

FEATURES

- ❖ Second power supply for sensors, etc.
- ❖ 6 simultaneous signal inputs
- ❖ EMI noise filtering on outputs
- ❖ ZERO and SPAN adjustments

APPLICATIONS

- ❖ High/Low signal selection
- ❖ Signal summing
- ❖ Sensor averaging
- ❖ Custom signal scaling

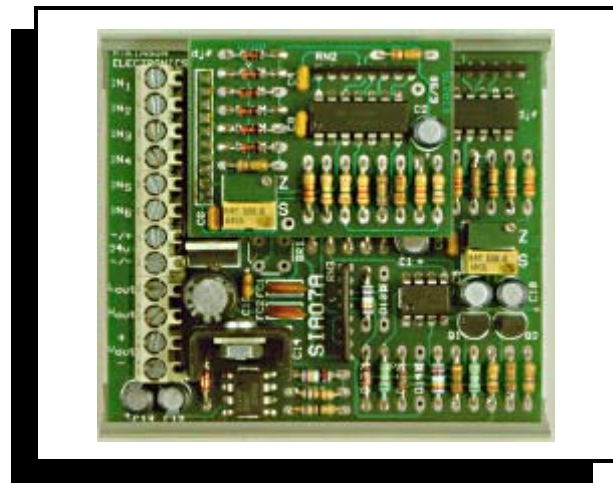
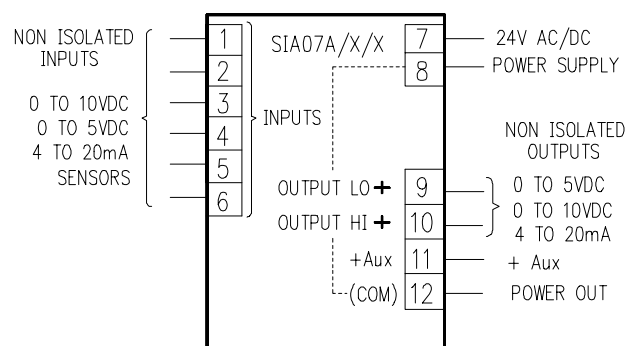
DESCRIPTION

The SIA07A is a multiple input, special function interface module. It is designed to perform high or low signal selection, averaging, summing, or signal scaling. The SIA07A can be configured to accept up to six like analog signals. It will provide a standard or custom voltage signal or 4-20mA signal output. It has an AUX 24V DC @ 150mA power supply option for powering six current loops.

OPERATION

The SIA07A is configured to be powered by either 24VAC (full-wave bridge rectifier) or 24V AC/DC (half-wave rectifier) on terminals 7 & 8. The 24V AC is rectified, filtered, and fed to two regulators one for internal use and the other for external use. The input signal connections are made on terminals 1 through 6 with terminal 12 representing the input common. These signals pass through diodes or resistors which perform either high or low select, averaging, or summing of up to six (6) like signals, the result is fed into the amplifier section where it is scaled to the desired output. ZERO and SPAN potentiometers provide field calibration of the output signal.

WIRING CONFIGURATION

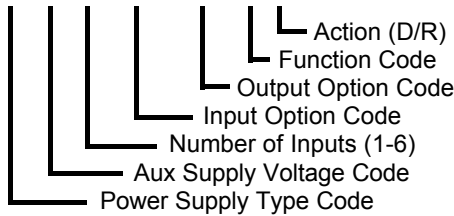


SPECIFICATIONS

SIZE:	3.4" L x 3" W x 1.5" H
MOUNTING:	3" RDI snap-track (supplied).
POWER:	24V AC, ± 10%, 50/60Hz, 2VA 24V DC, ± 15%, @ 85 mA
AUX VOLTAGE REF:	+5-24V DC @ 150 mA maximum
INPUT SIGNALS:	Sensor signals, 0-1V through 0-10V DC, 4-20 mA Six (6) non-isolated inputs.
INPUT IMPEDANCE:	>100kΩ for voltage inputs 250Ω for 4 to 20mA inputs
FUNCTION:	High select, Low select, High & low select Average, Summing, or Scaling of one to five input signals.
OUTPUT SIGNALS:	0-5V DC or 0-10V DC Custom DC voltages 4-20 mA output
ACTION:	Direct./Reverse factory set.
ADJUSTMENT:	ZERO & SPAN ± 20%
AMBIENT TEMP:	0 to 50°C

