

The Leading Manufacturer of Interface Field

- Delta I/O -

SA100

SOCKET MOUNTING TYPE
DIGITAL CONVERTER



■ FEATURE

- Simple mounting on DIN Rail
- Corresponding to various applications
- Analog retransmission output
- Digital communications
- Advanced self-configuration

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General Specifications

DIGITAL CONVERTER WITH ALARM

DIGITAL 信號 變換器



The SA100 is a socket type Digital Converters and is available for mounting DIN rail.
The SA100 has features such as Analog output, Alarm, digital communications for networking.

SPECIFICATIONS

ITEMS	DESCRIPTIONS
Input	a) Thermocouple: K, J, E, T, R, S, B, N (JIS/IEC) W5Re/W26Re (ASTM) U, L (DIN) b) RTD Pt100 (JIS/IEC), JPt100 (JIS) c) DC voltage 0-5, 1-5, 0-10V DC d) DC current 0-20, 4-20mA DC
PV Bias	-span to +span (Within -1999 - 9999)
Sampling time	0, 5 secretary
Measuring Accuracy	a) Thermocouple $\pm 0, 3\%$ of reading +1digit $\pm 1^{\circ}\text{C}$ (2°F) *Accuracy is not guaranteed between 0-399 $^{\circ}\text{C}$ (0-799 $^{\circ}\text{F}$) for type R, S, B -100, 0 $^{\circ}\text{C}$ (-158, 0 $^{\circ}\text{F}$) for type T, U b) RTD $\pm 0, 3\%$ of reading +1digit $\pm 0, 8^{\circ}\text{C}$ (1, 6 $^{\circ}\text{F}$) c) DC voltage and DC current $\pm 0, 3\%$ of span +1 digit
Input impedance	a) Thermocouple: Approx. 1M Ω , b) RTD : Approx. 0, 01(%/2)reading
Output	Current output : 0-20, 4-20mA DC Load resistance : 400 Ω
Alarm (Up to 2Point)	a) Alarm type : Process High, Low b) Setting Range : Same as set value (SV) c) Differential gap : 2 $^{\circ}\text{C}$ (Thermocouple) 0, 2 $^{\circ}\text{C}$ (RTD) 0, 2%DC voltage, Current
Communications	a) method : Based on RS-485 (2-wire) b) speed : 2400, 4800, 9600, 19200BPS c) Protocol : ANSI X3, 28 (1976) 2, 5 A4 MODBUS d) Bit format Start bit : 1 Data bit : 7 or 8, for MODBUS 8bit Parity bit : Without, Odd or Even Stop bit : 1 or 2 e) code : ASCII (JIS) 7-bit code f) Maximum connection : 31 (Address 0-99)
Waterproof/Dustproof	Ip65
Power supply	a) 85-264V AC (Rating 100-240V 50/60Hz) b) 21-26V AC (Rating 24V 50/60Hz) c) 21-26V DC (Rating 24V)
Power Consumption	a) Less than 4VA (110V), 7VA (240V) AC b) Less than 4VA (24V) AC c) Less than 100mA (24V) DC
Operating Environments	0 - 50 $^{\circ}\text{C}$ (32-122 $^{\circ}\text{F}$), 45-85% RH
Memory Backup	Backed up by non-volatile memory. Number of writing, Approx. 100,000times
Operating Environments	0-50 $^{\circ}\text{C}$ (32-122 $^{\circ}\text{F}$), 45-85% RH
Weight	Approx. 120g
Mounting	DIN rail socket, Panel Mounting
Dimensions	W48 X H48 X D70mm (1/16 DIN)

ORDERING CODE

MODEL : SA100 **A****B****C** - **D****E** - **F** * **G****H** - **I****J** / **K** // Y

A**B****C** Input and Range
See Range and Input Code Table

D OUT 1(output)
7 : DC current output : 0 to 20mA
8 : DC current output : 4 to 20mA

E OUT 2(output)
N : No output

F Power supply voltage
3 : 24V AC/DC
4 : 100 to 240V AC

G Alarm 1
N : No alarm
☐ : See Alarm Code Table

H Alarm 2
N : No alarm
☐ : See Alarm Code Table

I Communication Contact input
N : Not supplied
5 : Digital communications : RS-485
6 : Digital communications : RS-485 (MODBUS)
D : External contact input

J Waterproof /Dustproof
N : Not supplied
1 : Waterproof /Dustproof protection

K Output allocation code
☐ : See Output Allocation Code Table

Y Instrument version
Version symbol

RANGE AND INPUT CODE TABLE

Thermocouple input (Field-programmable)

