

SRZ SERIES

Module type
Process/Temperature Controller

SRZ

High-Performance



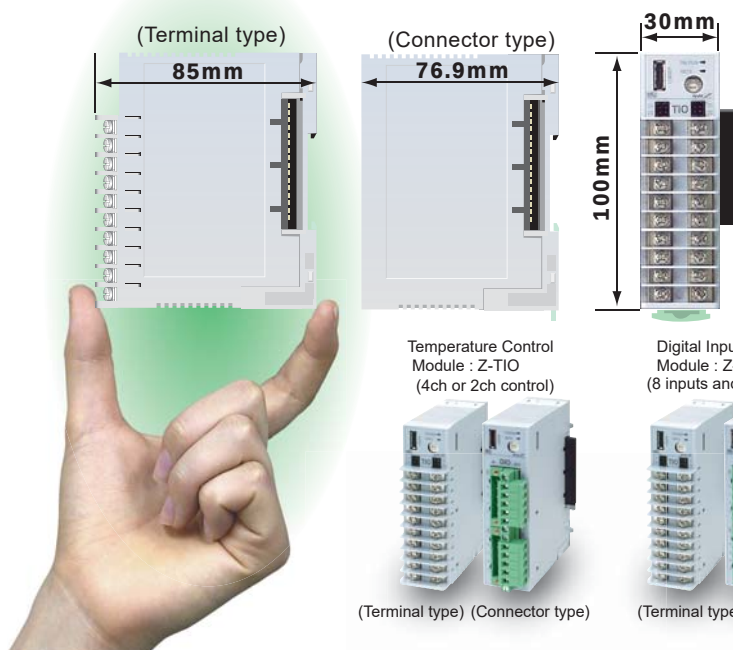
CE,UL,c-UL,RCM

RKC® RKC INSTRUMENT INC.

4CH temperature controller packed in one compact module

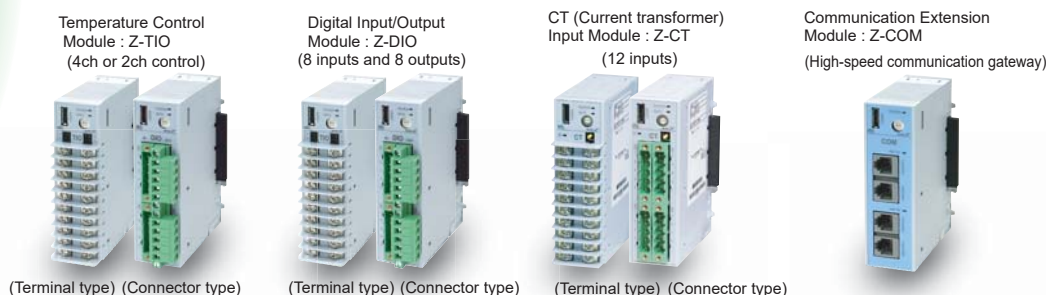
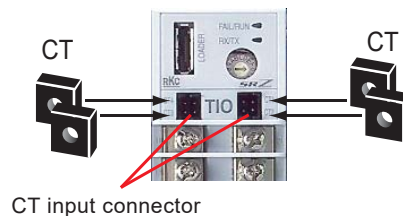
● Compact

Width 30mm, depth 85mm (connector type : 76.9mm) compact design with 4ch control type.

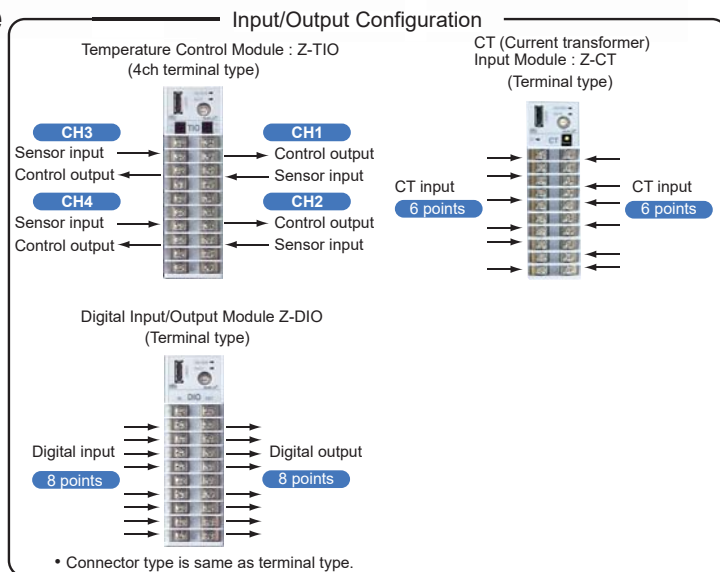
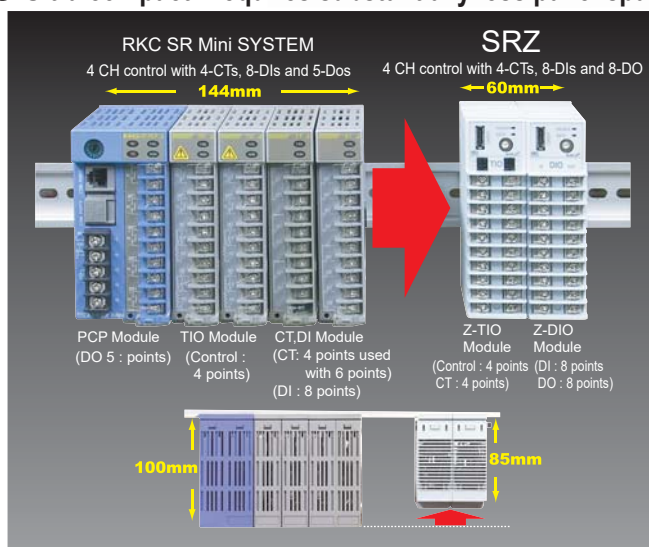


● 4 CT inputs and 4ch controls in one module

4ch Z-TIO module can have 4 CT (Current transformer) inputs.



● Ultra compact - requires substantially less panel space



Flexible temperature control system configuration

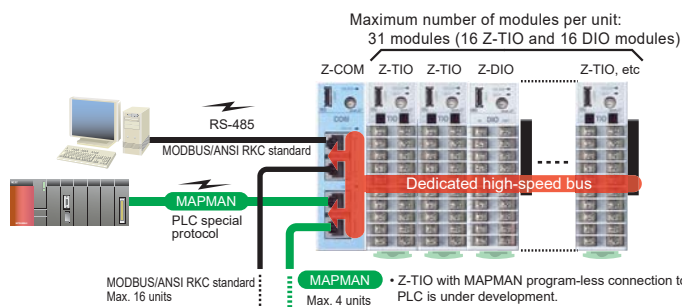
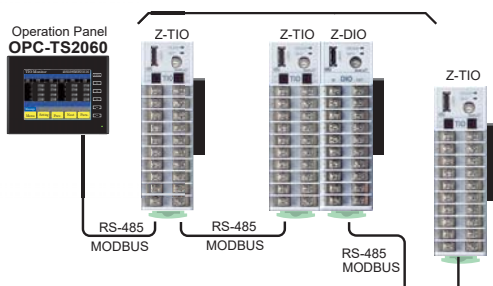
● Distributed installation

Modules can be remotely distributed by connecting them via RS-485 communication. Up to 16 Z-TIO (64 CH) and 16 Z-DIO (128 DI/DOs) modules can be connected to one serial communication line by distributed installation. The maximum number of modules connected by distributed installation is 31 modules.

● High-speed communication with large systems, Program-less connection to PLCs

Z-COM module can manage data from connected control modules via high-speed bus connection. MAPMAN program-less connection to PLC is also available.

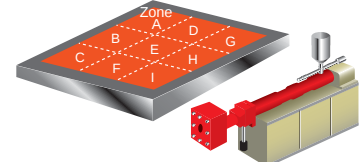
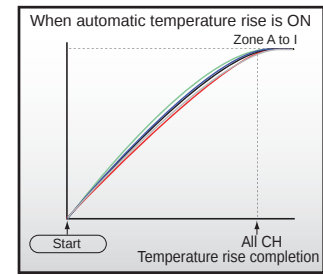
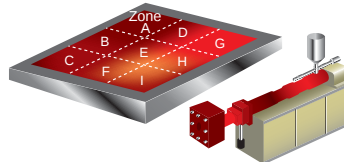
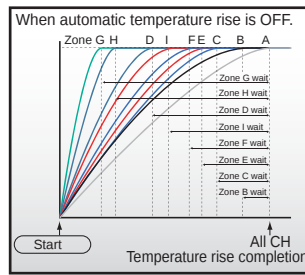
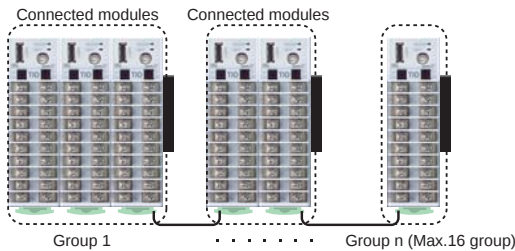
Program-less connectable PLCs: Mitsubishi Electric MELSEC Series



Advanced functions enhance multi-loop control

● Temperature uniformity at ramp-up (Auto-temperature rise function)

The Auto-temperature rise function controls the rate of temperature rise uniformly across all the channels in a specified group. The SRZ system has the ability to have multiple groups within each system. This uniform controlled temperature rise will suppress local overheating and mechanical distortion in the tools, contributing to higher product quality.

