Voltage input)
Control Area	Output Signal	See selection guide
	Ripple & Noise	≤60mVp-p
	Load	≤500Ω (@maximum output current) ≥1000Ω (@maximum output voltage)

### TRANSMISSION CHARACTERISTICS

Zero Offset	0.1%FS.
Accuracy	0.1%FS.
Gain Error	0.1%FS.
Temperature drift coefficient	0.0035%FS./°C (-25°C~+71°C Operating temperature range)

### ISOLATION CHARACTERISTICS

Electrical Isolation	Three-port isolation (input, output and power supply)
Isolation Voltage	2.0KVAC,3.0KVDC between application field and control cabinet
	2.0KVAC,3.0KVDC between signal input or output and power supply
	2.0KVAC,3.0KVDC between channels ( multi-channel products )
Test conditions: testing for 1minute, humidity < 70%, leakage current < 1mA	

### EMC CHARACTERISTICS

EMI	RE	CISPR22/EN55022 CLASS A
	CE	CISPR22/EN55022 CLASS A
ESD	IEC/EN61000-4-2 Contact ±4KV / Air ±8KV	perf. Criteria B
EFT	IEC/EN61000-4-4 DC Power Port ±2KV	perf. Criteria B
	IEC/EN61000-4-4 I/O Signal Port ±1KV	perf. Criteria B
Surge	IEC/EN61000-4-5 DC Power Port ±1KV /±2KV	perf. Criteria B
	IEC/EN61000-4-5 I/O Signal Port ±1KV(Line to GND)	perf. Criteria B

### OTHER CHARACTERISTICS

Ambient temperature	Operating temperature range: -25°C ~ +71°C
	Transport and storage temperature: -40°C ~ +85°C
Package	35mm DIN-rail package: T-rail card package (DIN50022), pluggable connection pin, thickness 12.50mm
Safety Class	IP20(IEC60529 / EN60529)
Weight	1 input 1 output: about 100g;2 input 2 output & 1 input 2 output: about128g

### CONNECTION

1. Connection used dismantable terminals;
2. Cross section area of wiring: 0.5mm<sup>2</sup>~2.5 mm<sup>2</sup>;
3. The length of bare wire is about 8mm, locked up by the M3 bolt.

#### Application in industry

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

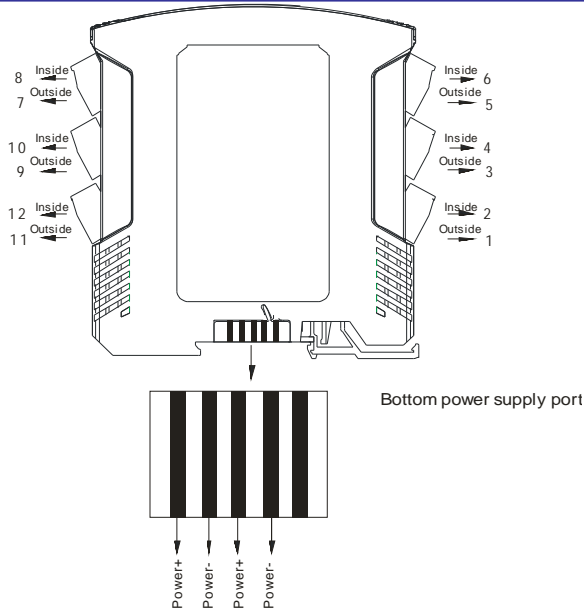
#### Selection guidelines for Isolator or Isolator with isolation power output

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.

#### Operation notes

1. Please read the user manual carefully before using. If any question please contact our technical support department.
2. Please do not use this product in hazardous area.
3. The power supply of this product should be 24VDC power source. It is forbidden to use 220VAC power supply.
4. To avoid invalid explosion protection function, or any failure, users disassemble this product is forbidden.

# APPLICATION CIRCUIT DIAGRAM & PIN DESCRIPTION

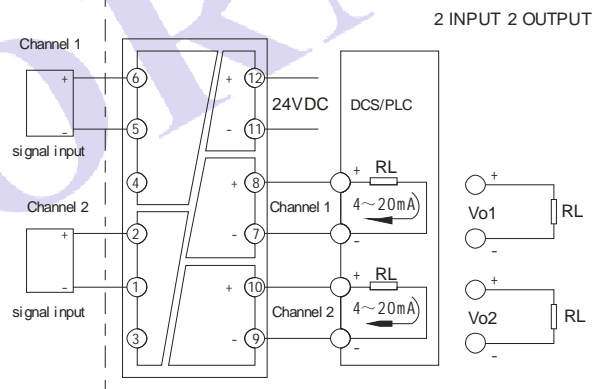


PIN	TAx00W (Isolators)
1	Si2- Signal 2 input-
2	Si2+ Signal 2 input+
3	/
4	/
5	Si1- Signal 1 input-
6	Si1+ Signal 1 input+
7	So1- Signal 1 output-
8	So1+ Signal 1 output+
9	So2- Signal 2 output-
10	So2+ Signal 2 output+
11	Power- Power Input-
12	Power+ Power Input+

