

Quick Reference Guide

Type	Process/Temperature Controller	Temperature Controller	Process/Temperature Controller
Model	FZ900/400/110	RZ400/100	RB900/700/500/400/100
Appearance			
Features	- Wide range display (5 digits) - Three indicators - Two input control (FZ400/900) - Easy-to-read with large 11-segment LCD display - Level PID function - Suppressing overshoot (Proactive function) - USB communication (Front loader communication) - Close horizontal mounting	- Large high intensity LED - Flexible Output Configuration - USB communication (Loader communication) - Close horizontal mounting	- Easy-to-read with large 11-segment LCD display - The depth of 60mm (RB100 : 63mm) 4 digital outputs (RB100 : 3 outputs) 2 digital inputs - Easy fine tuning - RUN/STOP key function - USB communication (Loader communication) - Close horizontal mounting
Input	TC, RTD, V DC, mV DC •Universal input	TC, RTD •Universal input	TC, RTD, V DC, mV DC •For DC current input, connect a 250 Ω resistor
Sampling time	50msec	250msec	250msec
Measuring accuracy	TC, RTD ±(0.1% of reading + 1 digit) V DC, mA DC ±(0.1% of span + 1 digit)	±(0.2% of reading + 1 digit)	TC, RTD ±(0.2% of reading + 1 digit) V DC, mA DC ±(0.2% of span + 1 digit)
Control method	Start-up/Autotuning brilliant II PID, PI, PD, On/Off Start-up/Autotuning brilliant II Heat/Cool PID Position proportional PID	Start-up/Autotuning PID, PI, PD, On/Off Start-up/Autotuning Heat/Cool	Start-up/Autotuning PID, PI, PD, On/Off Start-up/Autotuning Heat/Cool
Control output type	Relay, Voltage pulse for SSR, Current, Voltage, Transistor	Relay, Voltage pulse for SSR, Current, Voltage, Triac, Open collector	Relay, Voltage pulse for SSR, Current, Voltage, Triac, Open collector
Communications	RS-422A, RS-485 ANSI or Modbus protocol • FZ110 : RS-485 only	RS-485 ANSI or Modbus protocol	RS-485 ANSI or Modbus protocol
Open Network	N/A	N/A	N/A
PLC direct communication	Mapman function (MITSUBISHI PLC Protocol)	N/A	Mapman function via COM-JE
Size	FZ110 : 1/16 DIN (48x48x81mm) FZ400 : 1/8 vertical DIN (48x96x65mm) FZ900 : 1/4 DIN (96x96x65mm)	RZ100 : 1/16 DIN (48x48x63mm) RZ400 : 1/8 vertical DIN (48x96x60mm)	RB100 : 1/16 DIN (48x48x63mm) RB400 : 1/8 vertical DIN (48x96x60mm) RB500 : 1/8 horizontal DIN (96x48x60mm) RB700 : 3/16 DIN (72x72x60mm) RB900 : 1/4 DIN (96x96x60mm)
Event (Alarms) *1	4 (Temperature, Heater break, Loop break)	2 (Temperature, Heater break, Loop break)	4 (Temperature, Heater break, Loop break) • RB100 : 3
Analog retransmission outputs *1	1	N/A	1
Digital inputs *1	FZ110 : 2, FZ400/900 : 6	N/A	2
Waterproof	IP65	IP66/NEMA4X	IP66/NEMA4X
Additional optional functions	Remote setpoint setting Multi-Memory Area : 16 areas, Level PID 2-loop control, Cascade control		Timer function (Simple Program control function) 4 set values