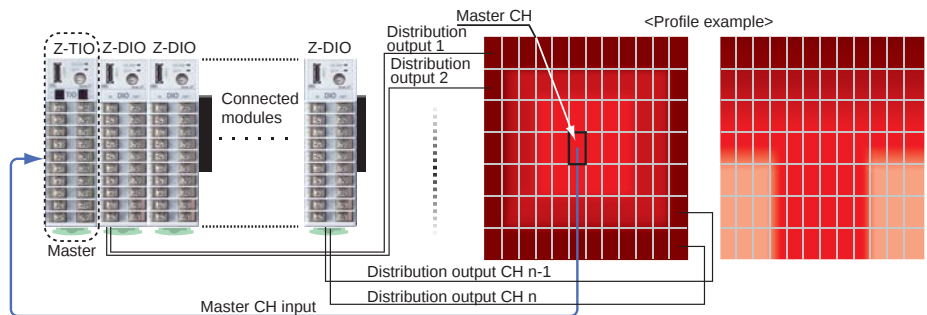


● Multi-loop profile control (Output ratio distribution function)

This function enables one master loop to distribute its output value to multiple outputs of Z-DIO modules. Bias and ratio can be set for each output independently.

A maximum of 187 distribution outputs from one control loop is possible when Z-DIOs and Z-TIOs are used for output ratio distribution.

- Output ratio distribution function works via back plane connected modules.
- Distribution output from DIO module becomes open collector output or relay contact output.

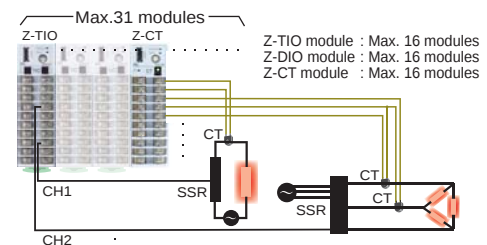


● Automatic SV setting on heater break alarm and heater over current alarm

Set values of Heater break alarm (HBA) and heater over current alarm are automatically set by pressing a front-mounted push button when a heater is on.

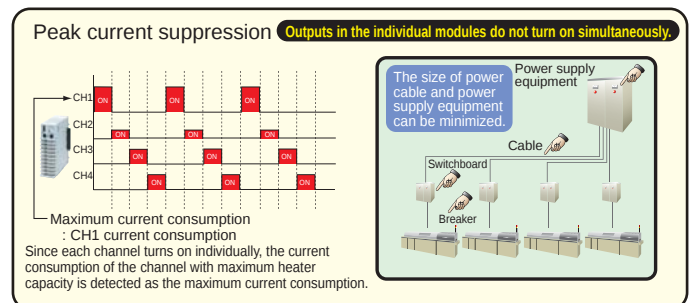
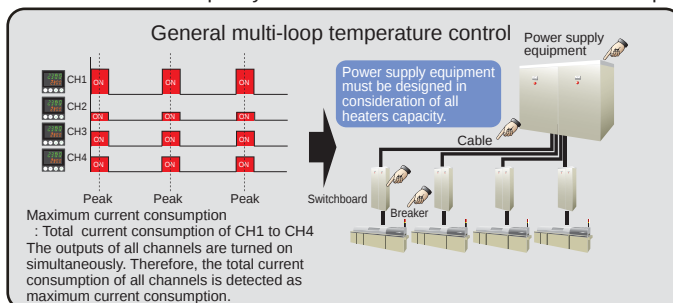
This function is also available for three-phase heater break alarm.

- HBA function of Z-CT module is designed only for time proportional control (On/Off output.) Phase control (continuous output) is not available.
- The CT input monitor value indicates the effective value when the heater break alarm function is enabled and output is 100% (heater ON) or 0% (heater OFF).



● Peak current suppression

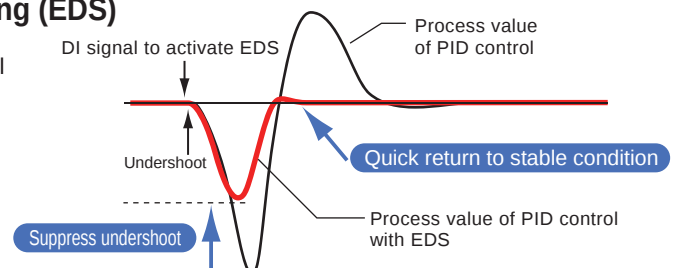
Peak current suppression minimizes the capacity of electrical materials such as power supply equipments, switchboards, power lines, and breakers since this function makes the timing of control output on each channel separate so that the current consumption of the channel with maximum heater capacity is detected as maximum current consumption.



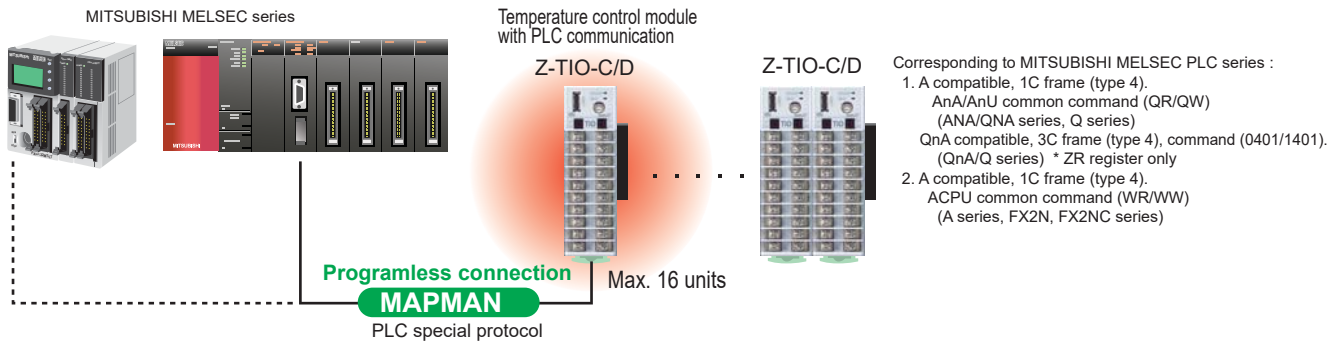
● External disturbance suppression with autotuning (EDS)

EDS with autotuning calculates optimum settings to suppress control disturbance caused by external factors. The function is activated by a DI signal to adjust control output (feed-forward) to compensate for the disturbance.

It is suitable for an application in which external disturbance can be predicted, such as wafer-in/out in semiconductor manufacturing equipment, and during injection in injection molding machine.



Programless connection to PLCs (Temperature control module with PLC communication : Z-TIO-C/D)

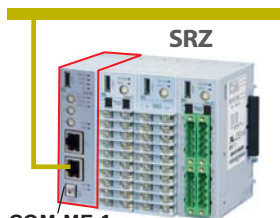


Open Network Connectivity

EtherNet/IP
MODBUS/TCP

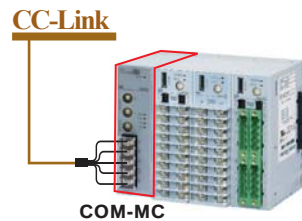
EtherCAT
Ethernet
MAPMAN

CC-Link : Communication converter COM-MC



COM-ME-1
COM-ME-2
COM-ME-3
COM-ME-6

● Available module : Z-TIO-A/Z-TIO-B, Z-DIO, Z-CT



● Available module : Z-TIO-A/Z-TIO-B, Z-DIO

COM-ME

● COM-ME-1

Modbus/TCP communication
Ethernet communication : Modbus/TCP
Physical layer: 100BASE-TX
User layer: Modbus/TCP
Port spec : RJ-45 x 2 port
IP Address : 0.0.0.0~255.255.255.255
* Local backloop address (127.0.0.1~127.255.255.254) can not be used.
Subnet mask : 0.0.0.0~255.255.255.255

● COM-ME-2

EtherNet/IP communication
Physical layer: 10BASE-T/100BASE-TX Automatic recognition
* Only 100BASE-TX can be used under Daisy Chain network
User layer: EtherNet/IP
Port spec : RJ-45 x 2 port
IP Address : 0.0.0.0~255.255.255.255
* The IP address 127.0.0.1 is reserved as the loopback address.
Subnet mask : 0.0.0.0~255.255.255.255

● COM-ME-3

EtherCAT communication
Device type : No profile
Physical layer: 100BASE-TX
User layer: EtherCAT
Correspondence protocol: CAN application protocol over EtherCAT
Communication object: SDO, PDO
Connector type: RJ-45 (2 ports)
PDO data length : Max. 1024byte
Both RxPDO (Output) and TxPDO (Input)
Synchronous mode: Free Run

● COM-ME-6

Ethernet (Ethernet MAPMAN) Communication
Physical layer: 10BASE-T/100BASE-TX Automatic recognition
* Only 100BASE-TX can be used under Daisy Chain network
User layer: TCP/IP, Dedicated Mitsubishi PLC protocol
Port spec : RJ-45 x 2 port
IP Address : 0.0.0.0~255.255.255.255
* Local backloop address (127.0.0.1~127.255.255.254) can not be used.
Subnet mask : 0.0.0.0~255.255.255.255

● COM-ME Common Specifications

Host communication
Interface: RS-485
Communication speed: 9600 bps, 19200 bps, 38400 bps, 57600 bps
Protocol:
1) ANSI X3.28-1976 subcategories 2.5 and B1
2) MODBUS-RTU

Loader communication
Communication speed: 38400 bps
Maximum connections: 1 unit
Connection with a loader communication cable for our USB converter COM-KG (sold separately).