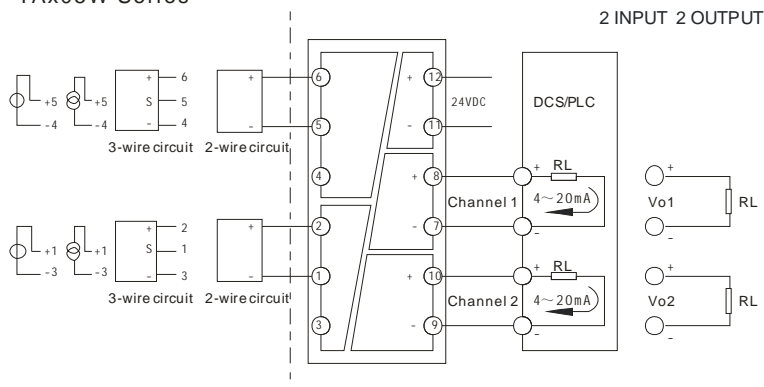
Note: When use bottom power supply, anyone group or both is OK.

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+

## TAx00W Series



## TAx05W Series

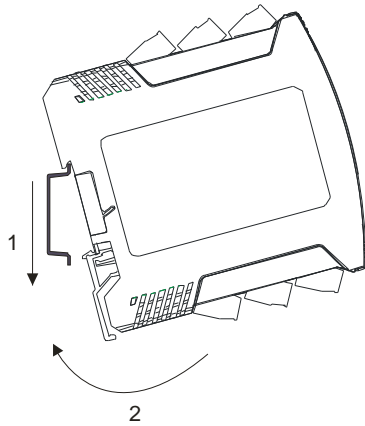


## INSTALLATION & DISASSEMBLY

### Installation

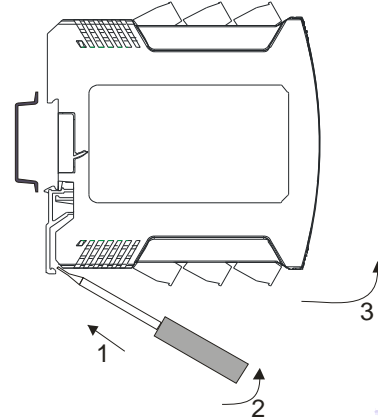
DIN35mm standard rail installation:

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



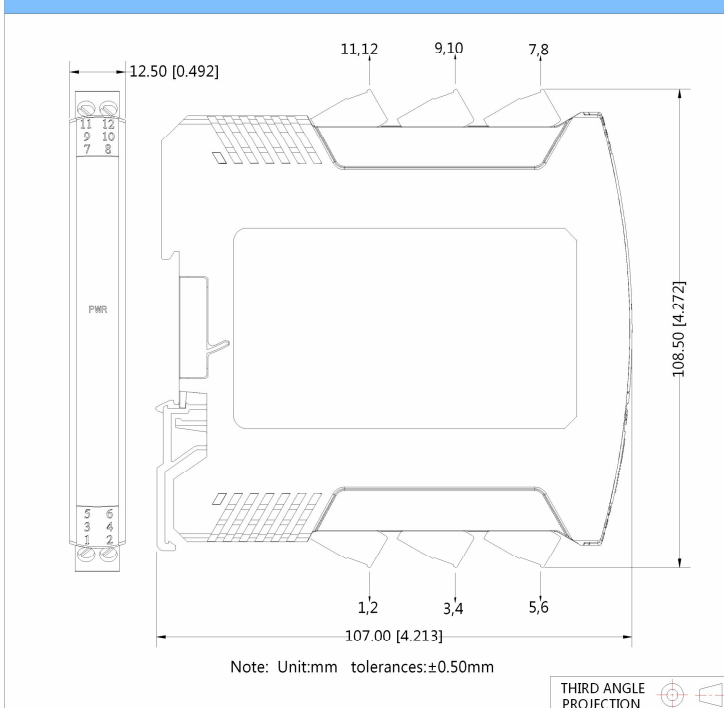
### Disassembly

1. Insert a screwdriver between the bottom of the card lock and the rail;
2. Pull up the screwdriver and press the card lock downwards;
3. Pull the instrument out of the rail.

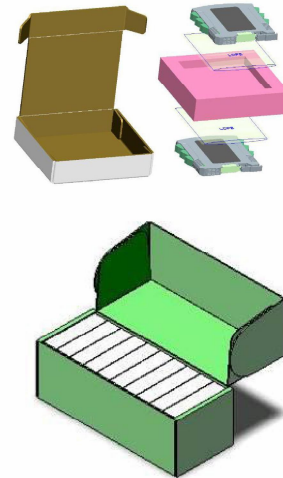


## PACKAGING DIMENSION & PACKAGING DIAGRAM

### MECHANICAL DIMENSIONS



### PACKAGE DIAGRAM



Small white box dimensions: L\*W\*H=165\*155\*40mm  
 Packaging Quantity: 2pcs  
 Inner carton dimensions: L\*W\*H=425\*175\*160mm  
 Packaging Quantity: 20 pcs  
 Outer carton dimensions: L\*W\*H=560\*450\*520mm  
 Packaging Quantity: 180 pcs

### Note:

1. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. In this datasheet, all the test setup and methods are based on our corporate standards.
3. All characteristics are meant for listed model, non-standard models may perform differently, you can contact MORN SUN FAE for more details.
4. Contact us for your specific requirement.
5. Specifications are subject to change without prior notice.

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