Type	Temperature Controller	Temperature Controller	Temperature Controller
Model	CB900/700/500/400/100	CB903/403/103	SA200
Appearance			
Features	- Bright, easy-to-read LED Display - Autotuning or self-tuning PID control - Autotuning Heat/Cool PID control - RUN/STOP key function - Field programmable Reverse/Direct action - Close horizontal mounting	- Bright, easy-to-read LED Display - Autotuning or self-tuning PID control - Analog retransmission output 3 alarm digital outputs - Digital input/output - Control Run/Stop key - Field programmable Reverse/Direct action - SV1/SV2 transfer	1/32 DIN with dual display - Autotuning or self-tuning PID control - Autotuning Heat/Cool PID control - Analog retransmission output - All red display (SA201) - RUN/STOP function (key and/or DI) - Ramp-to-setpoint - Close vertical or horizontal mounting
Input	TC, RTD, V DC, mV DC •For DC current input, connect a 250 Ω resistor	TC, RTD, V DC, mV DC •For DC current input, connect a 250 Ω resistor	TC, RTD, V DC, mV DC •For DC current input, connect a 250 Ω resistor
Sampling time	500msec	500msec	500msec, 250msec (Selectable)
Measuring accuracy	TC ±(0.3% of reading + 1 digit) or ±2°C (4°F) RTD ±(0.3% of reading + 1 digit) or ±0.8°C (1.6°F) V DC, mA DC ±(0.3% of span + 1 digit)	TC ±(0.3% of reading + 1 digit) or ±2°C (4°F) RTD ±(0.3% of reading + 1 digit) or ±0.8°C (1.6°F) V DC, mA DC ±(0.3% of span + 1 digit)	TC ±(0.3% of reading + 1 digit) or ±2°C (4°F) RTD ±(0.3% of reading + 1 digit) or ±0.8°C (1.6°F) V DC, mA DC ±(0.3% of span + 1 digit)
Control method	Autotuning PID, Self-tuning PID, Autotuning Heat/Cool PID, PI, PD, On/Off	Autotuning PID, Self-tuning PID, PI, PD, On/Off	Autotuning PID, Self-tuning PID, Autotuning Heat/Cool PID, PI, PD, On/Off
Control output type	Relay, Voltage pulse for SSR, Current, Triac trigger	Relay, Voltage pulse for SSR, Current, Triac trigger	Relay, Voltage pulse for SSR, Current,
Communications	RS-485 ANSI or Modbus protocol	N/A	RS-485 ANSI or Modbus protocol
Open Network	N/A	N/A	N/A
PLC direct communication	N/A	N/A	N/A
Size	CB100 : 1/16 DIN (48x48x100mm) CB400 : 1/8 vertical DIN (48x96x100mm) CB500 : 1/8 horizontal DIN (96x48x100mm) CB700 : 3/16 DIN (72x72x100mm) CB900 : 1/4 DIN (96x96x100mm)	CB103 : 1/16 DIN (48x48x100mm) CB403 : 1/8 vertical DIN (48x96x100mm) CB903 : 1/4 DIN (96x96x100mm)	1/32 DIN (48 x 24x 100mm)
Alarms *1	2 (Temperature, Heater break, Loop break)	3 (Temperature, Heater break, Loop break)	2 (Temperature, Loop break)
Analog retransmission outputs *1	N/A	1	1
Digital inputs *1	N/A	1	1
Waterproof	IP66(CB100), IP65(CB400/500/700/900)	IP66(CB103), IP65(CB403/903)	IP66
Additional optional functions			Peak-hold/bottom-hold, Dual setpoint, PV ratio

*1 Maximum numbers of inputs/outputs vary depending on usage of other functions.

Quick Reference Guide

Type	Temperature Controller	Process/Temperature Controller	High Accuracy Temperature Controller
Model	SA100	FB100/400/900	REX-F9000
Appearance			
Features	- DIN rail mounted 1/16 DIN with dual display - Autotuning or self-tuning PID control - Autotuning Heat/Cool PID control - Digital input/output - Analog retransmission output - Digital communications - RUN/STOP function (key and/or DI) - Ramp-to-setpoint	- High Accuracy with selectable sampling cycle time - The depth of 60mm (FB100 : 74mm) 4 configurable digital outputs (FB100 : 3 outputs) 7 configurable digital inputs (FB100 : 5 inputs) - Multi-memory areas (8 sets of control parameters) - Ramp/soak control - Inter-controller Communication - Universal Input - USB communication (Loader communication) - Close horizontal mounting	- Brilliant PID control with enhanced autotuning - High resolution (0.001°C) and high accuracy $\pm 0.05^{\circ}\text{C}$ 1-loop or 2-loop control - Analog retransmission output - Digital input - Auto/Manual (front panel and/or DI) - Power feed forward 3 Decimal place display - Digital communications
Input	TC, RTD, V DC, mV DC • For DC current input, connect a 250 Ω resistor	TC, RTD, V DC, mV DC	RTD (0.000 to 50.000°C)
Sampling time	500msec, 250msec (Selectable)	100msec (50msec/250msec is selectable)	100msec
Measuring accuracy	TC : $\pm(1\%$ of reading + 1 digit) or $\pm 2^{\circ}\text{C}$ (4°F) RTD : $\pm(0.3\%$ of reading + 1 digit) or $\pm 0.8^{\circ}\text{C}$ (1.6°F) V DC, mA DC : $\pm(0.3\%$ of span + 1 digit)	TC, RTD : $\pm(0.1\%$ of reading + 1 digit) V DC, mA DC : $\pm(0.1\%$ of span + 1 digit)	$\pm 0.05^{\circ}\text{C}$
Control method	Autotuning PID, Self-tuning PID, Autotuning Heat/Cool PID, PI, PD, On/Off	Start-up/Autotuning brilliant II PID, PI, PD, On/Off Start-up/Autotuning brilliant II Heat/Cool PID Position proportional PID	Autotuning brilliant PID
Control output type	Relay, Voltage pulse for SSR, Current,	Relay, Voltage pulse for SSR, Current, Voltage, Open collector	Voltage pulse for SSR, Current
Communications	RS-485 ANSI or Modbus protocol	RS-232C, RS-422A, RS-485 ANSI or Modbus protocol • FB100: RS-485 only	RS-485 ANSI protocol
Open Network	N/A	DeviceNet via COM-JH, Profibus via COM-JG, CC-Link via COM-JC, Ethernet (Modbus/TCP) via COM-JL	N/A
PLC direct communication	N/A	Mapman function via COM-JE	N/A
Size	1/16 DIN (48 x 48 x 70mm)	FB100 : 1/16 DIN (48x48x74mm) FB400 : 1/8 vertical DIN (48x96x60mm) FB900 : 1/4 DIN (96x96x60mm)	1/4 DIN (96x96x100mm)
Alarms	*1 2 (Temperature, Loop break)	4 (Temperature, Heater break, Loop break) • FB100 : 3	2 (Temperature)
Analog retransmission outputs	*1 1	1	1
Digital inputs	*1 1	7 • FB100 : 5	1
Waterproof	IP66	IP66/NEMA4X	N/A
Additional optional functions	Rear terminal socket for panel mounting Digital contact input for external switching	Remote setpoint setting (FB400/900 : Standards) Power feed forward (FB400/900 only) Inter-controller Communication (Automatic temperature rise Cascade control, Temperature ratio setting, Group STOP/RUN)	Power feed forward function

