JCx-33A → BCx2 Replacement Oct.18, 2019

Shinko

This data describes the difference between the discontinued products (JCx-33A series) and the replacement models (BCx2 series). To ensure safe and correct use, thoroughly read and understand all the safety precautions in each Instruction Manual.

● JCx-33A series and its Replacement Model

Discontinued Product Digital Indicating Controller JCx-33A Series	→	Replacement Model Digital Indicating Controller BCx2 Series

● Notes when Using the BCx2 Series

- Mounting method is different.
  BCR2, BCD2: Screw type mounting brackets
  BCS2: Mounting frame
- Depth of control panel interior is very short.
  Depth of control panel interior of BCx2 series: 60.0 mm
- Terminal arrangement: 6 terminals aligned (for BCS2), 12 terminals aligned (for BCR2/BCD2), so terminal wiring section for the BCx2 is narrower than that of JCx-33A series.
  Use an M3 screw and a lead wire solderless terminal (5.8 mm max. of width).
- Case: Black color only
- Communication commands are different. However, by selecting 'JC command allocated' in [Communication protocol], JCx-33A series communication commands can be used.
- Setting items in each setting mode are different.
- Different PID parameter ranges
- Heater burnout alarm: Rated current 20 A, 100 A
- If Heater burnout alarm option is ordered, CT will be sold separately.
- Different input rating ranges
- Contents of Heating/Cooling control proportional band setting are different.
- For Heating/Cooling control output, Relay contact output, Non-contact voltage output or Direct current output is available.
  Non-contact relay output is not available. (Available for JCS-33A.)
- SV high limit, SV low limit settings are not available.
- Communication speed 2400 bps, 4800 bps are not available.
- Different input sampling period
- BCR2, BCD2 control output (OUT1) relay contact: 1a (JCR-33A, JCD-33A: 1a1b)
- If only Heater burnout alarm is ordered, Event output EV2 or Heating/Cooling control will not be automatically included.
- Different option combinations
- SV1, SV2 external selections are optional. (Standard feature for the JCR-33A and JCD-33A.).

● Differences between JCx-33A series and BCx2 series

Case Color	External Dimensions	Mounting Size	Wiring Connection	Rating Performance	Action Characteristics	Operation Method
O	O	◎	x	O	O	x

(◎: Compatible (no change) O: Slight change x: Large change)

● JCS-33A and Corresponding Model BCS2

Case color of JCS-33A: Light gray

JCS-33A	BCS2
JCS-33A-R/M	BCS2R00-00
JCS-33A-S/M	BCS2S00-00
JCS-33A-A/M	BCS2A00-00
JCS-33A-x/M 1	BCS2x10-00
JCS-33A-x/M A2	BCS2x00-10 [Op. EV2]
JCS-33A-x/M C5(9600)	BCS2x00-06 [Op. C5]
JCS-33A-x/M DT	BCS2x00-10 [Op. EV2] (*1)
JCS-33A-x/M LA	BCS2x00-10 [Op. EV2] (*2)
JCS-33A-x/M SM	BCS2x00-09 [Op. EI] (*3)
JCS-33A-x/M W(5A)	BCS2x00-17 [Op. EV2, W(20A)]
JCS-33A-x/M W(10A)	BCS2x00-17 [Op. EV2, W(20A)]
JCS-33A-x/M W(20A)	BCS2x00-17 [Op. EV2, W(20A)]
JCS-33A-x/M W(50A)	BCS2x00-18 [Op. EV2, W(100A)]
JCS-33A-x/M A2, C5(9600)	BCS2x00-16 [Op. EV2, C5]
JCS-33A-x/M A2, SM	BCS2x00-19 [Op. EV2, EI] (*3)
JCS-33A-x/M C5(9600), DT	BCS2x00-16 [Op. EV2, C5] (*1)
JCS-33A-x/M C5(9600), LA	BCS2x00-16 [Op. EV2, C5] (*2)
JCS-33A-x/M C5(9600), W(5A)	BCS2x00-11 [Op. EV2, C5W(20A)]
JCS-33A-x/M C5(9600), W(10A)	BCS2x00-11 [Op. EV2, C5W(20A)]
JCS-33A-x/M C5(9600), W(20A)	BCS2x00-11 [Op. EV2, C5W(20A)]
JCS-33A-x/M C5(9600), W(50A)	BCS2x00-12 [Op. EV2, C5W(100A)]
JCS-33A-x/M DT, SM	BCS2x00-19 [Op. EV2, EI] (*1) (*3)
JCS-33A-x/M LA, SM	BCS2x00-19 [Op. EV2, EI] (*2) (*3)
JCS-33A-x/M SM, W(5A)	BCS2x00-13 [Op. EV2, EIW(20A)] (*3)
JCS-33A-x/M SM, W(10A)	BCS2x00-13 [Op. EV2, EIW(20A)] (*3)
JCS-33A-x/M SM, W(20A)	BCS2x00-13 [Op. EV2, EIW(20A)] (*3)
JCS-33A-x/M SM, W(50A)	BCS2x00-14 [Op. EV2, EIW(100A)] (*3)
JCS-33A-x/M TC	Terminal cover sold separately (TC-ACS)

(*1) Select ‘Heating/Cooling control relay contact output’ in [Event output EV2 allocation], and install SSR externally.

(*2) Select ‘Loop break alarm output’ in [Event output EV2 allocation].

(*3) Select ‘Set value memory’ in [Event input DI1 (DI2) allocation].

BCS2 Models only

JCS-33A	BCS2
	BCS2x00-2x [Op. DS]
	BCS2x00-3x [Op. DA]
	BCS2x00-4x [Op. P24]
	BCS2x00-x5 [Op. EIT]

● JCR-33A and Corresponding Model BCR2

Case color of JCR-33A: Light gray

JCR-33A	BCR2
JCR-33A-R/M	BCR2R00-00(*1)
JCR-33A-S/M	BCR2S00-00(*1)
JCR-33A-A/M	BCR2A00-00(*1)
JCR-33A-x/M 1	BCR2x10-00(*1)
JCR-33A-x/M A2	BCR2x00-10 [Op. EV2] (*1)
JCR-33A-x/M C5(9600)	BCR2x00-06 [Op. C5]
JCR-33A-x/M DR	BCR2x00-10 [Op. EV2] (*1)(*4)
JCR-33A-x/M DS	BCR2x00-20 [Op. DS] (*1)
JCR-33A-x/M DA	BCR2x00-30 [Op. DA] (*1)
JCR-33A-x/M LA	BCR2x00-10 [Op. EV2] (*1)(*5)
JCR-33A-x/M P24	BCR2x00-40 [Op. P24] (*1)
JCR-33A-x/M W(5A)	BCR2x00-17 [Op. EV2, W(20A)] (*2)
JCR-33A-x/M W(10A)	BCR2x00-17 [Op. EV2, W(20A)] (*2)
JCR-33A-x/M W(20A)	BCR2x00-17 [Op. EV2, W(20A)] (*2)
JCR-33A-x/M W(50A)	BCR2x00-18 [Op. EV2, W(100A)] (*3)
JCR-33A-x/M A2, C5(9600)	BCR2x00-16 [Op. EV2, C5]
JCR-33A-x/M A2, DR	BCR2x00-50 [Op. EV2+DR] (*4)
JCR-33A-x/M A2, DS	BCR2x00-60 [Op. EV2+DS]
JCR-33A-x/M A2, DA	BCR2x00-70 [Op. EV2+DA]
JCR-33A-x/M C5(9600), DR	BCR2x00-16 [Op. DR, C5] (*4)
JCR-33A-x/M C5(9600), DS	BCR2x00-26 [Op. DS, C5]
JCR-33A-x/M C5(9600), DA	BCR2x00-36 [Op. DA, C5]
JCR-33A-x/M C5(9600), LA	BCR2x00-16 [Op. EV2, C5] (*5)
JCR-33A-x/M C5(9600), P24	BCR2x00-46 [Op. P24, C5]
JCR-33A-x/M C5(9600), W(5A)	BCR2x00-11 [Op. EV2, C5W(20A)]
JCR-33A-x/M C5(9600), W(10A)	BCR2x00-11 [Op. EV2, C5W(20A)]
JCR-33A-x/M C5(9600), W(20A)	BCR2x00-11 [Op. EV2, C5W(20A)]
JCR-33A-x/M C5(9600), W(50A)	BCR2x00-12 [Op. EV2, C5W(100A)]
JCR-33A-x/M DR, LA	BCR2x00-50 [Op. EV2+DR] (*4)(*5)
JCR-33A-x/M DS, LA	BCR2x00-60 [Op. EV2+DS] (*5)
JCR-33A-x/M DA, LA	BCR2x00-70 [Op. EV2+DA] (*5)
JCR-33A-x/M DR, W(5A)	BCR2x00-57 [Op. EV2+DR, W(20A)] (*4)
JCR-33A-x/M DR, W(10A)	BCR2x00-57 [Op. EV2+DR, W(20A)] (*4)
JCR-33A-x/M DR, W(20A)	BCR2x00-57 [Op. EV2+DR, W(20A)] (*4)
JCR-33A-x/M DR, W(50A)	BCR2x00-58 [Op. EV2+DR, W(100A)] (*4)
JCR-33A-x/M DS, W(5A)	BCR2x00-67 [Op. EV2+DS, W(20A)]
JCR-33A-x/M DS, W(10A)	BCR2x00-67 [Op. EV2+DS, W(20A)]
JCR-33A-x/M DS, W(20A)	BCR2x00-67 [Op. EV2+DS, W(20A)]
JCR-33A-x/M DS, W(50A)	BCR2x00-68 [Op. EV2+DS, W(100A)]
JCR-33A-x/M DA, W(5A)	BCR2x00-77 [Op. EV2+DA, W(20A)]
JCR-33A-x/M DA, W(10A)	BCR2x00-77 [Op. EV2+DA, W(20A)]
JCR-33A-x/M DA, W(20A)	BCR2x00-77 [Op. EV2+DA, W(20A)]
JCR-33A-x/M DA, W(50A)	BCR2x00-78 [Op. EV2+DA, W(100A)]
JCR-33A-x/M A2, C5(9600), DR	BCR2x00-56 [Op. EV2+DR, C5] (*4)

