DB600 SERIES
DIGITAL INDICATING CONTROLLER

PERFORMANCE SPECIFICATION
CHINO

The DB600 series is a digital indicating controller with the indicating accuracy of ±0.1% and the control cycle of approximately 0.1 seconds.
Various functions including universal input and multiple setting values (8 types) are provided as standard.
There are three types of size.
DB670 --- 96 x 96mm, DB650 --- 96 x 48mm,
DB630 --- 48 x 48mm

FEATURES

Excellent control performance
PID control algorithm and Z control algorithm are selectable according to the application.
PID control algorithm: Conventional control method
Z control algorithm: Our new algorithm (patent pending) which has evolved the PID control method. Especially, the effect can be expected such as overshoot suppression and speedy recovery in the event of disturbance control (during opening and closing of the electric furnace).

Large easy-to-view 5-digit 11 segments display
Process value (PV) and set value (SV) are displayed by large easy-to-view 5-digit display indicators. The resolution of 0.1°C is enabled for more than 1000°C.

Highly-functional operation screen and settings screen
The controller inherits the operation screen and the settings screen adopting the LCD (liquid-crystal-display) which has been familiarized for long time. Furthermore, the screens have become high-definition and highly sophisticated.

Operability inheriting previous models
The controller inherits the settings screen which has been familiarized for long time. You can set up it with operation which is not different from previous models. The performance of touching-keys has been improved and the outstanding operability has been realized.

24V power supply voltage type available
The power supply voltage 24V (AC/DC) type, which is advantageous in respect of safe, is available.

Various operating status in one glance
Operating condition
Setting value ramp (option for program model)
Analog bar output

Universal input
Various measurement ranges of DC voltage (up to maximum 10V) inputs, DC current input, thermocouple inputs and resistance thermometer inputs have been built-in.

Program Operation (option)
Set 4 patterns, 12 steps.

Conforming to international safety standards and European directives (CE) (conformity pending)
The controller is in conformity with European directives (CE), and is UL and c-UL approved.

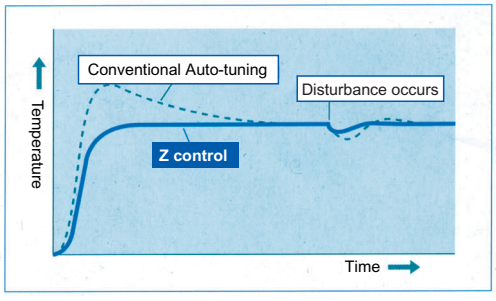
Engineering Software (Standard attached)
By connecting to PC with exclusive USB engineering cable (RZ-EC3) (sold separately), you can load / save parameter data and acquistion.

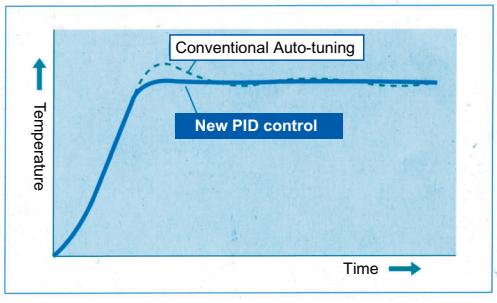
What is Z control?

Z Control is applied from control algorithm of skunk cabbage (white arum).
Skunk cabbage is a plant that generates heat to maintain body temperature at about 20 ℃ in spite of changes in the outside temperature.
Incorporating system of heating control by minimum energy to the controller.

Excellent control

Control algorithm (PID control, Z control)
You can choose the control algorithm PID control and Z control depending on the controlled object or application.
PID control
Conventional control algorithm
Z control
It is our original control algorithm which we evolved from general PID control.
Especailly during heating control, it can supress overshoot effect, shortening stabilzaiton time, speed up of returing speed from distrubance (ex. the opening and closing of the oven door).
Achieve better control condition by new auto-tuning
Improved conventional auto-tuning and determine more appropriate control parameter setting.
Compared to the conventional method, it can suppress overshooting and reduct of the settling time.





