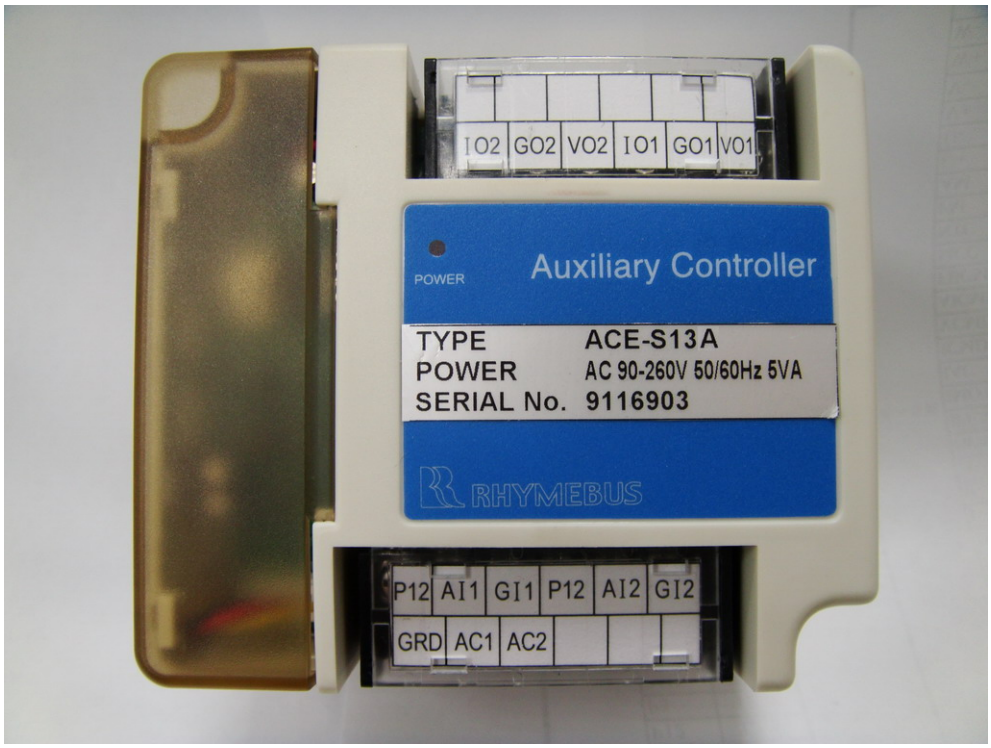
SIGNAL ISOLATION CONVERTER

Type: ACE-S13A/13B



ACE-S Series Auxiliary Controller

Type	Name	Purpose
ACE-S02/02B/02C	Position Detector	The variation angle, tension, weight and angle bias on two axes detected by synchronization machine can be converted as DC voltage; a converter can be controlled to operate at the same speed, synchronous operation, constant tension operation, single-to-synchronous operation. Built-in tilt mechanism can slowly increase or decrease signals set by frequency to reduce the mechanical impact.
ACE-S04/06	Proportional/Differential Coupler	Can select as a proportional/differential controller. One proportional coupler can connect to six converters and control five proportional (differential) couplers. Built-in tilt mechanism can slowly increase or decrease signals set by frequency to reduce the mechanical impact.
ACE-S08/09	Speed Converter/Feed Back Controller	The rotational speed of a motor can be converted as converter frequency input through electrical signal by an RPM generator or photo-interception pulse generator. Can be equipped with a potentiometer as constant tension for cloth, line or plastics. Linear and loose conversion can be used with an RPM generator as linear control or motor constant control. Built-in tilt mechanism can slowly increase or decrease signals set by frequency to reduce the mechanical impact.
ACE-S10	Multi-function Controller	Remote control: Remotely control to start, accelerate, decelerate and stop a converter, and can automatically memorize operation frequency during power failure. Traverse control: Used for transverse equipment, so that can move left or right. PLC multi-step control: Execute procedure control according to the setting phase, and recycle it.
ACE-S12	Signal Distributor	Input current can be simultaneously delivered to five sets of output after converted (Current or voltage output can be switched.). For the applications of multiple conversion system, pressure signals can be simultaneously delivered to multiple converters so that achieve constant pressure.
ACE-S13A/13B	Signal Isolation Converter	Used at a place for output and input conversion (I-I, I-V, V-V and V-I) or isolation. ACE-S13A: The range of current output is DC 0 ~ 20mA. ACE-S13B: The range of current output is DC 4 ~ 20mA.

Introduction

Thank you for purchasing ACE-S13 controller. Please carefully read this user manual before the installation. In order to correctly operate and use, please attach this user manual on that machine so that can provide the reference of maintenance and service or troubleshooting in the future.