Input	Code	Range
K (JIS/IEC)	K 01	0 to 200°C
	K 02	0 to 400°C
	K 03	0 to 600°C
	K 04	0 to 800°C
	K 05	0 to 1000°C
	K 06	0 to 1200°C
	K 07	0 to 1372°C
	K 13	0 to 100°C
	K 14	0 to 300°C
	K 20	0 to 500°C
	K 17	0 to 450°C
	K 08	-199.9 to 300.0°C
	K 09	0.0 to 400.0°C
	K 10	0.0 to 800.0°C
	K 29	0.0 to 200.0°C
	K 37	0.0 to 600.0°C
	K 38	-199.9 to 800.0°C
	K A1	0 to 800°F
	K A2	0 to 1600°F
	K A3	0 to 2502°F
	K A9	20 to 70°F
	K A4	0.0 to 800.0°F
	K B2	-199.9 to 999.9°F
J (JIS/IEC)	J 01	0 to 200°C
	J 02	0 to 400°C
	J 03	0 to 600°C
	J 04	0 to 800°C
	J 05	0 to 1000°C
	J 06	0 to 1200°C
	J 01	0 to 450°C
	J 07	-199.9 to 300.0°C
	J 08	0.0 to 400.0°C
	J 09	0.0 to 800.0°C
	J 22	0.0 to 200.0°C
	J 23	0.0 to 500.0°C
	J 30	-199.9 to 600.0°C
	J A1	0 to 800°F
	J A2	0 to 1600°F
	J A3	0 to 2192°F
	J A6	0 to 400°F
	J B6	0.0 to 800.0°F
	J A9	-199.9 to 999.9°F
R (JIS/IEC)	R 01	0 to 1500°C
	R 02	0 to 1769°C
	R 04	0 to 1350°C
	R A1	0 to 3200°F
	R A2	0 to 3216°F

Input	Code	Range
S (JIS/IEC)	S 01	0 to 1600°C
	S 02	0 to 1769°C
	S A1	0 to 3200°F
	S A2	0 to 3216°F
B (JIS/IEC)	B 01	400 to 1800°C
	B 02	0 to 1820°C
	B A1	800 to 3200°F
	B A2	0 to 3308°F
E (JIS/IEC)	E 01	0 to 800°C
	E 02	0 to 1000°C
	E A1	0 to 1600°F
	E A2	0 to 1832°F
N	N 01	0 to 1200°C
	N 02	0 to 1300°C
	N 06	0.0 to 800.0°C
	N A1	0 to 2300°F
	N A2	0 to 2372°F
	N A5	0.0 to 999.9°F
T (JIS/IEC)	T 01	-199.9 to 400.0°C
	T 02	-199.9 to 100.0°C
	T 03	-100.0 to 200.0°C
	T 04	0.0 to 350.0°C
	T 1A	-199.9 to 752.0°F
	T A2	-100.0 to 200.0°F
	T A3	-100.0 to 400.0°F
	T A4	0.0 to 450.0°F
W5Re/W26Re (ASTM)	W 01	0 to 2000°C
	W 02	0 to 2320°C
	W A1	0 to 4000°F
	W A2	0 to 2534°F
PLII (NBS)	A 01	0 to 1300°C
	A 02	0 to 1390°C
	A 03	0 to 1200°C
	A A1	0 to 2400°F
U (DIN)	U 01	-199.9 to 600.0°C
	U 02	-199.9 to 100.0°C
	U 03	0.0 to 400.0°C
	U A1	-199.9 to 999.9°F
L (DIN)	L 01	0 to 400°C
	L 02	0 to 800°C
	L A1	0 to 800°F
	L A2	0 to 1600°F

RTD input (Field-programmable)

Input	Code	Range
Pt100 (JIS/IEC)	D 01	-199.9 - 649.0°C
	D 02	-199.9 - 200.0°C
	D 03	-100.0 - 50.0°C
	D 04	-100.0 - 100.0°C
	D 05	-100.0 - 200.0°C
	D 06	0.0 - 50.0°C
	D 07	0.0 - 100.0°C
	D 08	0.0 - 200.0°C
	D 09	0.0 - 300.0°C
	D 10	0.0 - 500.0°C
	D A1	-199.9 - 999.9°F
	D A2	-199.9 - 400.0°F
	D A3	-199.9 - 200.0°F
	D A4	-199.9 - 100.0°F
Pjt100 (JIS)	D A5	-100.0 - 300.0°F
	D A6	0.0 - 100.0°F
	D A7	0.0 - 200.0°F
	D A8	0.0 - 400.0°F
	D A9	0.0 - 500.0°F
	P 01	-199.9 - 649.0°C
	P 02	-199.9 - 200.0°C
	P 03	-100.0 - 50.0°C
	P 04	-100.0 - 100.0°C
	P 05	-100.0 - 200.0°C
	P 06	0.0 - 50.0°C
	P 07	0.0 - 100.0°C
	P 08	0.0 - 200.0°C
	P 09	0.0 - 300.0°C
	P 10	0.0 - 500.0°C

Voltage/Current DC Input (Field-programmable)

Input	Code	Range
0 to 5V	4 01	0 to 100.0%
0 to 10V	5 01	0 to 100.0%
1 to 5V	6 01	0 to 100.0%
0 to 20mA	7 01	0 to 100.0%
4 to 20mA	8 01	0 to 100.0%

- 1 Type R, S and B input : Accuracy is not guaranteed between 0 and 399° C (0 and 799° F).
 2 Type T and U input : Accuracy is not guaranteed less than -100.0° C (-158.0° F).
 3 DC current input : A 250 W resistor is externally connected at the input terminals.