JCR-33A	BCR2
JCR-33A-x/M A2, C5(9600), DS	BCR2x00-66 [Op. EV2+DS, C5]
JCR-33A-x/M A2, C5(9600), DA	BCR2x00-76 [Op. EV2+DA, C5]
JCR-33A-x/M C5(9600), DR, LA	BCR2x00-56 [Op. EV2+DR, C5] (*4)(*5)
JCR-33A-x/M C5(9600), DS, LA	BCR2x00-66 [Op. EV2+DS, C5] (*5)
JCR-33A-x/M C5(9600), DA, LA	BCR2x00-76 [Op. EV2+DA, C5] (*5)
JCR-33A-x/M C5(9600), DR, W(5A)	BCR2x00-51 [Op. EV2+DR, C5W(20A)] (*4)
JCR-33A-x/M C5(9600), DR, W(10A)	BCR2x00-51 [Op. EV2+DR, C5W(20A)] (*4)
JCR-33A-x/M C5(9600), DR, W(20A)	BCR2x00-51 [Op. EV2+DR, C5W(20A)] (*4)
JCR-33A-x/M C5(9600), DR, W(50A)	BCR2x00-52 [Op. EV2+DR, C5W(100A)] (*4)
JCR-33A-x/M C5(9600), DS, W(5A)	BCR2x00-61 [Op. EV2+DS, C5W(20A)]
JCR-33A-x/M C5(9600), DS, W(10A)	BCR2x00-61 [Op. EV2+DS, C5W(20A)]
JCR-33A-x/M C5(9600), DS, W(20A)	BCR2x00-61 [Op. EV2+DS, C5W(20A)]
JCR-33A-x/M C5(9600), DS, W(50A)	BCR2x00-62 [Op. EV2+DS, C5W(100A)]
JCR-33A-x/M C5(9600), DA, W(5A)	BCR2x00-71 [Op. EV2+DA, C5W(20A)]
JCR-33A-x/M C5(9600), DA, W(10A)	BCR2x00-71 [Op. EV2+DA, C5W(20A)]
JCR-33A-x/M C5(9600), DA, W(20A)	BCR2x00-71 [Op. EV2+DA, C5W(20A)]
JCR-33A-x/M C5(9600), DA, W(50A)	BCR2x00-72 [Op. EV2+DA, C5W(100A)]
JCR-33A-x/M TC	Terminal cover sold separately (TC-BCR2)

(*1) To use the ‘Set value memory’ function, use BCR2xx0-x9 (Op. EI).
(*2) To use the ‘Set value memory’ function, use BCR2xx0-03 (Op. EIW(20A)).
(*3) To use the ‘Set value memory’ function, use BCR2xx0-04 (Op. EIW(100A)).
(*4) Select ‘Heating/Cooling control relay contact output’ in [Event output EV2 allocation].
(*5) Select ‘Loop break alarm output’ in [Event output EV2 allocation].

BCR2 Model only

JCR-33A	BCR2
	BCR2x00-x5 [Op. EIT]

● JCD-33A and Corresponding Model BCD2

Case color of JCD-33A: Light gray

JCD-33A	BCD2
JCD-33A-R/M	BCD2R00-00 (*1)
JCD-33A-S/M	BCD2S00-00 (*1)
JCD-33A-A/M	BCD2A00-00 (*1)
JCD-33A-x/M 1	BCD2x10-00 (*1)
JCD-33A-x/M A2	BCD2x00-10 [Op. EV2] (*1)
JCD-33A-x/M C5(9600)	BCD2x00-06 [Op. C5]
JCD-33A-x/M DR	BCD2x00-10 [Op. EV2] (*1)(*4)
JCD-33A-x/M DS	BCD2x00-20 [Op. DS] (*1)
JCD-33A-x/M DA	BCD2x00-30 [Op. DA] (*1)
JCD-33A-x/M LA	BCD2x00-10 [Op. EV2] (*1)(*5)
JCD-33A-x/M P24	BCD2x00-40 [Op. P24] (*1)
JCD-33A-x/M W(5A)	BCD2x00-17 [Op. EV2, W(20A)] (*2)
JCD-33A-x/M W(10A)	BCD2x00-17 [Op. EV2, W(20A)] (*2)
JCD-33A-x/M W(20A)	BCD2x00-17 [Op. EV2, W(20A)] (*2)
JCD-33A-x/M W(50A)	BCD2x00-18 [Op. EV2, W(100A)] (*3)
JCD-33A-x/M A2, C5(9600)	BCD2x00-16 [Op. EV2, C5]
JCD-33A-x/M A2, DR	BCD2x00-50 [Op. EV2+DR] (*4)
JCD-33A-x/M A2, DS	BCD2x00-60 [Op. EV2+DS]
JCD-33A-x/M A2, DA	BCD2x00-70 [Op. EV2+DA]
JCD-33A-x/M C5(9600), DR	BCD2x00-16 [Op. DR, C5] (*4)
JCD-33A-x/M C5(9600), DS	BCD2x00-26 [Op. DS, C5]
JCD-33A-x/M C5(9600), DA	BCD2x00-36 [Op. DA, C5]
JCD-33A-x/M C5(9600), LA	BCD2x00-16 [Op. EV2, C5] (*5)
JCD-33A-x/M C5(9600), P24	BCD2x00-46 [Op. P24, C5]
JCD-33A-x/M C5(9600), W(5A)	BCD2x00-11 [Op. EV2, C5W(20A)]
JCD-33A-x/M C5(9600), W(10A)	BCD2x00-11 [Op. EV2, C5W(20A)]
JCD-33A-x/M C5(9600), W(20A)	BCD2x00-11 [Op. EV2, C5W(20A)]
JCD-33A-x/M C5(9600), W(50A)	BCD2x00-12 [Op. EV2, C5W(100A)]
JCD-33A-x/M DR, LA	BCD2x00-50 [Op. EV2+DR] (*4)(*5)
JCD-33A-x/M DS, LA	BCD2x00-60 [Op. EV2+DS] (*5)
JCD-33A-x/M DA, LA	BCD2x00-70 [Op. EV2+DA] (*5)
JCD-33A-x/M DR, W(5A)	BCD2x00-57 [Op. EV2+DR, W(20A)] (*4)
JCD-33A-x/M DR, W(10A)	BCD2x00-57 [Op. EV2+DR, W(20A)] (*4)
JCD-33A-x/M DR, W(20A)	BCD2x00-57 [Op. EV2+DR, W(20A)] (*4)
JCD-33A-x/M DR, W(50A)	BCD2x00-58 [Op. EV2+DR, W(100A)] (*4)
JCD-33A-x/M DS, W(5A)	BCD2x00-67 [Op. EV2+DS, W(20A)]
JCD-33A-x/M DS, W(10A)	BCD2x00-67 [Op. EV2+DS, W(20A)]
JCD-33A-x/M DS, W(20A)	BCD2x00-67 [Op. EV2+DS, W(20A)]
JCD-33A-x/M DS, W(50A)	BCD2x00-68 [Op. EV2+DS, W(100A)]
JCD-33A-x/M DA, W(5A)	BCD2x00-77 [Op. EV2+DA, W(20A)]
JCD-33A-x/M DA, W(10A)	BCD2x00-77 [Op. EV2+DA, W(20A)]
JCD-33A-x/M DA, W(20A)	BCD2x00-77 [Op. EV2+DA, W(20A)]
JCD-33A-x/M DA, W(50A)	BCD2x00-78 [Op. EV2+DA, W(100A)]
JCD-33A-x/M A2, C5(9600), DR	BCD2x00-56 [Op. EV2+DR, C5] (*4)