General Specifications

Power supply voltage : 24V DC
Current consumption : 150 mA max.
Rush current : Less than 15A
Allowable ambient temperature: -10 to +55°C
Allowable ambient humidity : 5 to 95 %RH
(Absolute humidity: MAX.W.C 29.3 g/m3 dry air at 101.3 kPa)
Weight : Approx. 150 g

COM-MC

CC-Link communication

Protocol: CC-Link Ver.2.00/Ver.1.10
Communication speed: 156 kbps, 625 kbps, 2.5 Mbps
5 Mbps, 10 Mbps

Communication data length

Number of occupied station/Extended cyclic	Remote Input/Output (RX/RX)	Remote register (RWw/RWw)	Number of CC-Link assignment channels
4 stations occupied 1 time	Input: 128-bit Output: 128-bit	RWw: 16-word RWw: 16-word	8channels or 16channels
4 stations occupied 2 time	Input: 224-bit Output: 224-bit	RWw: 32-word RWw: 32-word	16channels or 32channels
4 stations occupied 4 time	Input: 448-bit Output: 448-bit	RWw: 64-word RWw: 64-word	32channels or 64channels
1 stations occupied 1 time	Input: 32-bit Output: 32-bit	RWw: 4-word RWw: 4-word	1channels or 2channels

Communication distance:

Communication speed	Maximum network length
10Mbps	100m
5Mbps	200m
2.5Mbps	400m
625kbps	900m
156kbps	1200m

Station number :

1 to 61 (4 stations occupied 1 time, 4 stations occupied 2 times, 4 stations occupied 4 times)

1 to 64 (1 station occupied 1 time)

Number of occupied station/extended cyclic and CC-Link version:

CC-Link Ver. 1.10: 1 station occupied 1 time, 4 stations occupied 1 time

CC-Link Ver. 2.00: 4 stations occupied 2 times, 4 stations occupied 4 times

Termination resistor: External installation is necessary

(Between the DA and DB terminals: 110Ω± 5 % 1/2 W)

Communication to SRZ

Available module : Z-TIO-A / Z-TIO-B / Z-DIO-A

Maximum connection

Total module 24 modules

*Z-TIO modules: Max.16units, and Z-DIO modules: Max.16units

Communication method: RS-485

Protocol : Modbus-RTU

General Specifications

Power supply voltage: 24V DC

Current consumption: Less than 45mA

Rush current : Less than 15A

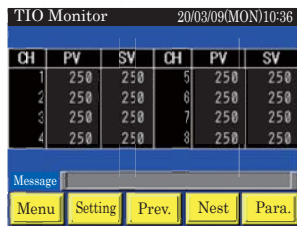
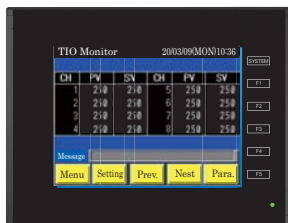
Weight : 130g

External dimensions: 30 x 100 x 87.5mm (W x H x D)

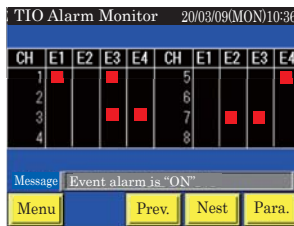
Display Unit

● Operation Panel : OPC-TS2060

5.7 inches TFT color LCD operation panel



<PV/SV monitor>

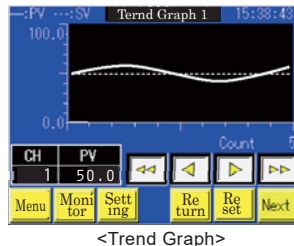
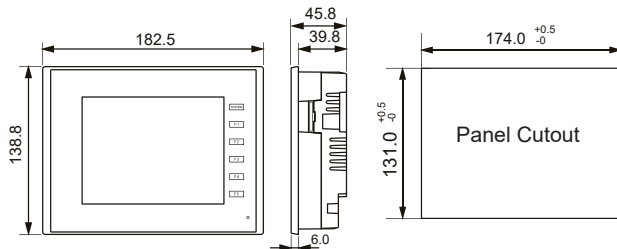


<Alarm monitor>

● OPC-TS2060 Specifications

Display : TFT color LCD
 Power supply voltage : 24V DC
 Power consumption : Less than 13W
 Ambient temperature : 0 to 50°C
 Ambient humidity : Less than 85% RH
 Waterproof/Dustproof : IP65
 Weight : 580g
 Compliance : UL, cUL, CE marking

● External Dimension Unit : mm



<Trend Graph>

Communication with a PC via USB port (Loader communication)

● Easy parameter setup via USB loader port with PROTEM2 software (Loader communication)

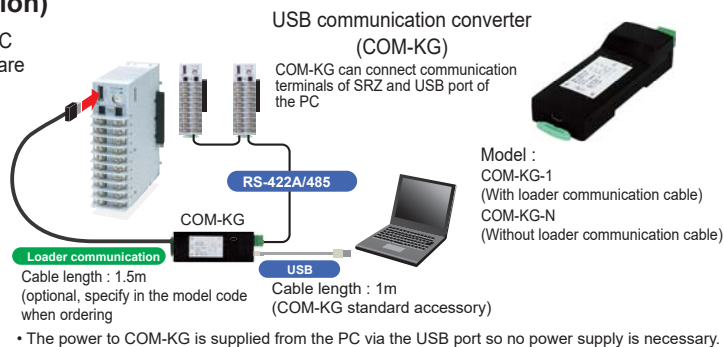
The SRZ module has a standard loader port on the front panel to connect to a PC USB port via COM-KG (USB communication converter). Using PROTEM2 software on the PC, parameter settings can be easily saved on the PC, and the same parameter settings are easily copied to other SRZ modules.

● Easy data monitoring and logging with PROTEM2 software

The Win-UCI software enables data monitoring and logging on the PC via communication terminals of SRZ. When SRZ communication terminals are connected to COM-KG (see the diagram below), the USB port can be used on the PC side.

The Loader port is only for parameter setup

* Win-UCI for SRZ is coming soon on the RKC Instrument website (www.rkcinst.com).



Specifications

Temperature Control Module (Z-TIO)

Input

Universal input

Number of inputs

4 or 2 channel (Isolated between inputs)

Input

- a) Temperature, Current, Low voltage input group
 - Thermocouple : K, J, E, T, R, S, B, N (JIS/IEC)
 - PLII (NBS), W5Re/W26Re (ASTM)
 - RTD : Pt100 (JIS/IEC), JPt100 (JIS)
 - 3-wire system
 - Low voltage (Input impedance : More than 1MΩ)
 - 0 to 1V DC, 0 to 100mV, 0 to 10mV DC
 - Current (Input impedance : 50Ω)
 - 4 to 20mA, 0 to 20mA

- b) High voltage input group
 - High voltage (Input impedance : 1MΩ)
 - 1 to +1V DC, 0 to 5V DC, 1 to 5V DC, 0 to 10V DC
 - Available for feedback resistance input

Sampling time : 0.25sec

Influence of external resistance : 0.125μV/Ω (Thermocouple input)

Influence of lead resistance : 0.02% of reading/Ω (RTD input)

- Maximum 10Ω per wire

Input break action

- a) Thermocouple input : Up-scale/Down-scale (Selectable)
- b) RTD input : Up-scale
- c) Low voltage input : Up-scale/Down-scale (Selectable)
- d) Current input : Value around 0mA
- e) High voltage input : Value around 0V

Input short action : Down-scale (RTD input)

Input digital filter : 0.1 to 100.0 sec. (OFF when 0 is set.)