Safety Notices

Please carefully read this user manual and pay attention to safety notices, symbols or text specified in “DANGER” and “NOTE” prior to performing the installation, wiring, operation, maintenance or troubleshooting.

⚠ DANGER: Indicates the operation could cause severe injury or death if it doesn’t execute according to instruction on the user manual.
⚠ NOTE: Indicates the operation could minor injury or product damage if it doesn’t execute according to instruction on the user manual. ※ Even though ⚠ indicates the level of light damage, it could cause severe injury.
Only qualified staff can carry out the installation, wiring, trial run or troubleshooting. ※Qualified staff: Those who get familiar with the principle, structure, characteristic, operation procedure and installation of ACE controller to take safety measures and avoid danger as well as carefully read the user manual.

Wiring and Installation	⚠ Selected power voltage must have the specifications identical to controller input voltage. If wrong voltage is connected, internal control circuit will be burned out. Please pay special attention to that. ⚠ Wiring between ACE controller and converter should be as short as possible. ⚠ The length of output terminal "VO#(IO#) and GO#" and converter frequency terminal "Vin (Iin) and Gnd" should be within 3m. ⚠ Please select appropriate line diameter when wiring main loop power. ⚠ Ground lines should conform to the third type (ground resistance below 100Ω). ⚠ Main loop power and control loop lines should be connected to ground point (GRD). ⚠ Signal lines should adopt twisted pair or isolated lines to avoid noise interference, and the ground items should be performed. ⚠ Signal lines should be kept away from high voltage or power lines. Don't bundle with high power lines. ⚠ Don't connect control loop terminals during the power delivery to avoid damage caused by the surge impact. ⚠ Please confirm power indicators on a panel turn off to perform the removal after the power is disconnected. ⚠ Please connect according to terminal symbol when wiring, and lock screws to avoid trip. ⚠ Please recover the upper cover to avoid electric shock after wiring is completed. ⚠ The wiring operations must be performed by the qualified staff.
Ambient Environment	⚠ Don't install at a place where to have high temperature, humidity, oil, lint, iron powder, copper powder, dust and corrosion. ⚠ Heat dissipation should be considered when installing in a control panel. The ambient temperature should not be greater than +50℃.

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I. Features:

Two sets of signal isolation conversion circuit (output and input isolation) can invert V/V, V/I, I/V and I/I, respectively.

II. Specifications:

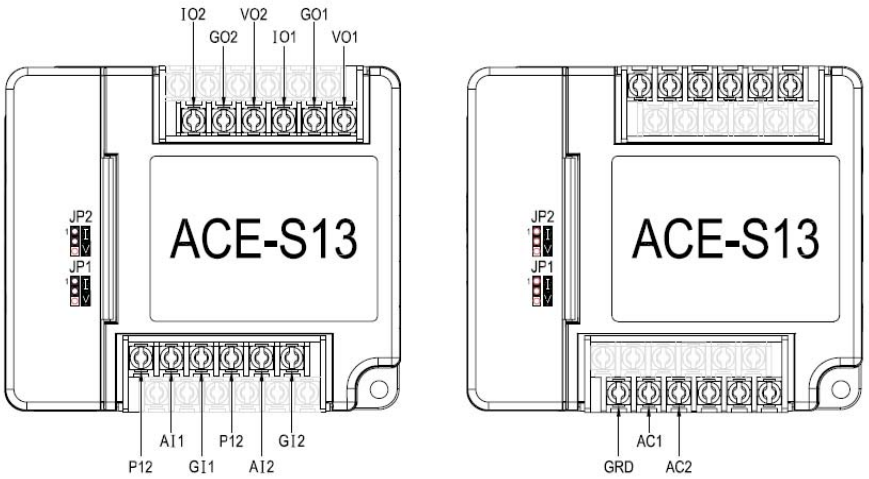
Item	Description	Remark
Power Voltage	AC 90 ~ 260V, 50/60Hz	
Power Consumption	About 5VA	
Input Signal	Voltage input: 0V ~ 10V Current input: 0 ~ 20mA	
Output Signal	Voltage output: 0V ~ 10V Current output: ACE-S13A is 0 ~ 20 mA ACE-S13B is 4 ~ 20 mA	
Operating Environment	Operating location: Installed at a place where no corrosive or conductive gas, liquid and dust exists. Ambient temperature: -10℃ ~ +50℃ (no condensation and freeze) Storage temperature: -20℃ ~ +60℃ Humidity: 90%RH Vibration: Below 5.9m/sec(0.6G) Altitude: Below 1000m (3280ft)	