JCD-33A	BCD2
JCD-33A-x/M A2, C5(9600), DS	BCD2x00-66 [Op. EV2+DS, C5]
JCD-33A-x/M A2, C5(9600), DA	BCD2x00-76 [Op. EV2+DA, C5]
JCD-33A-x/M C5(9600), DR, LA	BCD2x00-56 [Op. EV2+DR, C5] (*4)(*5)
JCD-33A-x/M C5(9600), DS, LA	BCD2x00-66 [Op. EV2+DS, C5] (*5)
JCD-33A-x/M C5(9600), DA, LA	BCD2x00-76 [Op. EV2+DA, C5] (*5)
JCD-33A-x/M C5(9600), DR, W(5A)	BCD2x00-51 [Op. EV2+DR, C5W(20A)] (*4)
JCD-33A-x/M C5(9600), DR, W(10A)	BCD2x00-51 [Op. EV2+DR, C5W(20A)] (*4)
JCD-33A-x/M C5(9600), DR, W(20A)	BCD2x00-51 [Op. EV2+DR, C5W(20A)] (*4)
JCD-33A-x/M C5(9600), DR, W(50A)	BCD2x00-52 [Op. EV2+DR, C5W(100A)] (*4)
JCD-33A-x/M C5(9600), DS, W(5A)	BCD2x00-61 [Op. EV2+DS, C5W(20A)]
JCD-33A-x/M C5(9600), DS, W(10A)	BCD2x00-61 [Op. EV2+DS, C5W(20A)]
JCD-33A-x/M C5(9600), DS, W(20A)	BCD2x00-61 [Op. EV2+DS, C5W(20A)]
JCD-33A-x/M C5(9600), DS, W(50A)	BCD2x00-62 [Op. EV2+DS, C5W(100A)]
JCD-33A-x/M C5(9600), DA, W(5A)	BCD2x00-71 [Op. EV2+DA, C5W(20A)]
JCD-33A-x/M C5(9600), DA, W(10A)	BCD2x00-71 [Op. EV2+DA, C5W(20A)]
JCD-33A-x/M C5(9600), DA, W(20A)	BCD2x00-71 [Op. EV2+DA, C5W(20A)]
JCD-33A-x/M C5(9600), DA, W(50A)	BCD2x00-72 [Op. EV2+DA, C5W(100A)]
JCD-33A-x/M TC	Terminal cover sold separately (TC-BCD2)

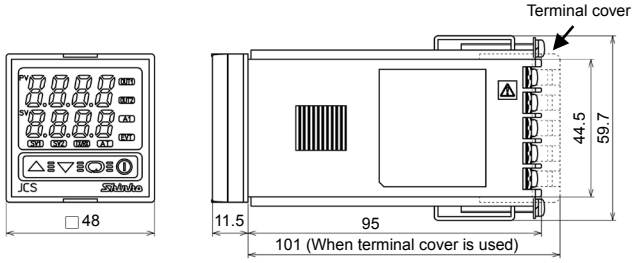
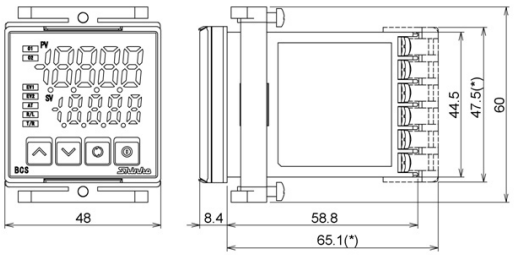
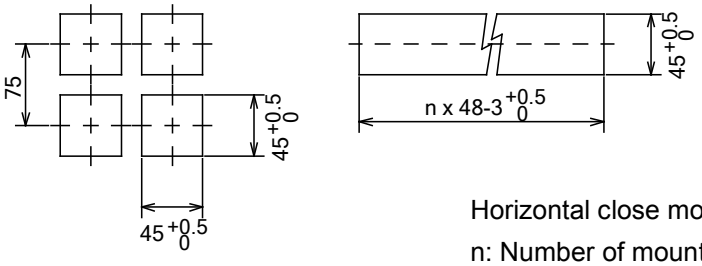
(*1) To use ‘Set value memory’ function, use BCD2xx0-x9 (Op. EI).
(*2) To use ‘Set value memory’ function, use BCD2xx0-03 (Op. EIW(20A)).
(*3) To use ‘Set value memory’ function, use BCD2xx0-04 (Op. EIW(100A)).
(*4) Select ‘Heating/Cooling control relay contact output’ in [Event output EV2 allocation].
(*5) Select ‘Loop break alarm’ in [Event output EV2 allocation].

BCD2 Model only

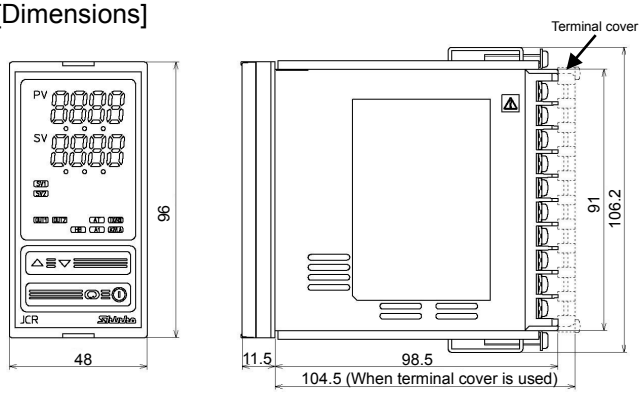
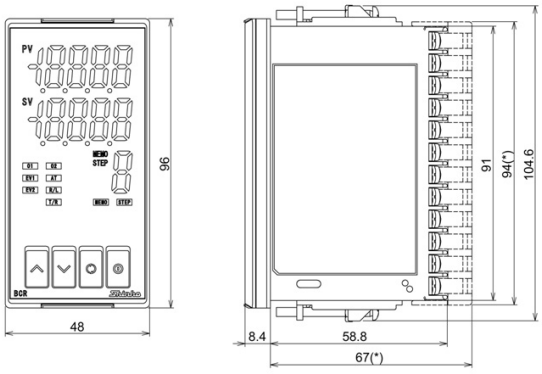
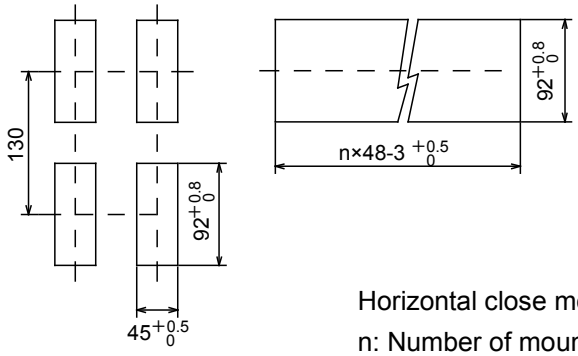
JCD-33A	BCD2
	BCD2x00-x5 [Op. EIT]