■ MODELS

●DB670

DB67□□□□□□□□0□

Control algorithm
0 : PID control
Z : Z control

Control output 1
1 : ON-OFF pulse output type
2 : ON-OFF servo output type
3 : Current output type
5 : SSR drive pulse output type
6 : Voltage output type

Control output 2 (Option)
0 : None
1 : ON-OFF pulse output type *1
3 : Current output type *1
5 : SSR drive pulse output type *1
6 : Voltage output type *1

Communications interface
+ 5 External signal input points
/ 5 Event output points (Option)
0 : None
A : RS422A + 5 External signal input points [DI 1 to 5]
S : RS485 + 5 External signal input points [DI 1 to 5]
B : RS422A + 5 Event output points (open corrector output) [EV 5 to 9]
C : RS485 + 5 Event output points (open corrector output) [EV 5 to 9]
D : 5 External signal input points [DI 1 to 5]
E : 5 Event output points (open corrector output) [EV 5 to 9]

Transmission signal output
+ 2 Event output points (Option)
0 : None
1 : 4 to 20mA
2 : 0 to 1V
3 : 0 to 10V
4 : 4 to 20mA + 2 Event output points (mechanical relay output) [EV3,4]
5 : 0 to 1V + 2 Event output points (mechanical relay output) [EV3,4]
6 : 0 to 10V + 2 Event output points (mechanical relay output) [EV3,4]
7 : 2 Event output points (mechanical relay output) [EV3,4]

Remote signal input
+ 2 External signal input points (Option)
0 : None
5 : 4 to 20mA
6 : 0 to 1V
7 : 0 to 10V
8 : 4 to 20mA + 2 External signal input points [DI6,7] *2
9 : 0 to 1V + 2 External signal input point [DI6,7] *2
A : 0 to 1V + 2 External signal input points [DI6,7] *2
B : 2 External signal input points [DI6,7] *2

Programming function (Option)
- : None
P : Available

2 Event output points
+ Heater disconnection detection (Option)
0 : None
1 : 2 Event output points (mechanical relay output) [EV1,2] *3
2 : 2 Event output points (mechanical relay output) [EV1,2] *3 + Heater disconnection detection *4

Power voltage
A : 100 to 240V AC
D : 24V AC/DC

*1 It can be specified when Control output 1 is "1" , "3", "5" or "6".
*2 It can be specified when 2 Event output points + Heater disconnection detection is "0" or "1".
*3 When specification with Control output 2, number of event output points is only 1 point [EV2]
*4 It can be specified when Control output 1 and Control output 2 are "1" or "5" and Remote signal input + 2 External signal input points is "0", "5", "6" or "7".
However, if Control output 1 and Control output 2 are both "1" or "5", it can be operated with Control output 1.

●DB650

DB65□□□□□□□□0□

Control algorithm
0 : PID control
Z : Z control

Control output 1
1 : ON-OFF pulse output type
2 : ON-OFF servo output type
3 : Current output type
5 : SSR drive pulse output type
6 : Voltage output type

Control output 2 (Option)
0 : None
1 : ON-OFF pulse output type *1
3 : Current output type *1
5 : SSR drive pulse output type *1
6 : Voltage output type *1

Communications interface
+ 5 External signal input points
/ 5 Event output points (Option)
0 : None
A : RS422A + 5 External signal input points [DI 1 to 5]
S : RS485 + 5 External signal input points [DI 1 to 5]
B: RS422A + 5 Event output points (open corrector output) [EV 5 to 9]
C : RS485 + 5 Event output points (open corrector output) [EV 5 to 9]
D : 5 External signal input points [DI 1 to 5]
E: 5 Event output points (open corrector output) [EV 5 to 9]