PV bias : -span to +span

PV ratio : 0.500 to 1.500

Control

- a) Brilliant II PID control
 - Direct action/Reverse action is selectable
- b) Brilliant II PID control (Heat/Cool type)
- c) Position proportioning control without feedback resistance
 - a), b), c) is selectable
 - With auto-tuning and start-up tuning (Except for position proportioning control)
- a) Proportional band :
 - Temperature input : 0 to input span (°C, °F)
 - Voltage/Current input : 0.0 to 1000.0% of input span
 - Differential gap at ON/OFF control (High/Low individual setting) :
 - Temperature input : 0 to input span (°C, °F)
 - Voltage/Current input : 0.0 to 100.0% of input span
- b) Integral time : 0 to 3600 sec or 0.0 to 1999.9 sec (selectable)
- c) Derivative time : 0 to 3600 sec or 0.0 to 1999.9 sec (selectable)
- d) Cool side proportional band :
 - Temperature input : 1(0.1, 0.01) to input span (°C, °F)
 - Voltage/Current input : 0.1 to 1000.0% of input span
- e) Cool side Integral time :
 - 0 to 3600 sec or 0.0 to 1999.9 sec (selectable)
- f) Cool side Derivative time :
 - 0 to 3600 sec or 0.0 to 1999.9 sec (selectable)
- g) Overlap/Deadband
 - Temperature input : -span to +span (°C, °F)
 - Voltage/Current input : -100.0 to +100.0% of input span
- h) Control response : Slow, Medium, Fast
- i) Ramp-to-setpoint : 0 to span per Time
 - (Time is settable between 1 and 3600 sec)
 - Up/Down individual setting
- j) Output limiter : -5.0 to +105.0% (High/Low individual setting)
- k) Output change rate limiter : 0.0 to 100.0%/sec
 - (Up/Down individual setting)
- l) Proportional cycle time : 0.1 to 100.0 sec
- m) Cool side proportional cycle time : 0.1 to 100.0 sec
- n) Manual reset : -100.0 to +100.0%
- o) Output at Control Stop mode : -5.0 to +105.0%
 - (Heat side/Cool side individual setting)

Performance

Input	Input Range	Accuracy
K, J, T, PLII, E	Less than -100°C (-148°F)	±2.0°C (±3.6°F)
	-100 to +500°C (-148 to 932°F)	±1.0°C (±1.8°F)
	More than 500°C (932°F)	±(0.2% of reading+1digit)
N, S, R, W5Re/W26Re	Less than 1000°C (1832°F)	±2.0°C (±3.6°F)
	More than 1000°C (1832°F)	±(0.2% of reading+1digit)
	Less than 400°C (752°F)	±70.0°C (±126°F)
B	400 to 1000°C (752 to 1832°F)	±2.0°C (±3.6°F)
	More than 1000°C (1832°F)	±(0.2% of reading+1digit)
	Pt100, JPt100	±0.4°C (±0.8°F)
DC V, DC A FBR input	Less than 200°C (392°F)	±0.4°C (±0.8°F)
	More than 200°C (392°F)	±(0.2% of reading+1digit)
	DC V, DC A	±0.2% of span
	FBR input	±1.0% of span +1digit

- Cold junction temperature compensation error when close horizontal mounting
 - ±1.0°C (1.8°F) [Terminal type], ±2.0°C (3.6°F) [Connector type]

Insulation resistance

More than 20MΩ (500V DC) between measured terminals and ground

More than 20MΩ (500V DC) between power terminals and ground

More than 20MΩ (500V DC) between measured and power terminals

Dielectric voltage

750V AC for one minute between measured terminals and ground

750V AC for one minute between power terminals and ground

750V AC for one minute between measured and power terminals

Output

Number of outputs : 4 points or 2 points

Output

- a) Relay contact output, Form a contact
 - 250V AC 3A (Resistive load)
- b) Voltage pulse output, 0/12V DC
 - (Load resistance : More than 600Ω)
 - Power supply and output are not isolated

- c) Current output, 4 to 20mA DC, 0 to 20mA DC
 - (Load resistance : Less than 600Ω)
 - Power supply and output are not isolated.
- d) Continuous voltage output
 - 1 to 5V, 0 to 5V DC, 1 to 5V DC, 0 to 10V DC
 - (Load resistance : More than 1kΩ)
 - Power supply and output are not isolated.
- e) SSR (Triac) output, Rated current : 0.5A
- f) Open collector output (Sink type)
 - Load current : Less than 100mA

Event (Alarm) function

Number of events : Up to 4 points per channel

Event type

- Process high, Process low, Deviation high, Deviation low, Deviation high/low, Band, Set value high, Set value low, MV value high, MV value low, Cool side MV value high, Cool side MV value low, FBR value high, FBR value low, LBA (Control loop break alarm), Deviation high between channel, Deviation low between channel, Deviation high/low between channel, Deviation band between channel
- LBA, Temperature rise completion
- LBA is assignable to event 4.
- Temperature rise completion is assignable to event 3.

- a) Hold/Re-hold action is configurable.
- Valid for deviation/band/process alarm only.
- b) Energized/de-energized action is configurable.
- c) Delay timer : 0 to 1800sec
- d) Interlock (latch) function is configurable.

Heater break alarm function

Number of alarms : 4 or 2 points (1 point per CT input)

CT type :

CTL-6-P-N : 0 to 30A

CTL-12-S56-10L-N : 0 to 100A

Input accuracy

±(5% of input value + 1 digit) or 2A (whichever is larger)

Communication function

Communication method : RS-485

Communication speed : 4800bps, 9600bps, 19200bps, 38400bps

Protocol

- a) ANSI X3.28 sub-category 2.5B4 (RKC standard)
- b) MODBUS-RTU
- c) PLC special protocol (Mapman) : Z-TIO-C/D module
 - Corresponding to MITSUBISHI MELSEC PLC series :
 - 1. A compatible, 1C frame (type 4).
 - AnA/AnU common command (QR/QRW)
 - (ANA/QNA series, Q series)
 - QnA compatible, 3C frame (type 4), command (0401/1401)
 - (QnA/Q series) • ZR register only
 - 2. A compatible, 1C frame (type 4).
 - ACPU common command (WR/WW)
 - (A series, FX2N, FX2NC series)

Bit format

- a) RKC standard protocol
 - Start bit : 1, Data bit : 7 or 8,
 - Parity bit : 1 (odd or even) or none, Stop bit : 1 or 2
- b) MODBUS protocol
 - Start bit : 1, Data bit : 8 (binary or byte data),
 - Parity bit : 1 (odd or even) or none, Stop bit : 1

Maximum connection

Z-TIO-A/B: 31 modules

Z-TIO-C/D: 16 modules

Multi-Memory Area (recipe)

Number of areas : 8 areas (recipes) per channel

Stored parameters

Set value (SV), Event set values 1 to 4, LBA time, LBA dead band, Proportional band, Integral time, Derivative time, Cool side proportional band, Cool side integral time, Cool side derivative time, Overlap/Deadband, Manual reset, Control response parameter, Ramp-to-setpoint (Up/Down), Soak time Linking area number

Other functions

- a) Remote setpoint input
- b) Temperature ratio setting
- c) Cascade control mode
- d) Output ratio distribution function
 - Function which distributes the control output value of the master channel to the Z-DIO/TIO module output.
- e) EDS function
 - Function which suppresses overshoot and undershoot.
- f) Auto-temperature-rise with learning function
 - Function which achieves temperature uniformity at ramp-up in the same control group while learning function calculates optimum parameter settings for this function.
 - Up to 16 groups can be configured within modules which are connected each other by connectors on the base
- g) Peak current suppression function
 - This function is effective for modules connected each other by connectors on the base
 - The peak current suppression function is performed in coupled modules.
- h) Master-slave Mode
 - With this function, when a mode of Mode-master channel is changed, the mode of all slave channels (preset) will be also automatically changed. Modes can be selected among various mode function such as memory area (recipe).

Specifications

Digital Input/Output Module (Z-DIO)

Digital Input

- Number of inputs : 8 points
 • Isolated input (4 points/common)
 Input method
 Voltage contact input
 Open : Less than 5.0V, Close : More than 17.5V
 Contact current : Less than 3.0mA
 Allowable input voltage : Less than 26.4V DC
 Function : Interlock reset, RUN/STOP, Remote/Local, Auto/Manual, Memory area selection, External disturbance suppression
 Function allocation : See digital input allocation table

Digital Output

- Number of inputs : 8 points (4 points/common)
 Output signal
 a) Relay contact output, Form A Contact
 250V AC 1A, 30V DC 1A (Resistive load)
 b) Open collector output (Sink type)
 Allowable load current : Less than 100mA
 Load voltage : Less than 30V
 Minimum load : 0.5mA
 ON voltage : Less than 2.0V (at maximum load current)
 Leakage current at OFF : Less than 0.1mA
 Function :
 Event 1 output (CH1 to CH4), Event 2 output (CH1 to CH4)
 Event 3 output (CH1 to CH4), Event 4 output (CH1 to CH4)
 HBA output, Burn-out status output, Temperature rise completion output, Manual output
 Function allocation : See output allocation table

Communication Function

- Communication method : RS-485
 Communication speed : 4800bps, 9600bps, 19200bps, 38400bps
 Protocol
 a) ANSI X3.28 sub-category 2.5B4 (RKC standard)
 b) MODBUS-RTU
 Bit format
 a) RKC standard protocol
 Start bit : 1
 Data bit : 7 or 8
 Parity bit : 1 (odd or even) or none
 Stop bit : 1 or 2
 b) MODBUS protocol
 Start bit : 1
 Data bit : 8 (binary or byte data)
 Parity bit : none
 Stop bit : 1
 Maximum connection : 16 units

Communication Extension Module (Z-COM)