● Dimensions (Scale: mm)

JCS-33A, BCS2

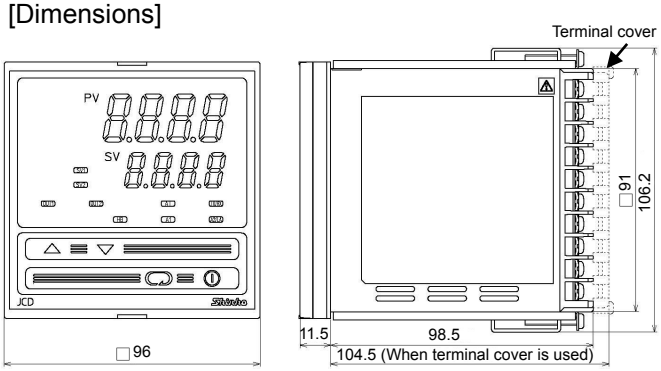
JCS-33A	BCS2
[Dimensions] 	 (*) When terminal cover is used
[Panel cutout]  Horizontal close mounting n: Number of mounted units	

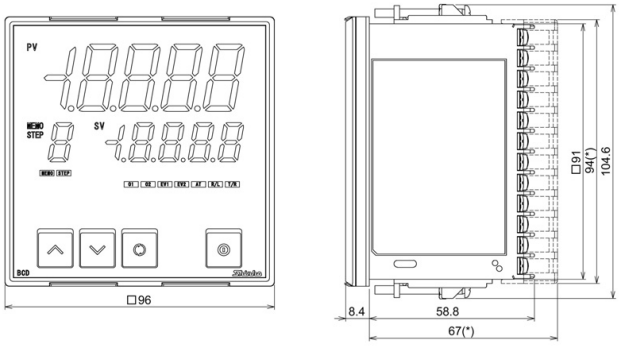
JCR-33A, BCR2

JCR-33A	BCR2
[Dimensions] 	 (*) When terminal cover is used
[Panel cutout]  Horizontal close mounting n: Number of mounted units	

JCD-33A, BCD2

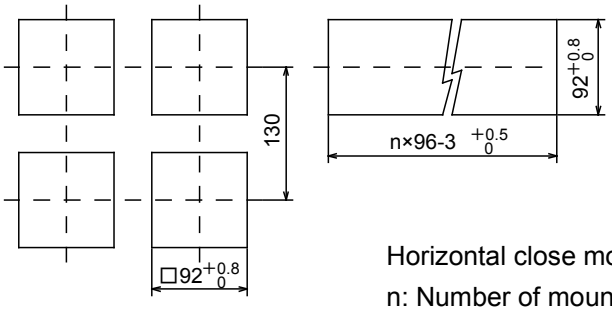
JCD-33A	BCD2
[Dimensions]	





(*) When terminal cover is used

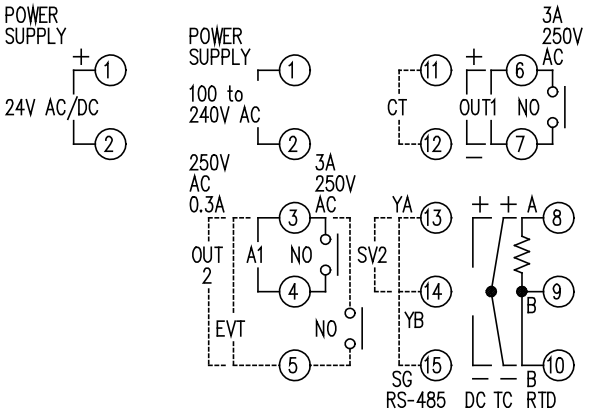
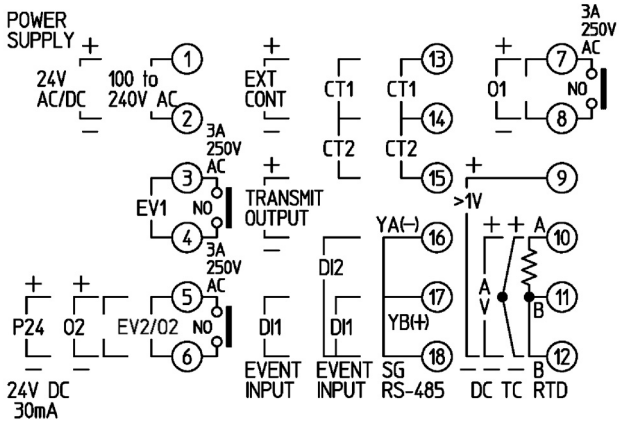
[Panel cutout]



Horizontal close mounting

n: Number of mounted units

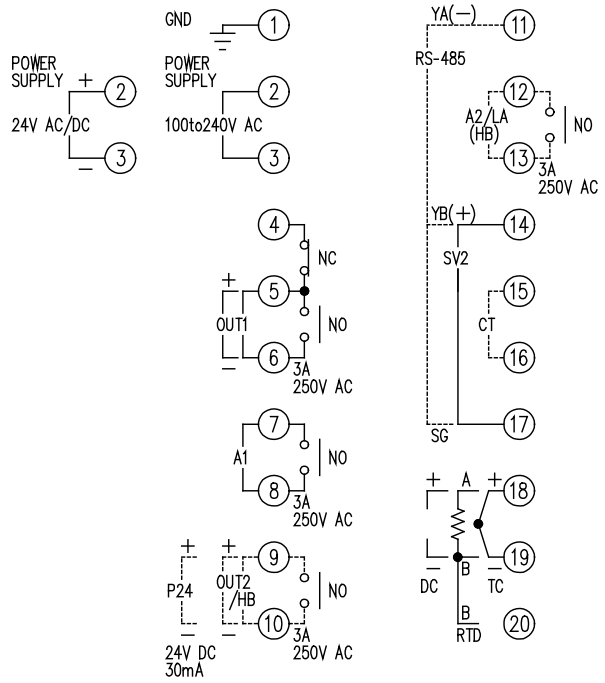
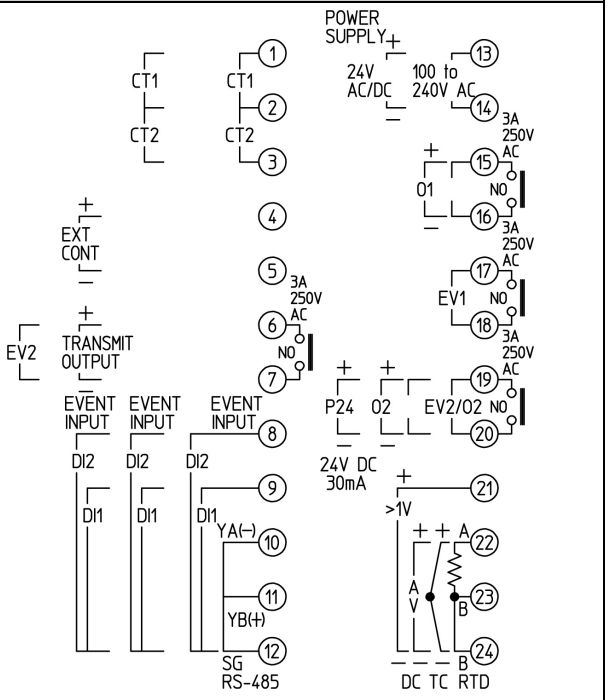
● Terminal Arrangement
JCS-33A, BCS2