Type	Process/Temperature Controller	Temperature Controller	Temperature Controller with Built-in SSR
Model	GZ900/400	REX-C900/700/400/410/100	SB1
Appearance			
Features	- Wide range display (5 digits) - Three indicators - Two input control - Easy-to-read with large 11-segment LCD display - Suppressing overshoot (Proactive function) - USB communication (Front loader communication) - Close horizontal mounting	- Autotuning Heat/Cool PID control - Field programmable Reverse/Direct action - Numerous control outputs	- Direct Connection to Load (with Built-in SSR) (Max. 7A) - Can be supplied with pipe wrapping type, pipe hanging type, DIN-rail mounting type, or panel mounting type.
Input	TC, RTD, V DC, mV DC • Universal input	TC, RTD, V DC, mV DC	TC (K, J 0 to 800°C), RTD (Pt100 0 to 400°C)
Sampling time	10msec	500msec	250msec
Measuring accuracy	TC, RTD : $\pm(0.1\%$ of reading + 1 digit) V DC, mA DC : $\pm(0.1\%$ of span + 1 digit)	TC : $\pm(0.5\%$ of reading + 1 digit) or $\pm 3^{\circ}\text{C}$ (6°F) RTD : $\pm(0.5\%$ of reading + 1 digit) or $\pm 0.8^{\circ}\text{C}$ (1.6°F) V DC, mA DC : $\pm(0.5\%$ of span + 1 digit)	$\pm(0.3\%$ of reading + 1 digit)
Control method	Start-up/Autotuning brilliant II PID, PI, PD, On/Off Start-up/Autotuning brilliant II Heat/Cool PID	Autotuning PID Autotuning Heat/Cool PID, PI, PD, On/Off	Autotuning PID
Control output type	Relay, Voltage pulse for SSR, Current, Voltage, Transistor	Relay, Voltage pulse for SSR, Current	Triac (SSR), Max 7A
Communications	RS-422A, RS-485 ANSI or Modbus protocol	N/A	RS-485 ANSI or Modbus protocol
Open Network	N/A	N/A	N/A
PLC direct communication	Mapman function (MITSUBISHI PLC Protocol)	N/A	N/A
Size	GZ400 : 1/8 vertical DIN (48x96x65mm) GZ900 : 1/4 DIN (96x96x65mm)	REX-C100 : 1/16 DIN (48x48x100mm) REX-C400 : 1/8 vertical DIN (48x96x100mm) REX-C410 : 1/8 horizontal DIN (96x48x100mm) REX-C700 : 3/16 DIN (72x72x100mm) REX-C900 : 1/4 DIN (96x96x100mm)	57x103x44mm
Alarms	*1 4 (Temperature, Heater break, Loop break)	2 (Temperature, Heater break, Loop break)	2 (Temperature, Loop break)
Analog retransmission outputs	*1 1	N/A	N/A
Digital inputs	*1 6	N/A	1
Waterproof	IP65	N/A	N/A
Additional optional functions	Remote setpoint setting Multi-Memory Area : 16 areas 2-loop control, Cascade control		Inter-controller Function (SB Link)