Communication Function

- Communication method : RS-485/RS-422A
 Communication speed : 4800bps, 9600bps, 19200bps, 38400bps
 Protocol
 a) ANSI X3.28 sub-category 2.5B4 (RKC standard)
 b) MODBUS-RTU
 c) PLC special protocol (Mapman)
 Corresponding to PLC
 MITSUBISHI MELSEC series
 AnA/AnU common command (QR/QW)
 (ANA/QNA series, Q series)
 OMRON SYSMAC series
 C mode command (WD/RD/WE/RE)
 Bit format
 a) RKC standard protocol
 Start bit : 1
 Data bit : 7 or 8
 Parity bit : 1 (odd or even) or none
 Stop bit : 1 or 2
 b) MODBUS protocol
 Start bit : 1
 Data bit : 8 (binary or byte data)
 Parity bit : 1 (odd or even) or none
 Stop bit : 1
 c) PLC special protocol (Mapman)
 Start bit : 1
 Data bit : 7 or 8
 Parity bit : 1 (odd or even) or none
 Stop bit : 1 or 2
 Communication allocation
 a) Communication 1 (COM PORT 1 to 2)
 RKC standard communication or MODBUS protocol
 Communication 2 (COM PORT 3 to 4)
 RKC standard communication, MODBUS protocol or PLC special protocol (Mapman)
 Maximum connection
 RKC standard protocol, MODBUS protocol : 16 units
 PLC special protocol (Mapman) : 4 units
 Maximum connection function module
 Same function module : 16 units
 Total function module : 31 units

CT (Current transformer) Input Module (Z-CT)

Input

- Number of inputs : 12 points
 CT type and Input range
 CTL-6-P-Z : 0.0 to 10.0A
 CTL-6-P-N : 0.0 to 30.0A
 CTL-12-S56-10L-N : 0.0 to 100.0A
 Sampling cycle : 3 sec
 Input accuracy :
 CTL-6-P-Z : $\pm 0.3A$
 CTL-6-P-N : $\pm 2\%$ of reading or $\pm 1.0A$
 CTL-12-S56-10L-N : $\pm 2\%$ of reading or $\pm 1.0A$

Event (Alarm)

- Alarm type : Heater break alarm (HBA) and Heater overcurrent alarm
 • Interlock (latch) function is configurable.
 • Alarm delay time : 0 to 255 times
 Setting method : Via communication or push-button switch
 • Automatic alarm setting function is available.
 CT allocation : Module address setting and channel setting

Communication Function

Same as DIO module communication function

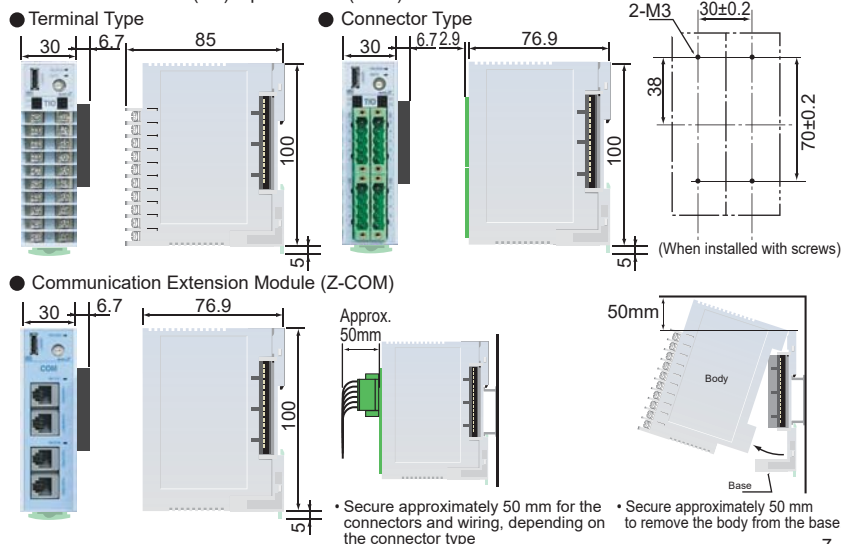
Z-TIO, Z-DIO, Z-CT, Z-COM Common Specifications

General Specifications

- Supply voltage : 21.6 to 26.4V DC (Including supply voltage variation)
 Rating : 24V DC
 Power consumption
 a) Z-TIO : Less than 140mA, Surge current : Less than 10A
 b) Z-DIO : Less than 70mA, Surge current : Less than 10A
 c) Z-CT : Less than 70mA, Surge current : Less than 10A
 d) Z-COM : Less than 30mA, Surge current : Less than 10A
 Power failure
 A power failure of 4m sec or less will not affect the control action.
 • If power failure of more than 20m sec occurs, controller will restart with the state of HOT or COLD start. (Only Z-TIO)
 Memory backup
 Backed up by non-volatile memory (FRAM)
 • Data retaining period : Approx. 10 years
 • Number of writing : Approx. 10,000,000 times.
 (Depending on storage and operating conditions.)
 Ambient temperature : -10 to +50°C (14 to 122°F)
 Ambient humidity : 5 to 95% RH (Non condensing)
 • Absolute humidity : MAX.W.C 29.3g/m³ dry air at 101.3kPa
 Weight
 Z-TIO
 Terminal type : Approx 130g (2ch type), Approx 160g (4ch type)
 Connector type : Approx 120g (2ch type), Approx 140g (4ch type)
 Z-DIO
 Terminal type : Approx 150g (DI/DO 8ch type)
 Approx 120g (DI 8ch type)
 Approx 140g (DO 8ch type)
 Connector type : Approx 130g (DI/DO 8ch type)
 Approx 100g (DI 8ch type)
 Approx 120g (DO 8ch type)
 Z-CT
 Terminal type : Approx 160g
 Connector type : Approx 140g
 Z-CT: Approx 110g
 Operating environment
 Free from corrosive and flammable gas and dust.
 Free from external noise, vibration, shock and exposure to direct sunlight.
 Compliance with Standards
 CE Mark, UL, c-UL, RCM mark

External Dimensions

Temperature Control Module (Z-TIO)
 Digital Input/Output Module (Z-DIO)
 Current transformer (CT) Input Module (Z-CT)



Model and Suffix Code

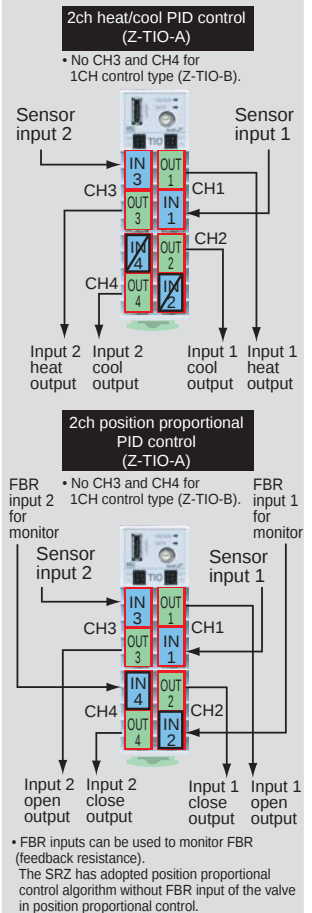
4ch type Temperature Control Module (Z-TIO-A/C)

* If used as a heat and cool module or position proportional controller then it is only 2 channels.

Specifications		Hardware coding										Quick start code			Control output		
		1	2	3	4	5	6	7	8	9	10				PID control	Heat/Cool PID control	Position proportional PID control without FBR
Wiring method	① Terminal type	T															
	② Connector type	C															
Output 1	③ See Output Code Table														CH1 output	CH1 Heat output	CH1 Open output
Output 2	④ See Output Code Table														CH2 output	CH1 Cool output	CH1 Close output
Output 3	⑤ See Output Code Table														CH3 output	CH2 Heat output	CH2 Open output
Output 4	⑥ See Output Code Table														CH4 output	CH2 Cool output	CH2 Close output
CT input	⑦ Not supplied																
	⑧ CT input 4 points																
Quick start code 1	Control method	No quick start code (Default setting)															
		Specify quick start code 1															
		Specify quick start code 1 and 2 (See page 7)															
		No quick start code															
		PID control with AT (Reverse action)															
Input range	Input range	No quick start code															
		Specify quick start code 1															
		Specify quick start code 1 and 2 (See page 7)															
		No quick start code															
		PID control with AT (Direct action)															
Instrument version	Version symbol	Heat/Cool PID control with AT (Air cooling type) (CH2 and CH4 are unused.)															
		Heat/Cool PID control with AT (Water cooling type) (CH2 and CH4 are unused.)															
		Heat/Cool PID control with AT (CH2 and CH4 are unused.)															
		Position proportional PID control without FBR (CH2 and CH4 are unused.)															
		No quick start code															

Input/Output configuration

(Heat/Cool PID control or Position proportional PID control)



2ch type Temperature Control Module (Z-TIO-B/D)

* If used as a heat and cool module or position proportional controller then it is only 1 channels.