Transmission signal output
+ 2 Event output points (Option)
0 : None
1 : 4 to 20mA
2 : 0 to 1V
3 : 0 to 10V
4 : 4 to 20mA + 2 Event output points (mechanical relay output) [EV3,4]*1
5 : 0 to 1V + 2 Event output points (mechanical relay output) [EV3,4]*1
6 : 0 to 10V + 2 Event output points (mechanical relay output) [EV3,4]*1
7 : 2 Event output points (mechanical relay output) [EV3,4]*1

Remote signal input +
2 External signal input points (Option)
0 : None
5 : 4 to 20mA
6 : 0 to 1V
7 : 0 to 10V
8 : 4 to 20mA + 2 External signal input points [DI6,7] *2
9 : 0 to 1V + 2 External signal input point [DI6,7] *2
A : 0 to 10V + 2External signal input points [DI6,7] *2
B: 2 External signal input points [DI6,7] *2

Programming function (Option)
- : None
P : Available

2 Event output points
+ Heater disconnection detection (Option)
0 : None
1 : 2 Event output points (mechanical relay output) [EV1,2] *3
2 : 2 Event output points (mechanical relay output) [EV1,2] *3 + Heater disconnection detection *4

Power voltage
A : 100 to 240V AC
D : 24V AC/DC

*1 It can be specified when Control output 1 is "1" , "3", "5" or "6".
*2 It can be specified when 2 Event output points + Heater disconnection detection is "0" or "1".
*3 When specification with Control output 2, number of event output points is only 1 point [EV2]
*4 It can be specified when Control output 1 and Control output 2 are "1" or "5" and Remote signal input + 2 External signal input points is "0", "5", "6" or "7".
However, if Control output 1 and Control output 2 are both "1" or "5", it can be operated with Control output 1.

●DB630

DB63□□□□00□□0□

Control algorithm
0 : PID control
Z : Z control

Control output 1
1 : ON-OFF pulse output type
3 : Current output type
5 : SSR drive pulse output type
6 : Voltage output type

Control output 2 (Option)
0 : None
3 : Current output type
5 : SSR drive pulse output type
6 : Voltage output type

Communications interface + 1 External signal input point / 5 External signal input points / 5 Event output points(Option)
0 : None
S : RS485 + 1 External signal input points [DI 1]
D : 5 External signal input points [DI 1 to 5]
E : 5 Event output points (open corrector output) [EV 5 to 9]

Programming function (Option)
- : None
P : Available

2 Event output points (Option)
0 : None
1 : 2 Event output points (mechanical relay output) [EV1,2] *1

Power voltage
A : 100 to 240V AC
D : 24V AC/DC

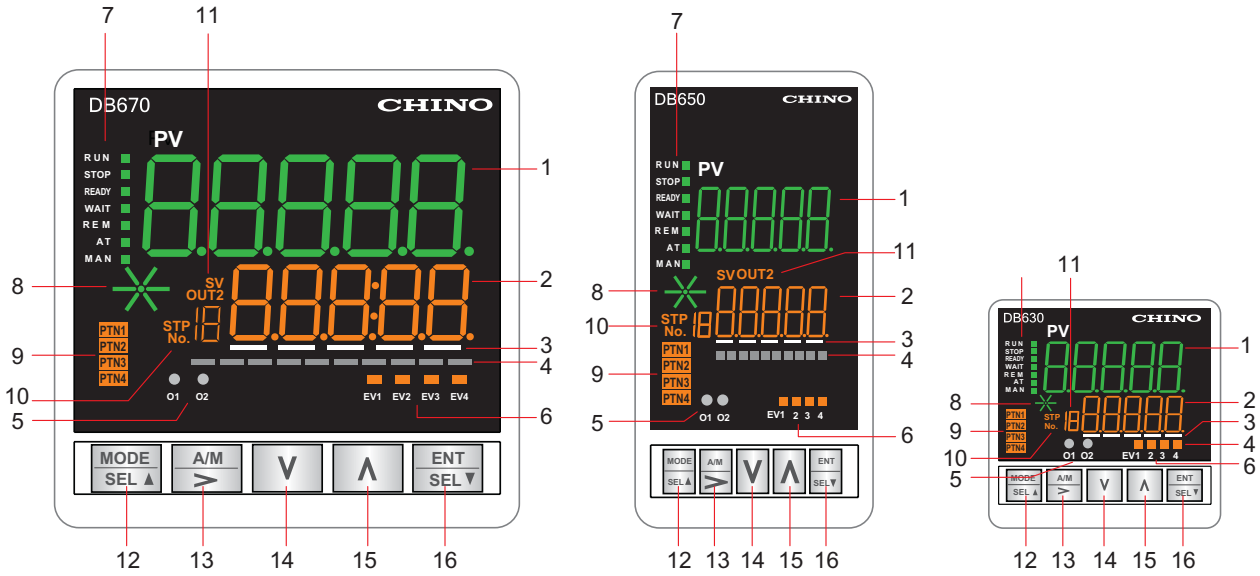
*1 When specification with control output 2, number of event output points is only 1 point [EV2]