ORDERING INFORMATION

SIA07A/X/XX/X/XXX/XXX/X/X



POWER SUPPLY TYPE CODE OPTIONS

- F - Full-wave bridge rectifier, Terminal 12 floating in reference to 24V AC.
- H - Half-wave rectifier, Terminal 12 common to 24V AC(terminal 8).

AUX VOLTAGE SUPPLY CODE OPTIONS

Terminal Block # 11 output voltage options:

- 05 - 5V DC output, max. Load 100 mA.
- 15 - 15V DC output, max. Load 100 mA.
- 24 - 24V DC output, max. Load 150 mA.

INPUT CODE OPTIONS

- 1-5V - 1 to 5V DC inputs.
- 5V - 0 to 5V DC inputs.
- 10V - 0 to 10V DC inputs.
- mA - 4 to 20 mA With 249Ω load.
- VDC - Custom voltage input.

Custom sensor inputs specify type and temp range.

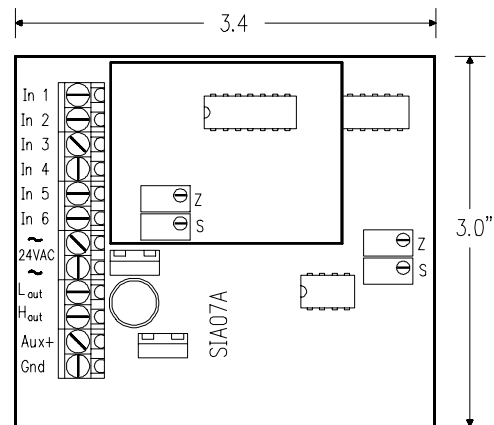
- RTD-1K - RTD 1000 ohm sensor inputs.
- AD590 - AD590 sensor inputs.
- SCS-XX - Staefa sensor inputs.

ORDERING CODE EXAMPLES

- SIA07A/F//4/10V/10V/S - SIA07A with full-wave bridge rectifier, no Aux supply, Four (4) 0 to 10V DC input signals, Summing with a direct acting 0 to 10V DC output signal.
- SIA07A/F//6/MA/MA/H - SIA07A with full-wave bridge rectifier, no Aux supply, Six (6) 4 to 20mA input signals, High select with a direct acting 4 to 20mA output signal.
- SIA07A/H//2/1-5V/5V/HL - SIA07A with half wave rectifier, no Aux pwr. supply, Two (2) 1 to 5V DC input signals, High & Low select with direct acting 0 to 5V DC output signals.
- SIA07A/H/5V/3/RTD-1K/5V/A - SIA07A with half-wave rectifier, 5V Aux supply, Three (3) stand-a-lone 1000Ω RTD sensor inputs with pull-ups, Average with a direct acting 0 to 5V DC output signal.
- SIA07A/H//2/SCS-T30/5V/A/R - SIA07A with half-wave rectifier, no Aux supply, Two (2) Staefa T-30 sensors voltages, Average with a Reverse acting 0 to 5V DC output signal.
- SIA07A/F//5/CV//CVO/H - SIA07A with full-wave bridge rectifier, no Aux supply, Five (5) custom voltage input signals, High select with a direct acting custom DC voltage output signal.

Call for other calibration ranges and versions.

PHYSICAL CONFIGURATION



OUTPUT CODE OPTIONS

- 5V - 0 to 5V DC, 2KΩ min.
- 10V - 0 to 10V DC, 2KΩ min.
- VDC - Custom voltage output, specify voltage.
- mA - 4 to 20 mA, 600Ω max.