JCS-33A	BCS2
	

POWER SUPPLY	Power supply voltage 100 to 240 V AC or 24 V AC/DC [For a 24 V AC/DC power source, ensure polarity is correct when using direct current (DC)].	POWER SUPPLY	Power supply voltage 100 to 240 V AC or 24 V AC/DC [For a 24 V AC/DC power source, ensure polarity is correct when using direct current (DC)].
OUT1	Control output 1	O1	Control output OUT1
A1	Alarm 1 output	EV1	Event output 1
TC	Thermocouple input	TC	Thermocouple input
RTD	RTD input	RTD	RTD input
DC	Direct current or voltage input. For direct current input, connect a 50 Ω shunt resistor between input terminals.	DC	Direct current or voltage input
OUT2	Control output 2 (DT option)	O2	Control output OUT2 (EV2 option)
EVT	Event output (A2 output, Heater burnout alarm output, Loop break alarm output) (A2, W, LA options)	EV2	Event output 2 (EV2 option)
CT	CT input (W option)	CT1	CT input 1 (C5W, EIW, W options)
		CT2	CT input 2 (C5W, EIW, W options)
RS-485	Serial communication (RS-485) (C5 option)	RS-485	Serial communication RS-485 (C5W, C5 options)
SV2	SV1/SV2 external selection input (SM option)	EVENT INPUT	Event input DI1 (EIW, EIT, EI options) Event input DI2 (EIW, EI options)
		EXT CONT	External setting input (EIT option)
		TRANSMIT OUTPUT	Transmission output (EIT option)

Terminal Number Replacement		
Power supply voltage	①(+)－②(-)	①(+)－②(-)
Thermocouple input	⑧(+)－⑩(-)	⑩(+)－⑫(-)
RTD input	⑧(A)－⑨(B)－⑩(B)	⑩(A)－⑪(B)－⑫(B)
Direct current input	⑧(+)－⑩(-)	⑩(+)－⑫(-)
DC voltage input	⑧(+)－⑩(-)	⑩(+)－⑫(-) (0 to 1 V DC) ⑨(+)－⑫(-) (0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC)
Control output 1	⑥(+)－⑦(-)	⑦(+)－⑧(-)
Alarm 1 output	③－④	③－④
Event output	③－⑤	⑤－⑥
Control output 2	③－⑤	⑤－⑥
CT input	⑪－⑫	⑬－⑭
SV1/SV2 external selection input	⑬－⑭	⑰－⑱
Serial communication	⑬－⑭－⑮	⑯－⑰－⑱

JCR-33A, JCD-33A, BCR2, BCD2

JCR-33A, JCD-33A	BCR2, BCD2
	

POWER SUPPLY	Power supply voltage: 100 to 240 V AC or 24 V AC/DC [For a 24 V AC/DC power source, ensure polarity is correct when using direct current (DC)].	POWER SUPPLY	Power supply voltage: 100 to 240 V AC or 24 V AC/DC [For a 24 V AC/DC power source, ensure polarity is correct when using direct current (DC)].
OUT1	Control output OUT1	O1	Control output OUT1
A1	Alarm 1 output	EV1	Event output 1
TC	Thermocouple input	TC	Thermocouple input
RTD	RTD input	RTD	RTD input
DC	Direct current or voltage input. For Direct current input, connect a 50 Ω shunt resistor (sold separately) between input terminals	DC	Direct current or voltage input
SV2	SV1/SV2 external selection input	EVENT INPUT	Event input DI1 (C5W, EIW, EIT, EI options) Event input DI2 (C5W, EIW, EIT, EI options)
OUT2	Control output OUT2 (DR, DS, DA options)	O2	Control output OUT2 (EV2 option)
A2	Alarm 2 output (A2 option)	EV2	Event output 2 (EV2 option)
LA	Loop break alarm output (LA option)		
HB	Heater burnout alarm output (W option)		
P24	Insulated power output 24 V DC (P24 option)	P24	Insulated power output 24 V DC (P24 option)
CT	CT input (W option)	CT1	CT input 1 (C5W, EIW, W options)
		CT2	CT input 2 (C5W, EIW, W options)
RS-485	Serial communication (RS-485) (C5 option)	RS-485	Serial communication RS-485 (C5W, C5 options)
		EXT CONT	External setting input (EIT option)
		TRANSMIT OUTPUT	Transmission output (EIT option)

Terminal Number Replacement	
JCR-33A, JCD-33A	**BCR2, BCD2**
Power supply voltage ②(+)－③(-)	⑬(+)－⑭(-)
Thermocouple input ⑱(+)－⑲(-)	㉒(+)－㉔(-)
RTD input ⑱(A)－⑲(B)－⑳(B)	㉒(A)－㉓(B)－㉔(B)
Direct current input ⑱(+)－⑲(-)	㉒(+)－㉔(-)
DC voltage input ⑱(+)－⑲(-)	㉒(+)－㉔(-)(0 to 1 V DC) ㉑(+)－㉔(-)(0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC)
Control output OUT1 ⑤(+)－⑥(-)	⑮(+)－⑯(-)
Alarm 1 output ⑦－⑧	⑰－⑱
Alarm 2 output ⑫－⑬	⑲－⑳ ⑥－⑦ (EV2+Dx options)
Control output OUT2 ⑨－⑩	⑲－⑳
CT input ⑮－⑯	①－②
SV1/SV2 external selection input ⑭－⑰	⑨－⑫
Serial communication ⑪－⑭－⑰	⑩－⑪－⑫

● Rating Performance

JCS-33A, BCS2

Item		JCS-33A	BCS2
Depth of control panel interior		96 mm	60 mm
Weight		Approx. 200 g	Approx. 110 g
Power supply voltage	Commercial voltage	100 to 240 V AC (85 to 264 V)	100 to 240 V AC (85 to 264 V)
	Low voltage	24 V AC/DC	24 V AC/DC
Power consumption		Approx. 8 VA	100 to 240 V AC: Approx. 8 VA max. (When the maximum number of options are added: Approx. 11 VA max.) 24 V AC: Approx. 5 VA max. (When the maximum number of options are added: Approx. 8 VA max.) 24 V DC: Approx. 5 W max. (When the maximum number of options are added: Approx. 8 W max.)
Input	Thermocouple	K, J, R, S, B, E, T, N, PL-Ⅱ, C	K, J, R, S, B, E, T, N, PL-Ⅱ, C
	RTD	Pt100, JPt100	Pt100, JPt100
	DC voltage	0 to 1 V DC 0 to 5 V DC, 1 to 5 V DC, 0 to 10 VDC	0 to 1 V DC 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC
	Direct current	4 to 20 mA DC, 0 to 20 mA DC (Externally mounted shunt resistor)	4 to 20 mA DC, 0 to 20 mA DC (Built-in shunt resistor)
	Range	Multi-range	Multi-range
PV filter time constant		0 to 10.0 seconds	0.0 to 10.0 seconds
Sensor correction		-100.0 to 100.0℃ (℉) DC input: -1000 to 1000	-1000.0 to 1000.0℃ (℉) DC input: -10000 to 10000 Sensor correction coefficient: ±10.000
Display	PV Display	Red 4-digits 10.2 x 4.9 mm (H x W)	Red 4 1/2-digits 12.4 x 5.8 mm (H x W)
	SV Display	Green 4-digits 8.8 x 4.9 mm (H x W) MV can be indicated by keypad operation.	Green 4 1/2-digits 8.8 x 3.9 mm (HxW) MV can be indicated by keypad operation.
Indication accuracy	TC	Within ±0.2% of each input span±1 digit	Within ±0.2% of each input span±1 digit
	RTD	Within ±0.1% of each input span±1 digit	Within ±0.1% of each input span±1 digit
	DC	Within ±0.2% of each input span±1 digit	Within ±0.2% of each input span±1 digit
Sampling period		250 ms	125 ms
Control method		ON/OFF control, PID control	ON/OFF control, PID control (2DOF PID control): Selectable AT on Startup function