■ MEASURING RANGES

Input type		Measuring ranges	Measuring accuracy	
Thermocouple	B	0.0 to 1820.0°C	±0.1% of FS ±1digit For below 0°C, ±0.2% of FS ±1digit	Below 400°C: Out of specifications 400 to 800°C: ±0.2%FS±1digit
	R	0.0 to 1760.0°C		Bellow 400°C: ±0.2%±FS1digit
	S	0.0 to 1760.0°C		
	N	0.0 to 1760.0°C		
	K1	-200.0 to 1370.0°C		
	K2	-200.0 to 500.0°C		
	E	-200.0 to 900.0°C		
	J	-200.0 to 1200.0°C		
	T	-200.0 to 400.0°C		
	U	-200.0 to 400.0°C		
	L	-200.0 to 900.0°C		
	WRe5-WRe26	0.0 to 2310.0°C		
	W-WRe26	0.0 to 2310.0°C		Below 400°C: ±0.4%FS±1digit
	Platinel Ⅱ	0.0 to 1390.0°C		
	PtRh40-PtRh20	0.0 to 1880.0°C	±0.3% of FS ±1digit	Below 400°C: ±1.5%FS±1digit 400 to 800°C: ±0.8%FS±1digit
	Au-Pt	0.0 to 1000°C	±0.1% of FS ±1digit	
RTD	Pt100	-200.0 to 850.0°C	±0.1% of FS ±1digit	
		-200.0 to 200.0°C		
	JPt100	-200.0 to 649.0°C		
		-200.0 to 200.0°C		
	Pt50	-200.0 to 649.0°C		
DC voltage	20mV	-20.00 to 20.00mV	±0.1% of FS ±1digit	
	100mV	-100.00 to100.00mV		
	5V	-5.000 to 5.000mV		
	10V	-10.00 to 10.00mV		

* Accuracy indicates the performance under reference operating condition.
* For thermocouple, the reference junction compensation accuracy is added to the above measured accuracy.
*To measure DC current, ranges is converted to DC voltage by optional shunt resistor [250 Ω]

NAMES OF VARIOUS PARTS



Display

1. Measured value (PV)/ Parameter setting title
2. Setting value (SV)/ operating condition/ parameter setting value
3. Cursor for setting parameter
4. Analog bar
5. Output
6. Event
7. Operating condition display
   - Constant value operation (program operation OFF)
   - Program operation (program operation ON)
     *Option model only
8. Setting value ramp display
   - Constant value operation (program operation OFF)
   - Program operation (program operation ON)
     *Option model only
9. Pattern No. (program operation ON)
   *Option model only
10. Execution No./ Step No.
    - Constant value operation (program operation OFF)
    - Program operation (program operation ON)
      *Option model only
11. Operation condition display

Function keys

12. [MODE] key : Depending on the screen of which key is pressed at, following screen is displayed.
    - Displays operation initial screen, when displaying operation screen expect for operation initial screen.
    - Displays initial screen of MODE0, when displaying operation initial screen of operation screen.
    - Displays operation initial screen, when displaying initial screen of setting screen.
    - Displays initial screen of setting screen, when displaying setting screen expect for initial screen.