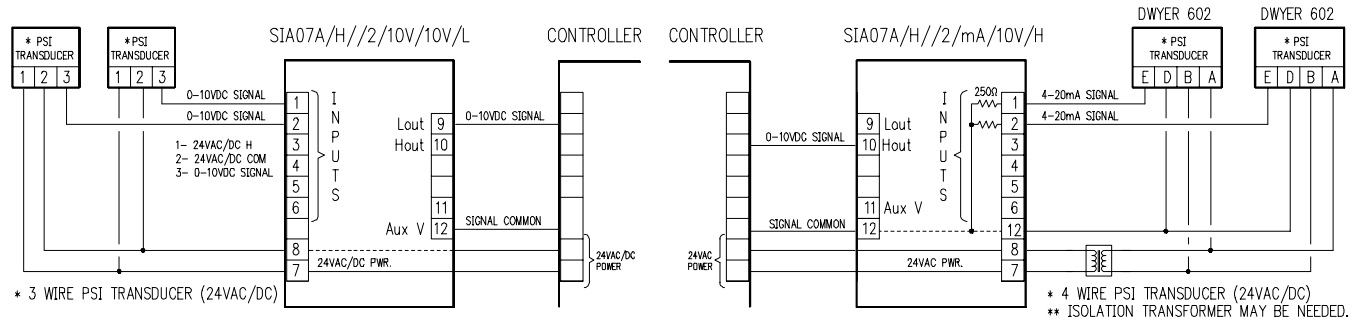
FUNCTION CODE OPERATION

- H - High select of 2 to 6 input signals.
- L - Low select of 2 to 6 input signals.
- HL - High & Low select of 2 to 6 input signals.
- A - Average of 2 to 6 input signals.
- S - Summing of 2 to 6 input signals.
- C - Custom signal scaling to 1 input.

OPERATION ACTION CODE OPTIONS

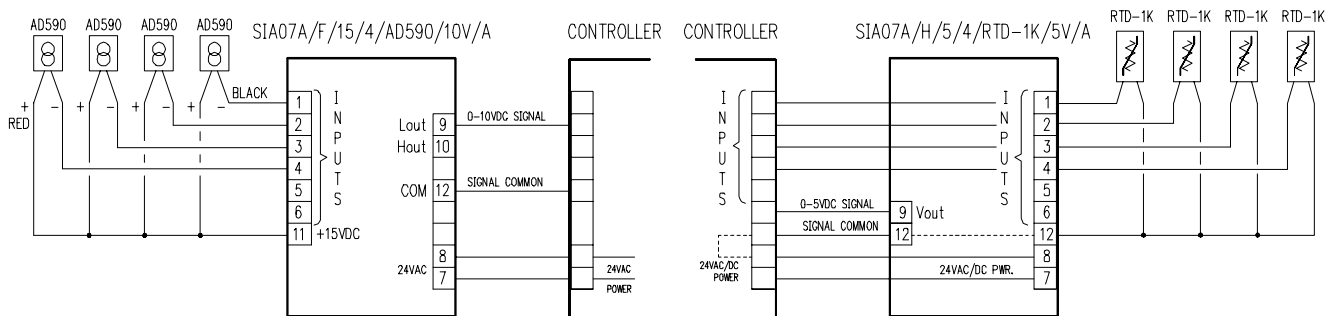
- R - Reverse action.
Leave blank for Direct action operation.