Item		JCS-33A	BCS2
Control parameters	Proportional band (P)	Inputs without a decimal point: 0 to 1000℃ or 2000℉ Inputs with a decimal point: 0.0 to 999.9℃ or 0.0 to 999.9℉ DC input: 0.0 to 100.0%	Inputs without a decimal point: 0 to Input span Inputs with a decimal point: 0.0 to Input span Current/Voltage input: 0.0 to 1000.0%
	Integral time (I)	0 to 1000 seconds	0 to 3600 seconds
	Derivative time (D)	0 to 300 seconds	0 to 1800 seconds
	OUT2 proportional band	0.0 to 10.0 times (Multiplied value of OUT1 proportional band)	Inputs without a decimal point: 0 to Input span Inputs with a decimal point: 0.0 to Input span Current/Voltage input: 0.0 to 1000.0%
	Overlap/ Dead band	-100.0 to 100.0℃ (℉) DC input: -1000 to 1000	-200.0 to 200.0℃ (℉) DC input: -2000 to 2000
	ARW	0 to 100%	0 to 100%
	Output limit	0 to 100% Current output: -5 to 105%	0 to 100% Current output: -5 to 105%
Proportional cycle	Relay output	1 to 120 seconds	0.5, 1 to 120 seconds
	Non-contact voltage output	1 to 120 seconds	0.5, 1 to 120 seconds
Control output	Relay contact	3 A 250 V AC 1a	3 A 250 V AC 1a
	Non-contact voltage	12^{+2} V DC 40 mA	12 V DC±15% 40 mA
	Current	4 to 20 mA DC	4 to 20 mA DC
	Cooling output (OUT2)	Non-contact relay (SSR): 0.3 A 250 V AC	Relay contact: 3 A 250 V AC 1a Non-contact voltage: 12 V DC±15% 40 mA Current: 4 to 20 mA DC
Alarm output		A1 standard, A2 optional Relay contact 3 A 250 V AC 1a	2 points of Event output (EV1 standard, EV2 optional) Relay contact: 3 A 250 V AC 1a 1 point of Event output when Heating/Cooling output is added.

Item		JCS-33A	BCS2
Other functions or options	Loop break alarm	Loop break alarm time: 0 to 200 minutes Loop break alarm band: 0 to 150℃ (℉) or 0.0 to 150.0℃ (℉) DC input: 0 to 1500	Loop break alarm time: 0 to 200 minutes Loop break alarm band: 0 to 150℃ (℉) or 0.0 to 150.0℃ (℉) DC input: 0 to 1500
	Heater burnout alarm	Rated current: 5 A, 10 A, 20 A, 50 A Single-phase CT: Accessory included	Rated current: 20 A, 100 A Single-phase, 3-phase CT: Accessory sold separately
	Serial communication	RS-485 Shinko protocol MODBUS (ASCII) MODBUS (RTU) Max. 19200 bps (2400, 4800, 9600, 19200 bps)	RS-485 Shinko protocol MODBUS (ASCII) MODBUS (RTU) Shinko protocol (JC command allocated) MODBUS ASCII (JC command allocated) MODBUS RTU (JC command allocated) Max. 38400 bps (9600, 19200, 38400 bps)
	Loader communication	Not available	Available (CMD-001)
	Set value memory external selection	1 point (SM option)	2 points (Optional, Selectable in [Event input DI1 (DI2) allocation])
	External setting input	Not available	Setting signal: 4 to 20 mA DC Allowable input: 50 mA DC max. Input impedance: 50 Ω max. Input sampling period: 125 ms
	Transmission output	Not available	Resolution 12000 Output: 4 to 20 mA DC (Load resistance: Max. 550 Ω) Output accuracy: Within ±0.3% of Transmission output span
	Program control	Not available	1 pattern, 9 steps
	Terminal cover	Optional	Sold separately (TC-ACS)
	Color	Light gray or Black (Optional)	Black
Environ-mental specifica-tion	Ambient temperature	0 to 50℃	-10 to 55℃
	Ambient humidity	35 to 85 %RH (Non-condensing)	35 to 85 %RH (Non-condensing)
	Voltage fluctuation	85 to 264 V	85 to 264 V

JCR-33A, BCR2

Item		JCR-33A	BCR2
Depth of control panel interior		100 mm	60 mm
Weight		Approx. 250 g	Approx. 160 g
Power supply voltage	Commercial voltage	100 to 240 V AC (85 to 264 V)	100 to 240 V AC (85 to 264 V)
	Low voltage	24 V AC/DC	24 V AC/DC
Power consumption		Approx. 8 VA	100 to 240 V AC: Approx. 8 VA max. (When the maximum number of options are added: Approx. 11 VA max.) 24 V AC: Approx. 5 VA max. (When the maximum number of options are added: Approx. 8 VA max.) 24 V DC: Approx. 5 W max. (When the maximum number of options are added: Approx. 8 W max.)
Input	Thermocouple	K, J, R, S, B, E, T, N, PL-Ⅱ, C	K, J, R, S, B, E, T, N, PL-Ⅱ, C
	RTD	Pt100, JPt100	Pt100, JPt100
	DC voltage	0 to 1 V DC 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC	0 to 1 V DC 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC
	Direct current	4 to 20 mA DC, 0 to 20 mA DC (Externally mounted shunt resistor)	4 to 20 mA DC, 0 to 20 mA DC (Built-in shunt resistor)
	Range	Multi-range	Multi-range
PV filter time constant		0 to 10.0 seconds	0.0 to 10.0 seconds
Sensor correction		-100.0 to 100.0℃ (℉) DC input: -1000 to 1000	-1000.0 to 1000.0℃ (℉) DC input: -10000 to 10000 Sensor correction coefficient: ±10.000
Display	PV Display	Red 4-digits 11.2 x 5.4 mm (H x W)	Red 4 1/2-digits 14 x 5.8 mm (H x W)
	SV Display	Green 4-digits 11.2 x 5.4 mm (H x W) MV can be indicated by keypad operation.	Green 4 1/2-digits 14 x 5.8 mm (H x W) MV can be indicated by keypad operation.
	MEMO/STEP Display	Not available	Green 1-digit 14 x 5.8 mm (H x W)
Indication accuracy	TC	Within ±0.2% of each input span±1 digit	Within ±0.2% of each input span±1 digit
	RTD	Within ±0.1% of each input span±1 digit	Within ±0.1% of each input span±1 digit
	DC	Within ±0.2% of each input span±1 digit	Within ±0.2% of each input span±1 digit
Sampling period		250 ms	125 ms
Control method		ON/OFF control, PID control	ON/OFF control, PID control (2DOF PID control): Selectable AT on Startup function

Item		JCR-33A	BCR2
Control parameters	Proportional band (P)	Inputs without a decimal point: 0 to 1000℃ or 2000℉ Inputs with a decimal point: 0.0 to 999.9℃ or 0.0 to 999.9℉ DC input: 0.0 to 100.0%	Inputs without a decimal point: 0 to Input span Inputs with a decimal point: 0.0 to Input span Current/Voltage input: 0.0 to 1000.0%
	Integral time (I)	0 to 1000 seconds	0 to 3600 seconds
	Derivative time (D)	0 to 300 seconds	0 to 1800 seconds
	OUT2 proportional band	0.0 to 10.0 times (Multiplied value of OUT1 proportional band)	Inputs without a decimal point: 0 to Input span Inputs with a decimal point: 0.0 to Input span Current/Voltage input: 0.0 to 1000.0%
	Overlap/ Dead band	-100.0 to 100.0℃ (℉) DC input: -1000 to 1000	-200.0 to 200.0℃ (℉) DC input: -2000 to 2000
	ARW	0 to 100%	0 to 100%
	Output limit	0 to 100% Current output: -5 to 105%	0 to 100% Current output: -5 to 105%
Proportional cycle	Relay output	1 to 120 seconds	0.5, 1 to 120 seconds
	Non-contact voltage output	1 to 120 seconds	0.5, 1 to 120 seconds
Control output	Relay contact	3 A 250 V AC 1a1b	3 A 250 V AC 1a
	Non-contact voltage	12^{+2} V DC 40 mA	12 V DC±15% 40 mA
	Current	4 to 20 mA DC	4 to 20 mA DC
	Cooling output (OUT2)	Relay contact: 3 A 250 V AC 1a Non-contact voltage: 12^{+2} V DC 40 mA Current: 4 to 20 mA DC	Relay contact: 3 A 250 V AC 1a Non-contact voltage: 12 V DC±15% 40 mA Current: 4 to 20 mA DC
Alarm output		A1 standard, A2 optional Relay contact: 3 A 250 V AC 1a	2 points of Event output (EV1 standard, EV2 optional) Relay contact: 3 A 250 V AC 1a 1 point of Event output when Heating/ Cooling output is added.