Specifications		Hardware coding										Quick start code			Control output		
		1	2	3	4	5	6	7	8	9					PID control	Heat/Cool PID control	Position proportional PID control without FBR
Wiring method	① Terminal type	T															
	② Connector type	C															
Output 1	③ See Output Code Table														CH1 output	CH1 Heat output	CH1 Open output
Output 2	④ See Output Code Table														CH2 output	CH1 Cool output	CH1 Close output
CT input	⑤ Not supplied																
	⑥ CT input 2 points																
Quick start code 1	Control method	No quick start code (Default setting)															
		Specify quick start code 1															
		Specify quick start code 1 and 2 (See page 7)															
		No quick start code															
		PID control with AT (Reverse action)															
Input range	Input range	No quick start code															
		Specify quick start code 1															
		Specify quick start code 1 and 2 (See page 7)															
		No quick start code															
		PID control with AT (Direct action)															
Instrument version	Version symbol	Heat/Cool PID control with AT (Air cooling type) (CH2 and CH4 are unused.)															
		Heat/Cool PID control with AT (Water cooling type) (CH2 and CH4 are unused.)															
		Heat/Cool PID control with AT (CH2 and CH4 are unused.)															
		Position proportional PID control without FBR (CH2 and CH4 are unused.)															
		No quick start code															

Output Code Table

Output Type	Code
Relay contact output	M
Voltage pulse output (0/12V DC)	V
0 to 1V DC	3
0 to 5V DC	4
0 to 10V DC	5
1 to 5V DC	6
0 to 20mA DC	7
4 to 20mA DC	8
Triac output*	T
Open Collector output	D

*When a triac output is specified, CE marking and UL/CSA are not applied.

Input Range Code Table

Thermocouple

Input	Code	Range	Input	Code	Range	Input	Code	Range	Input	Code	Range	Input	Code	Range
K	K : 35	-200.0 to +400.0°C	J	J : 27	-200.0 to +400.0°C	T	T : 19	-200.0 to +400.0°C	B	B : 03	0 to 1800°C	Pt100	D : 35	-200.0 to +850.0°C
	K : 40	-200.0 to +800.0°C		J : 32	-200.0 to +800.0°C		T : C5	-328 to +752°F		B : B1	32 to 3272°F		D : 21	-200.0 to +200.0°C
	K : 09	0.0 to 400.0°C		J : 08	0.0 to 400.0°C		T : C6	0.0 to +752.0°F		N : 02	0 to +1200°C		D : C6	-328.0 to +752.0°F
	K : 10	0.0 to 800.0°C		J : 09	0.0 to 800.0°C		S : 06	-50 to +1768°F		N : A6	32 to +2372°F		D : D2	-328 to +1562°F
	K : 42	-200.0 to +1372.0°C		J : 29	-200.0 to +1200.0°C	S	S : A7	-58 to +3214°F	PLII (NBS)	A : 02	0 to 1390°C	JPt100	P : 30	-200.0 to +640.0°C
	K : 02	0 to 400°C		J : 02	0 to 400°C		R : 07	-50 to +1768°F		A : A2	0 to 2534°F		P : C6	-328.0 to +752.0°F
	K : 04	0 to 800°C		J : 04	0 to 800°C		R : A7	-58 to +3214°F		W : 03	0 to 2300°C		P : D2	-328 to +1184°F
	K : 41	-200 to +1372°C		J : 05	-200 to +1200°C		E : 20	-200.0 to +1000.0°C		W : B1	32 to 4208°F			
	K : C7	-328 to +2501°F		J : B6	0.0 to 800.0°F	E	E : B2	0.0 to +800.0°F	DC Current • Voltage					
	K : A4	0.0 to 800.0°F		J : B9	-328 to +2192°F		E : B1	-328 to +1832°F	Input	Code	Range	Input	Code	Range
	K : A1	0 to 800°F		J : A1	0 to 800°F		0 to 10mV	1 : 01		0 to 10V	5 : 01			
	K : A2	0 to 1600°F		J : A2	0 to 1600°F									

DC Current • Voltage

Input	Code	Range	Input	Code	Range
0 to 10mV	1 : 01	0.0 to 100.0%	0 to 10V	5 : 01	0.0 to 100.0%
0 to 100mV	2 : 01		1 to 5V	6 : 01	
0 to 1V	3 : 01		0 to 20mA	7 : 01	
0 to 5V	4 : 01		4 to 20mA	8 : 01	

- Quick start code 2 tells the factory to ship with each parameter preset to the values detailed as specified by the customer. Quick start code is not necessarily specified when ordering, unless the preset is requested. These parameters are software selectable items and can be re-programmed in the field via the manual.

Quick Start Code 2

Specifications	Quick Start Code 2	1	2	3	4	5	6
Event 1 type	① See Event Type Code Table						
Event 2 type	② See Event Type Code Table						
Event 3 type	③ See Event Type Code Table						
Event 4 type	④ See Event Type Code Table						
CT type	⑤ No CT input						
	CTL-6-P-N						
Communication Protocol	ANSI/RKC standard protocol						
	MODBUS protocol						
	PLC special protocol (MAPMAN) (Mitsubishi MELSEC A/Q series) • Only Z-TIO-C/D						
	PLC special protocol (MAPMAN) (Mitsubishi MELSEC FX series) • Only Z-TIO-C/D						

Event Type Code Table

Event Type	Code	Event Type	Code
No event	N	Deviation High with Alarm Re-Hold	Q
Deviation High	A	Deviation Low with Alarm Re-Hold	R
Deviation Low	B	Deviation High/Low with Alarm Re-Hold	T
Deviation High/Low	C	Set value High	V
Band	D	Set value Low	W
Deviation High with Alarm Hold	E	MV value High	1
Deviation Low with Alarm Hold	F	MV value Low	2
Deviation High/Low with Alarm Hold	G	Cool side MV value High	3
Process High	H	Cool side MV value Low	4
Process Low	J	LBA (Loop break alarm)	1 5
Process High with Alarm Hold	K	Temperature rise completion	2 6
Process Low with Alarm Hold	L		

1 LBA is available with event 4 only.
2 Temperature rise completion is available with event 3 only.

● Digital Input/Output Module (Z-DIO-A)

Specifications		Hardware coding				Quick start code			
		Z-DIO-A							
Wiring method	①	Terminal type	T						
		Connector type	C						
Number of digital input (DI)	②	Not supplied	N						
		DI 8 points	A						
Digital output (DO) signal	③	Not supplied	N						
		Relay contact output, 8 points	M						
		Open Collector output, 8 points	D						
Quick start code	④	No quick start code (Default setting)	N						
		Specify quick start code	1						
Quick start code	⑤	No quick start code	No symbol						
		No digital input	N						
	⑥	No quick start code	No symbol						
		No digital output	N						
Digital output (DO) allocation (DO1 to DO4)	⑦	No quick start code	No symbol						
		No digital output	N						
	⑧	No quick start code	No symbol						
		No digital output	N						
Communication protocol	⑨	No quick start code	No symbol						
		ANSI/RKC standard protocol	1						
		MODBUS protocol	2						

DO1 to 4 Allocation Table

Code	Digital output			
	DO 1	DO 2	DO 3	DO 4
00	No assignment			
01	DO1 manual output	DO manual output	DO manual output	DO4 manual output
02	Event 1 (All CH)	Event 2 (All CH)	Event 3 (All CH)	Event 4 (All CH)
03	Event 1 (CH1)	Event 2 (CH1)	Event 3 (CH1)	Event 4 (CH1)
04	Event 1 (CH2)	Event 2 (CH2)	Event 3 (CH2)	Event 4 (CH2)
05	Event 1 (CH3)	Event 2 (CH3)	Event 3 (CH3)	Event 4 (CH3)
06	Event 1 (CH4)	Event 2 (CH4)	Event 3 (CH4)	Event 4 (CH4)
07	Event 1 (CH1)	Event 1 (CH2)	Event 1 (CH3)	Event 1 (CH4)
08	Event 2 (CH1)	Event 2 (CH2)	Event 2 (CH3)	Event 2 (CH4)
09	Event 3 (CH1)	Event 3 (CH2)	Event 3 (CH3)	Event 3 (CH4)
10	Event 4 (CH1)	Event 4 (CH2)	Event 4 (CH3)	Event 4 (CH4)
11	TIO HBA (CH1)	TIO HBA (CH2)	TIO HBA (CH3)	TIO HBA (CH4)
12	Burnout (CH1)	Burnout (CH2)	Burnout (CH3)	Burnout (CH4)
13	Temperature rise	HBA (Comprehensive output)	Burnout (All CH)	DO4 manual output

DO5 to 8 Allocation Table

Code	Digital output			
	DO 5	DO 6	DO 7	DO 8
00	No assignment			
01	DO5 manual output	DO6 manual output	DO7 manual output	DO8 manual output
02	Event 1 (All CH)	Event 2 (All CH)	Event 3 (All CH)	Event 4 (All CH)
03	Event 1 (CH1)	Event 2 (CH1)	Event 3 (CH1)	Event 4 (CH1)
04	Event 1 (CH2)	Event 2 (CH2)	Event 3 (CH2)	Event 4 (CH2)
05	Event 1 (CH3)	Event 2 (CH3)	Event 3 (CH3)	Event 4 (CH3)
06	Event 1 (CH4)	Event 2 (CH4)	Event 3 (CH4)	Event 4 (CH4)
07	Event 1 (CH1)	Event 1 (CH2)	Event 1 (CH3)	Event 1 (CH4)
08	Event 2 (CH1)	Event 2 (CH2)	Event 2 (CH3)	Event 2 (CH4)
09	Event 3 (CH1)	Event 3 (CH2)	Event 3 (CH3)	Event 3 (CH4)
10	Event 4 (CH1)	Event 4 (CH2)	Event 4 (CH3)	Event 4 (CH4)
11	TIO HBA (CH1)	TIO HBA (CH2)	TIO HBA (CH3)	TIO HBA (CH4)
12	Burnout (CH1)	Burnout (CH2)	Burnout (CH3)	Burnout (CH4)
13	Temperature rise completion	HBA (Comprehensive output)	Burnout (All CH)	DO8 manual output