APPLICATION 1 - LOWEST AND/OR HIGHEST INPUT SELECTION



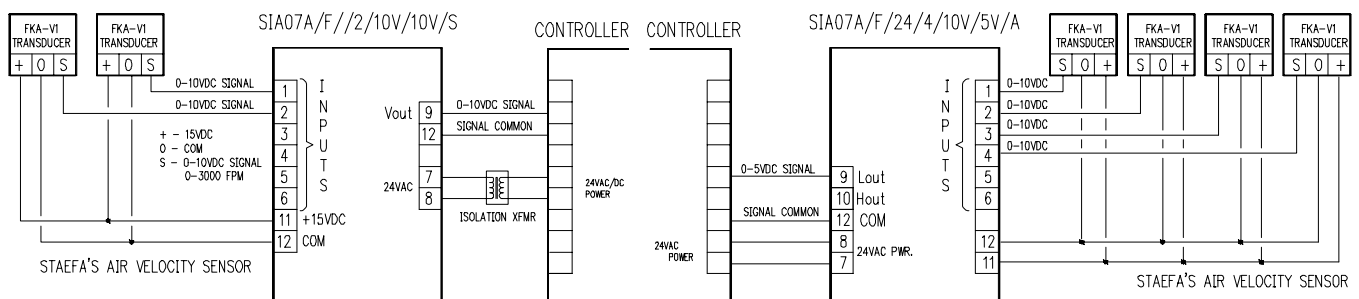
The SIA07A//2/10V/10V/L or SIA07A//2/mA/10V/H selects the lowest or highest of two duct pressure signals. The SIA07A//2/10V/10V/HL can select both the highest and lowest signal and output both. The output signal is scaled for a 0 to 10V DC output over the pressure range for input into the DDC controller. See SIA07A for input, output, and function selection, ALL choices are factory configured.

APPLICATION 2 - TEMPERATURE SENSOR AVERAGING



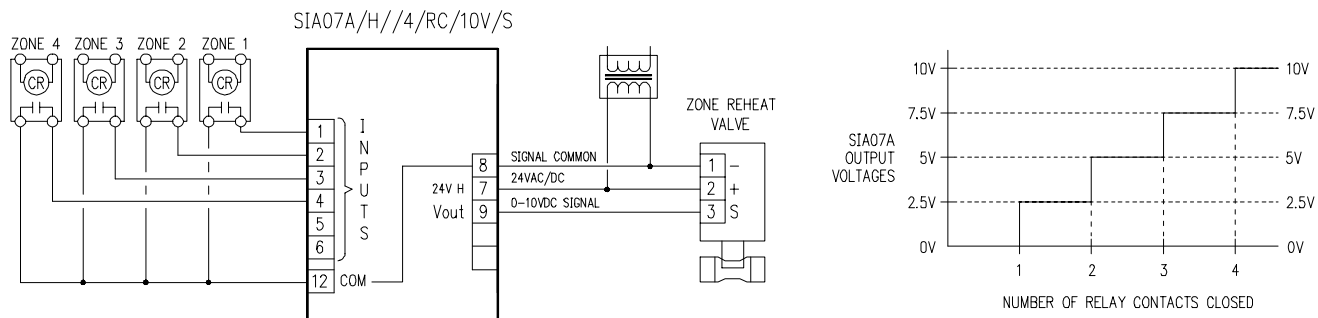
The SIA07A//4/AD590/10V/A averages the temperature signals from four stand-alone AD590 sensors and provides the average as an 0 to 10V DC signal to input into the Zone controller. This application is often used where large work spaces require multiple temperature sensors for zone control. The SIA07A/H//4/RTD-1K/5V/A averages the temperature signals from four existing RTD-1K sensors and provides the average as an 0 to 5V DC signal to the Zone controller. The output can be scaled to match the voltage per temperature range of the controllers input.

APPLICATION 3 - SUMMING OR AVERAGING AIR FLOWS USING STAEFA'S VELOCITY SENSOR.



The SIA07A/F//2/10V/10V/S sums the flow signals from two Staefa FKA-V1 velocity sensors and provides a 0 to 10V DC signal to the DDC controller. The SIA07A can power only four FKA-V1 sensors (max load on 15V DC supply 250mA). The SIA07A/F//4/10V/10V/A averages the flows from four velocity sensors and provides an average signal to the DDC controller. See FKA-V1 product sheet for specifications.

APPLICATION 4 - SUMMING DRY CONTACTS FOR ZONE REHEAT VALVE CONTROL



The SIA07A/H//4/RC/10V/S sums four relay dry contacts and provides a stepped 0-10V DC output based on the number of contacts. This is accomplished through resistor network on the SIA07A board. The output signal is stepped in 1/4 increments of the 0 to 10V DC output.

Call for other calibration ranges and versions.