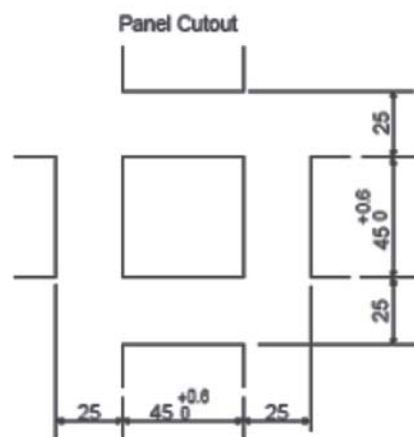
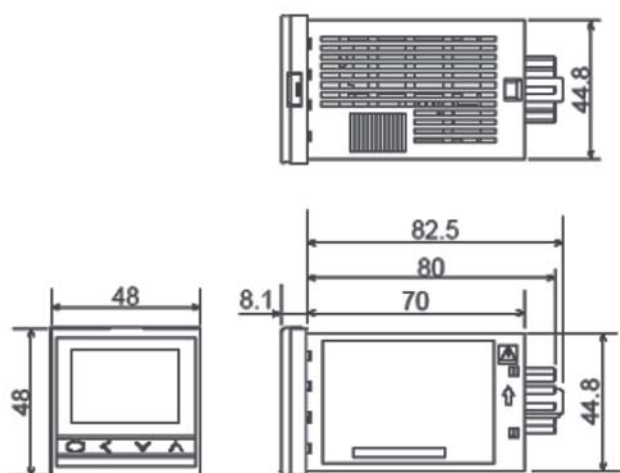
Alarm Code Table

J	Process Low	K	Process High Hold	L	Process High Hold	R	Loop break Alarm
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Output Allocation Code Table

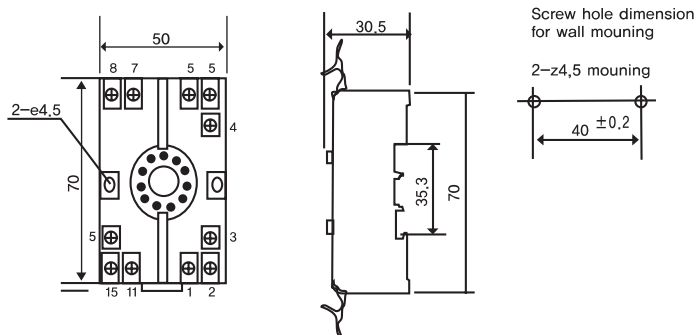
09	Alarm 1 + Alarm 2	2	Alarm 1 output (Energized)	Alarm 2 output (Energized)
10	Alarm 1 + Alarm 2	2	Alarm 1 output (De-energized)	Alarm 2 output (De-energized)
11	Alarm 1 + Alarm 2	2	Alarm 1 output (De-energized)	Alarm 2 output (De-energized)
13	Retransmission + Alarm 1,2		Retransmission output	OR logic output of Alarm 1 and Alarm 2 (Energized)
14	Retransmission + Alarm 1,2		Retransmission output	OR logic Alarm 1 of Alarm 1 and Alarm 2 (De-energized)
15	Retransmission + Alarm 1,2		Retransmission output	AND logic output of Alarm 1 and Alarm 2 (Energized)
16	Retransmission + Alarm 1,2		Retransmission output	AND logic output of Alarm 1 and Alarm 2 (De-energized)
17	Retransmission + Alarm 1		Retransmission output	Alarm 1 output (Energized)
18	Retransmission + Alarm 1		Retransmission output	Alarm 1 output (De-energized)
19	Heat-Cool PID Control		Cool output (DC current output)	Heat output(Relay contact or Voltage pulse output)

EXTERNAL DIMENSIONS AND REAR LAYOUT

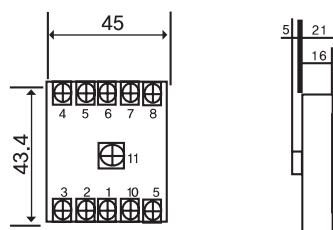


- * Panel thickness must be between 1–10mm.
- * Mounting frame is optional.

DIN rail mounting socket type
Modal : ATC180041 (Matsushita Denko product)



Rear terminal socket type
Modal : At78051 (Matsushita Denko product)



Communication function and contact input are optional.
Connect connector to bottom of instrument.
A connector and connector cable for connecting the input block is necessary to be prepared by the customer.
Housing: XHP-3 (J.S.T. Mfg. Co., Ltd. product)
Recommended cable size: AWG30 to 22