DI Allocation Table

	Digital input							
	DI 1	DI 2	DI 3	DI 4	DI 5	DI 6	DI 7	DI 8
00	No assignment							
01	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	Alarm interlock reset	AUTO/MANUAL
02	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	Alarm interlock reset	LOCAL/REMOTE
03	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	Alarm interlock reset	Feed-forward start
04	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	Alarm interlock reset	Soak stop
05	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	Alarm interlock reset	STOP/RUN
06	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	AUTO/MANUAL	LOCAL/REMOTE
07	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	AUTO/MANUAL	Feed-forward start
08	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	AUTO/MANUAL	Soak stop
09	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	AUTO/MANUAL	STOP/RUN
10	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	LOCAL/REMOTE	Feed-forward start
11	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	LOCAL/REMOTE	Soak stop
12	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	LOCAL/REMOTE	STOP/RUN
13	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	EDS start	Soak stop
14	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	EDS start	STOP/RUN
15	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	Soak stop	STOP/RUN
16	Memory area selection (1 to 8)			Area set	Alarm interlock reset	AUTO/MANUAL	LOCAL/REMOTE	Feed-forward start
17	Memory area selection (1 to 8)			Area set	Alarm interlock reset	AUTO/MANUAL	LOCAL/REMOTE	Soak stop
18	Memory area selection (1 to 8)			Area set	Alarm interlock reset	AUTO/MANUAL	LOCAL/REMOTE	STOP/RUN
19	Memory area selection (1 to 8)			Area set	Alarm interlock reset	AUTO/MANUAL	EDS start	Soak stop
20	Memory area selection (1 to 8)			Area set	Alarm interlock reset	AUTO/MANUAL	EDS start	STOP/RUN
21	Memory area selection (1 to 8)			Area set	Alarm interlock reset	AUTO/MANUAL	Soak stop	STOP/RUN
22	Memory area selection (1 to 8)			Area set	AUTO/MANUAL	LOCAL/REMOTE	EDS start	Soak stop
23	Memory area selection (1 to 8)			Area set	AUTO/MANUAL	LOCAL/REMOTE	EDS start	STOP/RUN
24	Memory area selection (1 to 8)			Area set	AUTO/MANUAL	LOCAL/REMOTE	Soak stop	STOP/RUN
25	Memory area selection (1 to 8)			Area set	LOCAL/REMOTE	Feed-forward start	Soak stop	STOP/RUN
26	Memory area selection (2 points)	Area set	Alarm interlock reset	STOP/RUN	AUTO/MANUAL	LOCAL/REMOTE	Operation mode 1	Operation mode 2
27	Memory area selection (1 to 8)			Area set	Operation mode 1	Operation mode 2	EDS start 1	EDS start 2
28	Memory area selection (2 points)	Area set	Alarm interlock reset	Area set	AUTO/MANUAL	LOCAL/REMOTE	EDS start 1	EDS start 2
29	EDS start 1	EDS start 2	Alarm interlock reset	Area set	AUTO/MANUAL	LOCAL/REMOTE	Operation mode 1	Operation mode 2

- Area setting is set to disabled at the factory.
- EDS function : External disturbance suppression function

Operation mode 1 : Only monitoring. (Control stop, Event function OFF)
Operation mode 2 : Monitoring and Event function (Control stop)

● CT (Current transformer) Input Module (Z-CT)

Specifications			Z-CT-A	Hardware coding				Quick start code			
				①	②	③	④				
Wiring method	①	Terminal type	T								
		Connector type	C								
Quick start code	②	No quick start code (Default setting)	N								
		Specify quick start code	1								
Quick start code	③	No quick start code	No symbol								
		CTL-6-P-N (0 to 30A)	P								
		CTL-12-S56-10L-N (0 to 100A)	S								
		CTL-6-P-Z (0 to 10A)	Z								
	④	No quick start code					No symbol				
		ANSI/RKC standard protocol					1				
		MODBUS protocol					2				

● Communication Module (Z-COM-A)

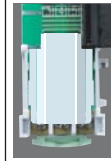
Specifications		Hardware coding						Quick start code			
		Z-COM-A									
COM PORT 1,2 communication	①	RS-422A	4								
		RS-485	5								
COM PORT 3,4 communication	②	RS-422A	4								
		RS-485	5								
Quick start code	③	No quick start code (Default setting)	N								
		Specify quick start code	1								
Quick start code	④	No quick start code	No symbol								
		ANSI/RKC standard protocol	1								
	⑤	MODBUS protocol	2								
		No quick start code	No symbol								
COM PORT 3,4 communication protocol	⑥	ANSI/RKC standard protocol	1								
		MODBUS protocol	2								
		PLC special protocol (MAPMAN) (Mitsubishi MELSEC A/Q series)	3								
		PLC special protocol (MAPMAN) (OMRON SYSMAC series)	4								
		PLC special protocol (MAPMAN) (Mitsubishi MELSEC FX series)	5								
Maximum channel data (For PLC special communication)	⑦	No quick start code	No symbol								
		16-channels specification	A								
		32-channels specification	B								
		48-channels specification	C								
		64-channels specification	D								

Standard accessory

Connector cover
Model : KSRZ-517A



Power supply terminal cover
Model : KSRZ-518A



Model Code

Accessories

Operation Panel (OPC-TS2060)

Compact setting display unit (OP10)

Accessories

Plug-in connector

(For connector type module)



Model : SRZP-03
(2 piece)
(Spring connection type)
Equivalent part :
FKC 2.5/5-STF-5.08 AU
PHOENIX CONTACT

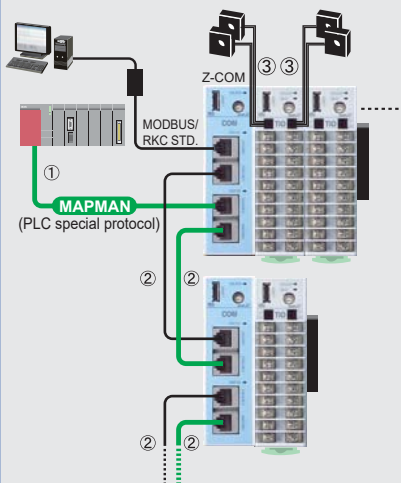


Model : SRZP-02
(2 piece)
(Side screw type)
Equivalent part :
MSTB 2.5/5-STF-5.08AU
PHOENIX CONTACT



Model : SRZP-01
(2 piece)
(Front screw type)
Equivalent part :
FRONT-MSTB 2.5/5-STF-5.08AU
PHOENIX CONTACT

Communication cables



① Model :
W-BF-01-3000 (3m)
6 pins
Spade lug terminal *

* Other types of cables such as cable with 9-pin D-SUB connector are also available. Please contact RKC.

② Model :
W-BF-02-500 (0.5m)
W-BF-02-1000 (1m)
W-BF-02-3000 (3m)
6 pins

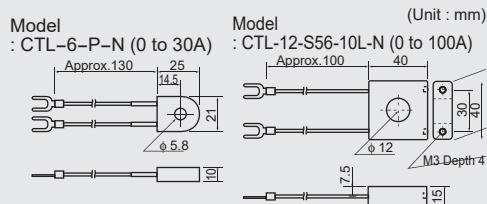
③ Model :
W-BW-03-1000 (1m)
W-BW-03-2000 (2m)
W-BW-03-3000 (3m)
4 pins

Spade lug terminal

Termination resistor connector

Model : W-BW-01
(For RS-485)
Model : W-BW-02
(For RS-422A)

Current transformer for heater break alarm (HBA)



Model : CTL-6-P-N (0 to 30A)
Model : CTL-12-S56-10L-N (0 to 100A)
(Unit : mm)

Model : CTL-6-P-Z (0 to 10A) 1
[Available for Z-CT module only]
1 (U.R.D.Co., LTD product)

End plates

Model : DEP-01

To firmly fix the modules, use end plates on both sides of the mounted modules on the DIN rail.