Item		JCR-33A	BCR2
Other functions and options	Loop break alarm	Loop break alarm time: 0 to 200 minutes Loop break alarm band: 0 to 150℃ (℉) or 0.0 to 150.0℃ (℉) DC input: 0 to 1500	Loop break alarm time: 0 to 200 minutes Loop break alarm band: 0 to 150℃ (℉) or 0.0 to 150.0℃ (℉) DC input: 0 to 1500
	Heater burnout alarm	Rated current: 5 A, 10 A, 20 A, 50 A Single-phase CT: Accessory included	Rated current: 20 A, 100 A Single-phase, 3-phase CT: Accessory sold separately
	Serial communication	RS-485 Shinko protocol MODBUS (ASCII) MODBUS (RTU) Max. 19200 bps (2400, 4800, 9600, 19200 bps)	RS-485 Shinko protocol MODBUS (ASCII) MODBUS (RTU) Shinko protocol (JC command allocated) MODBUS ASCII (JC command allocated) MODBUS RTU (JC command allocated) Max. 38400 bps (9600, 19200, 38400 bps)
	Loader communication	Not available	Available (CMD-001)
	Set value memory external selection	1 point (Standard)	2 points (Optional, Selectable in [Event input DI1 (DI2) allocation])
	External setting input	Not available	Setting signal: 4 to 20 mA DC Allowable input: 50 mA DC max. Input impedance: 50 Ω max. Input sampling period: 125 ms
	Transmission output	Not available	Resolution: 12000 Output: 4 to 20 mA DC (Load resistance: Max. 550 Ω) Output accuracy: Within ±0.3% of Transmission output span
	Program control	Not available	1 pattern, 9 steps
	Insulated power output	24±3 V DC 30 mA DC	24±3 V DC 30 mA DC
	Terminal cover	Optional	Sold separately (TC-BCR2)
	Color	Light gray or Black (Optional)	Black
Environ-mental specifica-tion	Ambient temperature	0 to 50℃	-10 to 55℃
	Ambient humidity	35 to 85 %RH (Non-condensing)	35 to 85 %RH (Non-condensing)
	Voltage fluctuation	85 to 264 V	85 to 264 V

JCD-33A, BCD2

Item		JCD-33A	BCD2
Depth of control panel interior		100 mm	60 mm
Weight		Approx. 370 g	Approx. 220 g
Power supply voltage	Commercial voltage	100 to 240 V AC (85 to 264 V)	100 to 240 V AC (85 to 264 V)
	Low voltage	24 V AC/DC	24 V AC/DC
Power consumption		Approx. 8 VA	100 to 240 V AC: Approx. 8 VA max. (When the maximum number of options are added: Approx. 11 VA max.) 24 V AC: Approx. 5 VA max. (When the maximum number of options are added: Approx. 8 VA max.) 24 V DC: Approx. 5 W max. (When the maximum number of options are added: Approx. 8 W max.)
Input	Thermocouple	K, J, R, S, B, E, T, N, PL-Ⅱ, C	K, J, R, S, B, E, T, N, PL-Ⅱ, C
	RTD	Pt100, JPt100	Pt100, JPt100
	DC voltage	0 to 1 V DC 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC	0 to 1 V DC 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC
	Direct current	4 to 20 mA DC, 0 to 20 mA DC (Externally mounted shunt resistor)	4 to 20 mA DC, 0 to 20 mA DC (Built-in shunt resistor)
	Range	Multi-range	Multi-range
PV filter time constant		0 to 10.0 seconds	0.0 to 10.0 seconds
Sensor correction		-100.0 to 100.0℃ (℉) DC input: -1000 to 1000	-1000.0 to 1000.0℃ (℉) DC input: -10000 to 10000 Sensor correction coefficient: ±10.000
Display	PV Display	Red 4-digits 18 x 8 mm (H x W)	Red 4 1/2-digits 24 x 11 mm (H x W)
	SV Display	Green 4-digits 12.6 x 6 mm (H x W) MV can be indicated by keypad operation.	Green 4 1/2-digits 14 x 7 mm (H x W) MV can be indicated by keypad operation.
	MEMO/STEP Display	Not available	Green 1-digit 14 x 7 mm (H x W)
Indication accuracy	TC	Within ±0.2% of each input span±1 digit	Within ±0.2% of each input span±1 digit
	RTD	Within ±0.1% of each input span±1 digit	Within ±0.1% of each input span±1 digit
	DC	Within ±0.2% of each input span±1 digit	Within ±0.2% of each input span±1 digit
Sampling period		250 ms	125 ms
Control method		ON/OFF control, PID control	ON/OFF control, PID control (2DOF PID control): Selectable AT on Startup function

Item		JCD-33A	BCD2
Control parameters	Proportional band (P)	Inputs without a decimal point: 0 to 1000℃ or 2000℉ Inputs with a decimal point: 0.0 to 999.9℃ or 0.0 to 999.9℉ DC input: 0.0 to 100.0%	Inputs without a decimal point: 0 to Input span Inputs with a decimal point: 0.0 to Input span Current/Voltage input: 0.0 to 1000.0%
	Integral time (I)	0 to 1000 seconds	0 to 3600 seconds
	Derivative time (D)	0 to 300 seconds	0 to 1800 seconds
	OUT2 proportional band	0.0 to 10.0 times (Multiplied value of OUT1 proportional band)	Inputs without a decimal point: 0 to Input span Inputs with a decimal point: 0.0 to Input span Current/Voltage input: 0.0 to 1000.0%
	Overlap/ Dead band	-100.0 to 100.0℃ (℉) DC input: -1000 to 1000	-200.0 to 200.0℃ (℉) DC input: -2000 to 2000
	ARW	0 to 100%	0 to 100%
	Output limit	0 to 100% Current output: -5 to 105%	0 to 100% Current output: -5 to 105%
Proportional cycle	Relay output	1 to 120 seconds	0.5, 1 to 120 seconds
	Non-contact voltage output	1 to 120 seconds	0.5, 1 to 120 seconds
Control output	Relay contact	3 A 250 V AC 1a1b	3 A 250 V AC 1a
	Non-contact voltage	12^{+2} V DC 40 mA	12 V DC±15% 40 mA
	Current	4 to 20 mA DC	4 to 20 mA DC
	Cooling output (OUT2)	Relay contact: 3 A 250 V AC 1a Non-contact voltage: 12^{+2} V DC 40 mA Current: 4 to 20 mA DC	Relay contact: 3 A 250 V AC 1a Non-contact voltage: 12 V DC±15% 40 mA Current: 4 to 20 mA DC
Alarm output		A1 standard, A2 optional Relay contact: 3 A 250 V AC 1a	2 points of Event output (EV1 standard, EV2 optional) Relay contact: 3 A 250 V AC 1a 1 point of Event output when Heating/ Cooling output is added.

Item		JCD-33A	BCD2
Other functions and options	Loop break alarm	Loop break alarm time: 0 to 200 minutes Loop break alarm band: 0 to 150℃ (℉) or 0.0 to 150.0℃ (℉) DC input: 0 to 1500	Loop break alarm time: 0 to 200 minutes Loop break alarm band: 0 to 150℃ (℉) or 0.0 to 150.0℃ (℉) DC input: 0 to 1500
	Heater burnout alarm	Rated current: 5 A, 10 A, 20 A, 50 A Single-phase CT: Accessory included.	Rated current: 20 A, 100 A Single-phase, 3-phase CT: Accessory sold separately
	Serial communication	RS-485 Shinko protocol MODBUS (ASCII) MODBUS (RTU) Max. 19200 bps (2400, 4800, 9600, 19200 bps)	RS-485 Shinko protocol MODBUS (ASCII) MODBUS (RTU) Shinko protocol (JC command allocated) MODBUS ASCII (JC command allocated) MODBUS RTU (JC command allocated) Max. 38400 bps (9600, 19200, 38400 bps)
	Loader communication	Not available	Available (CMD-001)
	Set value memory external selection	1 point (Standard)	2 points (Optional, Selectable in [Event input allocation])
	External setting input	Not available	Setting signal: 4 to 20 mA DC Allowable input: 50 mA DC max. Input impedance: 50 Ω max. Input sampling period: 125 ms
	Transmission output	Not available	Resolution: 12000 Output: 4 to 20 mA DC (Load resistance: Max. 550 Ω) Output accuracy: Within ±0.3% of Transmission output span
	Program control	Not available	1 pattern, 9 steps
	Insulated power output	24±3 V DC 30 mA DC	24±3 V DC 30 mA DC
	Terminal cover	Optional	Sold separately (TC-BCD2)
	Color	Light gray or Black (Optional)	Black
Environ-mental specifica-tion	Ambient temperature	0 to 50℃	-10 to 55℃
	Ambient humidity	35 to 85 %RH (Non-condensing)	35 to 85 %RH (Non-condensing)
	Voltage fluctuation	85 to 264 V	85 to 264 V