III. Terminal Definition:

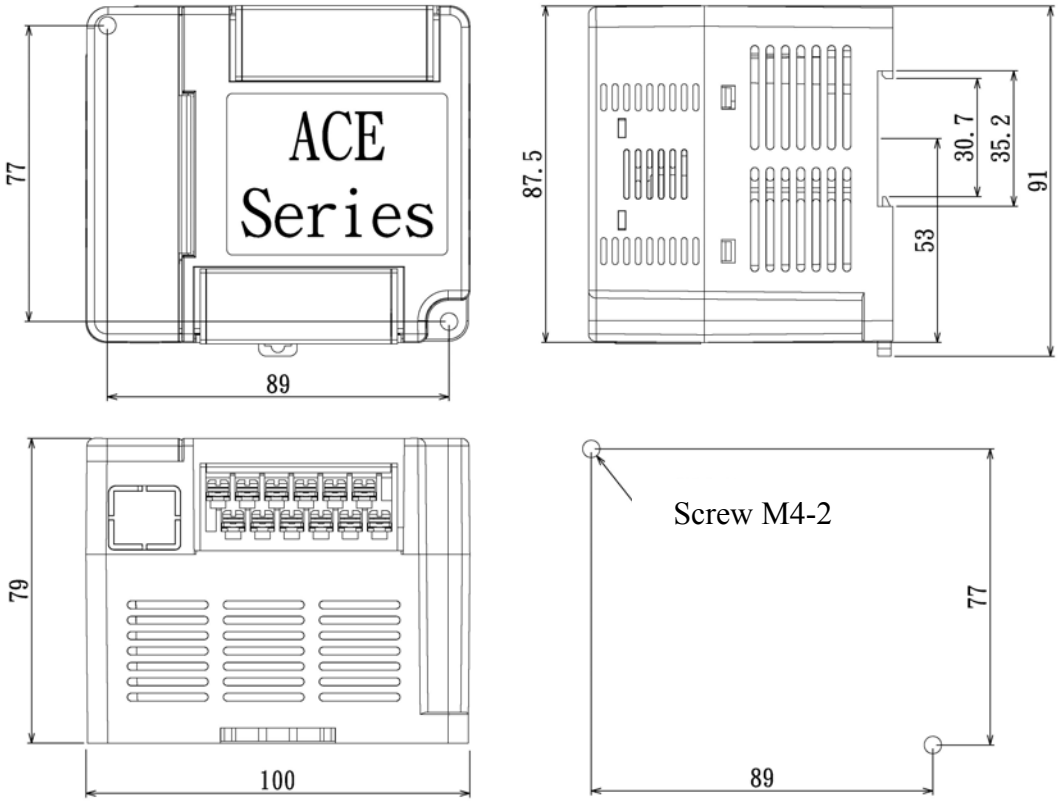
Terminal Name	Description	Remark
AC1 and AC2	Power input terminal Input voltage AC 90 ~ 260V, 50/60Hz	
GRD	Ground terminal for equipment	
P12	Power output terminal for potentiometer DC 12V, 20mA(Max)	
AI1-GI1	First analog input terminal Voltage input (JP1short-circuit pin is moved to “V”.): DC 0V ~ 10V input, input impedance 20kΩ Current input (JP1short-circuit pin is moved to “I”.): DC 0 ~ 20mA input, input impedance 250Ω	Note 1
AI2-GI2	Second analog input terminal Voltage input (JP2short-circuit pin is moved to “V”.): DC 0V ~ 10V input, input impedance 20kΩ Current input (JP2 short-circuit pin is moved to “I”.): DC 0 ~ 20mA input, input impedance 250Ω	Note 1
VO1-GO1	First voltage signal output terminal Output range: DC 0 ~ 10V Output current ≦ 5mA (output load resistance needs ≧ 2kΩ)	
IO1-GO1	First current signal output terminal Output range: ACE-S13A is 0 ~ 20 mA. ACE-S13B is 4 ~ 20 mA. (output load resistance needs ≦ 500Ω)	
VO2-GO2	Second voltage signal output terminal Output range: DC 0 ~ 10V Output current ≦ 5mA (Output load resistance needs ≧ 2kΩ)	
IO2-GO2	Second current signal output terminal Output range: ACE-S13A is 0 ~ 20 mA ACE-S13B is 4 ~ 20 mA. (Output load resistance needs ≦ 500Ω)	

Note 1: Two defaults (AI1 and AI2) are set as voltage input.

IV. Terminal Position and Dimension Diagrams:



Terminals at upper layer Terminals at lower layer



Unit: mm

Fig. (1)