    [SELECT] key (REVERSE) : Switches operation screen or MODE screen in reverse direction
    [CANCEL] key : While setting/changing of parameter (dot at first digit of setting value blinks), setting/changing can be canceled. After the cancelation, dot blinking of setting value turns OFF.
13. [A/M] key : Switches AUTO/MAN of output 1/output 2. Operates while displaying operation screen. It cannot be operated while displaying setting screen.
    [>] key : Moves cursor for setting parameter to the right when setting numeric value on the parameter setting screen. It cannot be operated while displaying operation screen.
14. [∨] key : Decreases (decrement/changing of parameter) setting parameter and initial screen of each setting screen.
15. [∧] key : Increases (increment/changing of parameter) setting parameter and initial screen of each setting screen.
16. [ENTER] key : Registers setting / changing parameter. After the registration , dot blinking of setting value of setting/ changing parameter turns OFF.
    [SELECT] key: Switches operation screen and MODE screen to the forward direction.

INPUT SPECIFICATIONS

Input type: Thermocouple
B, R, S, N, K, E, J, T, U, L, WRe5-WRe26, W-WRe26, Platinel II, PtRh40-PtRh20, Au-Pt
DC voltage
±20mV, ±100mV, ±5V, ±10V
Resistance thermometer
Pt100, JPt100, Pt50

Measuring range: Thermocouple 16 ranges, DC voltage 4 ranges, DC voltage 1 range
Resistance thermometer 5 ranges

Temperature unit: °C

Accuracy rating: ±0.1% of FS ± 1 digit of measuring range
For details, refer to "measuring ranges and accuracy ratings"

Reference junction compensation accuracy:
±1.0°C (ambient temperature 23°C ± 10°)
±2.0°C (temperatures other than above)

Sampling rate: Approx. 0.1 seconds

Burnout: Upper limit burnout is provided for thermocouple, resistance thermometer and DC voltage (20mA) only as standard.
Output 1 produces PV abnormal output and output 2 is fixed to 0% when burnout occurs.
Upper limit alarm event is output.

Input impedance: Thermocouple 1MΩ or more
DC voltage Approx. 1MΩ

Allowable signal source resistance:
Thermocouple 100Ω or less
DC voltage (mV) 100Ω or less
DC voltage (V) 300Ω or less

Allowable wire resistance:
Resistance thermometer 10Ω/1 wire or less (resistance of 3 wires should be equal to one another)

Resistance thermometer measurement current:
Approx. 1mA

Maximum allowable input:
Thermocouple ±10VDC
DC Voltage (mV) ±10V DC
DC Voltage (V) ±20V DC
Resistance thermometer ±5V DC

Maximum common mode voltage:
30VAC

Common mode rejection ratio:
130dB or more (50/60Hz)

Series mode rejection ratio:
50dB or more (50/60Hz)

CONTROL SPECIFICATIONS

Control interval: Approx. 0.1 seconds

Output type: ON-OFF pulse output, ON-OFF servo output (DB650 and DB670 only), Current output, SSR drive pulse output, Voltage output

ON-OFF pulse type:
- Contact type: 1a contact
- Pulse cycle: Approx. 1 to 180 seconds
- Contact capacity: Resistive load 240VAC 3A, 30VDC 3A
  Inductive load 240VAC 1.5A, 30VDC 1.5A
  Minimum load 5VDC 10mA

ON-OFF servo output type:
- Contact type: 1a contact
- Feedback resistance: 100Ω to 2KΩ
- Contact capacity: Resistive load 240VAC 3A, 30VDC 3A
  Inductive load 40VAC 1.5A, 30VDC 1.5A
  Minimum load 5VDC 10mA