● Input Range

Rated Scale

JCx-33A Series

Input	Input Range		Resolution
K	-200 to 1370℃	-320 to 2500℉	1℃ (℉)
	-199.9 to 400.0℃	-199.9 to 750.0℉	0.1℃ (℉)
J	-200 to 1000℃	-320 to 1800℉	1℃ (℉)
R	0 to 1760℃	0 to 3200℉	1℃ (℉)
S	0 to 1760℃	0 to 3200℉	1℃ (℉)
B	0 to 1820℃	0 to 3300℉	1℃ (℉)
E	-200 to 800℃	-320 to 1500℉	1℃ (℉)
T	-199.9 to 400.0℃	-199.9 to 750.0℉	0.1℃ (℉)
N	-200 to 1300℃	-320 to 2300℉	1 ℃ (℉)
PL-Ⅱ	0 to 1390℃	0 to 2500℉	1 ℃ (℉)
C(W/Re5-26)	0 to 2315℃	0 to 4200℉	1 ℃ (℉)
Pt100	-199.9 to 850.0℃	-199.9 to 999.9℉	0.1℃ (℉)
	-200 to 850℃	-300 to 1500℉	1℃ (℉)
JPt100	-199.9 to 500.0℃	-199.9 to 900.0℉	0.1℃ (℉)
	-200 to 500℃	-300 to 900℉	1℃ (℉)
4 to 20 mA	-1999 to 9999 (*1)(*2)		1
0 to 20 mA	-1999 to 9999 (*1)(*2)		1
0 to 1 V	-1999 to 9999 (*1)		1
0 to 5 V	-1999 to 9999 (*1)		1
1 to 5 V	-1999 to 9999 (*1)		1
0 to 10 V	-1999 to 9999 (*1)		1

(*1) Decimal point place change and scaling are possible.

(*2) For direct current (mA) input, connect a 50 Ω shunt resistor (sold separately) between input terminals.

BCx2 Series

Input	Input Range		Resolution
K	-200 to 1370℃	-328 to 2498℉	1℃ (℉)
	-200.0 to 400.0℃	-328.0 to 752.0℉	0.1℃ (℉)
J	-200 to 1000℃	-328 to 1832℉	1℃ (℉)
R	0 to 1760℃	32 to 3200℉	1℃ (℉)
S	0 to 1760℃	32 to 3200℉	1℃ (℉)
B	0 to 1820℃	32 to 3308℉	1℃ (℉)
E	-200 to 800℃	-328 to 1472℉	1℃ (℉)
T	-200.0 to 400.0℃	-328.0 to 752.0℉	0.1℃ (℉)
N	-200 to 1300℃	-328 to 2372℉	1℃ (℉)
PL-Ⅱ	0 to 1390℃	32 to 2534℉	1℃ (℉)
C(W/Re5-26)	0 to 2315℃	32 to 4199℉	1℃ (℉)
Pt100	-200.0 to 850.0℃	-328.0 to 1562.0℉	0.1℃ (℉)
	-200 to 850℃	-328 to 1562℉	1℃ (℉)
JPt100	-200.0 to 500.0℃	-328.0 to 932.0℉	0.1℃ (℉)
	-200 to 500℃	-328 to 932℉	1℃ (℉)
4 to 20 mA	-2000 to 10000 (*1)(*2)		1
0 to 20 mA	-2000 to 10000 (*1)(*2)		1
0 to 1 V	-2000 to 10000 (*1)		1
0 to 5 V	-2000 to 10000 (*1)		1
1 to 5 V	-2000 to 10000 (*1)		1
0 to 10 V	-2000 to 10000 (*1)		1

(*1) Decimal point place change and scaling are possible.

(*2) For direct current (mA) input, this input type has a built-in shunt resistor.

Input Specifications

JCx-33A Series

Thermocouple	K, J, R, S, B, E, T, N, PL-Ⅱ, C(W/Re5-26) External resistance: 100 Ω max. (However, B: 40 Ω max.)
RTD	Pt100, JPt100 3-wire system Allowable input lead wire resistance: 10 Ω max. per wire
Direct current	0 to 20 mA DC, 4 to 20 mA DC Input impedance: 50 Ω [Connect a 50 Ω shunt resistor (sold separately) between input terminals.] Allowable input current: 50 mA max. [when using a shunt resistor (sold separately)]
DC voltage	0 to 1 V DC Input impedance: 1 MΩ minimum Allowable input voltage: 5 V DC max. Allowable signal source resistance: 2 kΩ max. 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC Input impedance: 100 kΩ minimum Allowable input voltage: 15 V DC max. Allowable signal source resistance: 100 Ω max.

BCx2 series

Thermocouple	K, J, R, S, B, E, T, N, PL-Ⅱ, C(W/Re5-26) External resistance: 100 Ω max.(However, B: 40 Ω max.)
RTD	Pt100, JPt100 3-wire system Allowable input lead wire resistance: 10 Ω max. per wire
Direct current	0 to 20 mA DC, 4 to 20 mA DC Input impedance: 50 Ω Allowable input current: 50 mA max.
DC voltage	0 to 1 V DC Input impedance: 1 MΩ minimum Allowable input voltage: 5 V DC max. Allowable signal source resistance: 2 kΩ max. 0 to 5 V DC, 1 to 5 V DC, 0 to 10 V DC Input impedance: 100 kΩ minimum Allowable input voltage: 15 V DC max. Allowable signal source resistance: 100 Ω max.

● Communication Command

Item	JCx-33A Series	BCx2 Series (*1)
SV1	0001H	0001H
AT/Auto-reset	0003H	00E6H
OUT1 proportional band	0004H	003CH
OUT2 proportional band	0005H	0047H
Integral time	0006H	003DH
Derivative time	0007H	003EH
OUT1 proportional cycle	0008H	0041H
OUT2 proportional cycle	0009H	0048H
A1 value	000BH	0012H
A2 value	000CH	0014H
Heater burnout alarm value	000FH	001CH
Loop break alarm time	0010H	001EH
Loop break alarm band	0011H	001FH
Set value lock	0012H	004EH
SV high limit (*2)	0013H	—
SV low limit (*2)	0014H	—
Sensor correction	0015H	0050H
Overlap/Dead band	0016H	004CH
Scaling high limit	0018H	0003H
Scaling low limit	0019H	0004H
Decimal point place	001AH	0005H
PV filter time constant	001BH	0051H
OUT1 high limit	001CH	0043H
OUT1 low limit	001DH	0044H
OUT1 ON/OFF hysteresis	001EH	0042H
OUT2 cooling method	001FH	0046H
OUT2 high limit	0020H	004AH
OUT2 low limit	0021H	004BH
OUT2 ON/OFF hysteresis	0022H	0049H
A1 type	0023H	0006H
A2 type	0024H	0007H
A1 hysteresis	0025H	0025H
A2 hysteresis	0026H	0029H
A1 delay time	0029H	0026H
A2 delay time	002AH	002AH
A1 Energized/De-energized	0040H	0027H
A2 Energized/De-energized	0041H	002BH
Input type	0044H	0002H
Direct/Reverse action	0045H	004DH
AT bias	0047H	005BH
ARW	0048H	003FH
PV reading	0080H	0100H
Status flag reading	0085H	010DH, 010EH

(*1) If 'JC command allocated' is selected in [Communication protocol], JCx-33A series communication commands can be used.

(*2) Communication commands SV high limit (0013H), SV low limit (0014H) are common to Scaling high limit (0018H), Scaling low limit (0019H).
If SV high limit (0013H) is set, Scaling high limit (0018H) will be the same value as SV high limit (0013H), and if SV low limit (0014H) is set, Scaling low limit (0019H) will be the same value as SV low limit (0014H).