Front terminal cover

Model : KSRZ-510A



Terminal Cover (For power supply) Joint connector cover

Model : KSRZ-518A Model : KSRZ-517A



Operation Panel (OPC-TS2060)

Specifications	No	Model Code	①	②	③
		OPC-TS2060-			
Display method	①	TFT Color LCD	1		
Available controller	②	SRZ (MODBUS protocol)		5	
Language	③	Japanese			J
		English			E

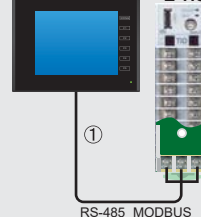


Cable

OPC-TS2060

Z-TIO

① V6-MLT (3m)



8 pins
Spade lug terminal

Terminal/ Connector Configuration

Temperature Control Module (Z-TIO) Terminal type

No.	Description	No.	Description
21	Measured Input 3 (CH3) (1) Thermocouple (2) RTD (3) Voltage/Current	11	Control Output 1 (CH1) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac
22		12	
23	Control Output 3 (CH3) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac	13	Measured Input 1 (CH1) (1) Thermocouple (2) RTD (3) Voltage/Current
24		14	
25	Measured Input 4 (CH4) (1) Thermocouple (2) RTD (3) Voltage/Current (4) Feedback resistance	15	
26		16	Control Output 2 (CH2) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac
27		17	
28	Control Output 4 (CH4) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac	18	Measured Input 2 (CH2) (1) Thermocouple (2) RTD (3) Voltage/Current (4) Feedback resistance
29		19	
30		20	

CT : Current transformer for heater break alarm
Feedback resistance input is used only for monitoring.
<Caution> Voltage / current outputs are not isolated from the power supply voltage.

Screw Size : M3 X 7
Solderless terminal is recommended

Temperature Control Module (Z-TIO) Connector type

CN (Connector) 3

No.	Description
1	Measured Input 3 (CH3) (1) Thermocouple (2) RTD (3) Voltage/Current
2	
3	Control Output 3 (CH3) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac
4	
5	

CN (Connector) 1

No.	Description
5	Control Output 1 (CH1) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac
4	
3	Measured Input 1 (CH1) (1) Thermocouple (2) RTD (3) Voltage/Current
2	
1	

CN (Connector) 4

No.	Description
1	Measured Input 4 (CH4) (1) Thermocouple (2) RTD (3) Voltage/Current (4) Feedback resistance
2	
3	Control Output 4 (CH4) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac
4	
5	

CN (Connector) 2

No.	Description
5	Control Output 2 (CH2) (1) Relay contact (2) Voltage pulse/Voltage/Current/Open collector (3) Triac
4	
3	Measured Input 2 (CH2) (1) Thermocouple (2) RTD (3) Voltage/Current (4) Feedback resistance
2	
1	

* For 2CH specifications, connectors CN3 and CN4 are not mounted. *1 : Optional
CT : Current transformer for heater break alarm
Feedback resistance input is used only for monitoring.
<Caution> Voltage / current outputs are not isolated from the power supply voltage.

Digital Input/Output Module (Z-DIO) Terminal type

No.	Description	No.	Description
21	DI4	11	COM
22	DI3	12	DO1
23	DI2	13	DO2
24	DI1	14	DO3
25	COM	15	DO4
26	DI8	16	COM
27	DI7	17	DO5
28	DI6	18	DO6
29	DI5	19	DO7
30	COM	20	DO8

Screw Size : M3 X 7
Solderless terminal is recommended

Digital Input/Output Module (Z-DIO) Connector type

CN3

No.	Description
1	DI4
2	DI3
3	DI2
4	DI1
5	COM

CN1

No.	Description
5	COM
4	DO1
3	DO2
2	DO3
1	DO4

CN4

No.	Description
1	DI8
2	DI7
3	DI6
4	DI5
5	COM

CN2

No.	Description
5	COM
4	DO5
3	DO6
2	DO7
1	DO8

CT (Current transformer) Input Module (Z-CT) Terminal type

No.	Description	No.	Description
21	CT9	11	CT1
22	COM	12	COM
23	CT8	13	CT2
24	COM	14	COM
25	CT7	15	CT3
26	CT12	16	CT4
27	COM	17	COM
28	CT11	18	CT5
29	COM	19	COM
30	CT10	20	CT6

Screw Size : M3 X 7
Solderless terminal is recommended

CT (Current transformer) Input Module (Z-CT) Connector type

CN3

No.	Description
1	CT9
2	COM
3	CT8
4	COM
5	CT7

CN1

No.	Description
5	CT1
4	COM
3	CT2
2	COM
1	CT3

CN4

No.	Description
1	CT12
2	COM
3	CT11
4	COM
5	CT10

CN2

No.	Description
5	CT14
4	COM
3	CT5
2	COM
1	CT6

Communication Extension Module (Z-COM)

COM PORT 1
COM PORT 2
COM PORT 3
COM PORT 4

Communication 1
RKC standard/MODBUS
RS-485,422A

Communication 2
RKC standard/MODBUS
PLC special protocol (Mapman)
RS-485,422A

Loader Port

Z-TIO

Z-DIO

Z-COM

Base

1 2
+24VDC
Power Supply

3 4 5
T/R (A) (B) SG
RS-485
Communication

Communication
Power Supply

Supply the power to only one of the joined modules. When power is supplied to any one of the joined modules, all of the joined modules will receive power.

* Z-COM: No.3,4,5 terminals are not mounted.



Communication Converter Model Code

● MODBUS/TCP Communication Converter : COM-ME-1

Specifications		Model and Suffix Code			
		COM-ME	Mandatory	Option	
Mandatory	Network	Ethernet [MODBUS/TCP]	1		
	Host communication	RS-485	5		
	Supported Controller	SRZ(Z-TIO /Z-DIO /Z-CT)		02	
Option	Factory Setting (Communication protocol)	None (Communication protocol is not specified.)		No code	
		Specified (Specify communication protocol)		1	
	Host Communication Protocol	None (Communication protocol is not specified.)		No code	
		RKC Communication		1	
*1		MODBUS Communication		2	

*1 : If factory setting is not specified, the followings are set as default.
- Host communication protocol : RKC Communication.

● EtherNet/IP Communication Converter : COM-ME-2

Specifications		Model and Suffix Code			
		COM-ME	Mandatory	Option	
Mandatory	Network	EtherNet/IP	1		
	Host communication	RS-485	5		
	Supported Controller	SRZ(Z-TIO /Z-DIO /Z-CT)		02	
Option	Factory Setting (Communication protocol)	None (Communication protocol is not specified.)		No code	
		Specified (Specify communication protocol)		1	
	Host Communication Protocol	None (Communication protocol is not specified.)		No code	
		RKC Communication		1	
*1		MODBUS Communication		2	

*1 : If factory setting is not specified, the followings are set as default.
- Host communication protocol : RKC Communication.

● EtherCAT Communication Converter : COM-ME-3

Specifications		Model and Suffix Code		
		COM-ME	-3	5*02
Network	EtherCAT		3	
Host communication	RS-485		5	
Supported Controller	SRZ(Z-TO-A/Z-TIO-B, Z-DIO, Z-CT)			02

● Ethernet MAPMAN Communication Converter : COM-ME-6

Specifications		Model and Suffix Code			
		COM-ME	Mandatory	Option	
Mandatory	Network	Ethernet[Ethernet MAPMAN]	6		
	Host communication	RS-485	5		
	Supported Controller	SRZ		02	
Option	Factory Setting (Communication protocol)	None (Communication protocol is not specified.)		No code	
		Specified (Specify communication protocol)		1	
	Host communication protocol	None (Communication protocol is not specified.)		No code	
		RKC Communication		1	
*1	Network communication protocol	MODBUS Communication		2	
		None (Communication protocol is not specified.)		No code	
	The number of the correspondence channels	MAPMAN (MITSUBISHI PLC: QnA-compatible 3E fame/SLMP ASCII)		5	
		MAPMAN (MITSUBISHI PLC: QnA-compatible 3E fame /SLMP binary)		6	
		None (Number of channels is not specified.)		No code	
		16 channels		A	
		32 channels		B	
		48 channels		C	
		64 channels		D	

*1 : If factory setting is not specified, the followings are set as default.
- Host communication protocol : RKC Communication.
- Network communication protocol : MAPMAN (MITSUBISHI PLC: QnA-compatible 3E fame /SLMP binary).
- Supported number of channels : 64 channels.
(equivalent to code " /116D")

● CC-Link communication converter (COM-MC)

Specifications		Model Code		
		COM - MC *	02	- □
Available controller	SRZ (Z-TIO-A/B, Z-DIO)		02	
RUN/STOP logic selection	0 : RUN, 1 : STOP			1
	0 : STOP, 1 : RUN			2

● USB communication converter (COM-KG)

Specifications		Model Code		
		COM - KG -	□	N
Loader communication cable	None		1	
	With loader communication cable		N	



Before operating this product, read the instruction manual carefully to avoid incorrect operation.
This product is intended for use with industrial machines, test and measuring equipment. It is not designed for use with medical equipment.
If it is possible that an accident may occur as a result of the failure of the product or some other abnormality, an appropriate independent protection device must be installed.

Caution for the export trade

All transactions must comply with laws, regulations, and treaties.

Caution for imitated products

As products imitating our product now appear on the market, be careful that you don't purchase these imitated products. We will not warrant such products nor bear the responsibility for any damage and/or accident caused by their use.



RKC INSTRUMENT INC.
(RIKA KOGYO CO.,LTD)

HEAD OFFICE : 16-6, KUGAHARA 5 CHOME OHTA-KU TOKYO 146-8515 JAPAN
PHONE : 03-3751-9799 (+81 3 3751 9799)
Email : info@rkcinst.co.jp
https://www.rkcinst.com/