Current output type:
- Output specification: 4 to 20mA D
- Load resistance: 600Ω or less

SSR drive pulse output type:
- Pulse cycle: Approx. 1 to 180 seconds
- Output specification: ON 12V DC ±20% (load current 21mA or less)
  OFF 0.8V DC or less

Voltage output type:
- Output specification: 0 to 10V DC
- Output resistance: Approx. 10Ω
- Load resistance: 50KΩ or more

Specification with 2 outputs:
- Output type: Any combination between ON-OFF pulse, output, current output, SSR drive pluse output and voltage output is possible.
- Insulation: Non-isolated between 2 outputs (ON-OFF pulse output type excluded)
- Control system: Z, PID

DISPLAY SPECIFICATIONS

Display: Segment type LCD(LED backlight)

GENERAL SPECIFICATIONS

Rated power voltage:
100 to 240V AC(±10%)
24V AC/DC(±10%)

Rated power supply frequency:
50/60Hz(±2%)

Maximum power consumption:

100 to 240V AC (without option)	DB630	100V AC 4VA 240V AC 5VA
	DB650	100V AC 4VA 240V AC 6VA
	DB670	100V AC 4VA 240V AC 6VA
100 to 240V AC (with option)	DB630	100V AC 5VA 240V AC 7VA
	DB650	100V AC 7VA 240V AC 10VA
	DB670	100V AC 9VA 240V AC 12VA
24V AC/DC (without option)	DB630	24V AC 3VA 24V DC 2W
	DB650	24V AC 4VA 24V DC 3W
	DB670	24V AC 4VA 24V DC 3W
24V AC/DC (with option)	DB630	24V AC 4VA 24V DC 3W
	DB650	24V AC 7VA 24V DC 5W
	DB670	24V AC 8VA 24V DC 6W

Countermeasure against power failure:
Store setting contents in non-volatile memory. (Rewrite: 1 million times)

Insulation resistance:
Between the primary and secondary terminals
20MΩ or more (500V DC)
*Primary terminal: Power terminal (100 to 240V AC) EV1 to 4 output terminals (relay output), ON-OFF pulse output terminal (relay output), ON-OFF servo output terminal (M3,M2,M1)
Secondary terminal: Power terminal (24V AC/DC), all terminals expect primary terminals

Withstand voltage: Between the primary and secondary terminals
1500V AC (1 minute)
*See "Insulation resistance" for the primary and secondary terminals.

Casing: Fire-retardant polycarbonate (UL94V-2)

Color: Gray

Mounting: Panel mounting type

External dimensions:
DB630 48(W) x 48(H) x 88(D)
(Depth from panel surface is 80)
DB650 48(W) x 96(H) x 73(D)
(Depth from panel surface is 65)
DB670 96(W) x 96(H) x 73(D)
(Depth from panel surface is 65)
500VAC (for 1 minute)

Weight:
DB630 (Without option) Approx. 120g
(With option) Approx. 135g
DB650 (Without option) Approx. 150g
(With option) Approx. 230g
DB670 (Without option) Approx. 240g
(With option) Approx. 330g

Terminal screw: M3.0

Engineering port:
DB630 At the bottom of the case
DB650 At the top of the case

REFERENCE OPERATING CONDITIONS

Ambient temperature:
23°C ± 2°C
Ambient humidity: 55%RH ± 5% (no condensation)
Power voltage: 100VAC ± 1%
Power supply frequency:
50/60Hz ± 0.5%
Mounting orientation:
Backward / forward ±3°, laterally ±3°
Installation height: Below 2000m
Vibration: 0m/s²
Shock: 0m/s²
Installation condition:
Single panel mounting (space required around)
Wind: None
External noise: None
Warm up time: At least 30 minutes

NORMAL OPERATING CONDITIONS

Ambient temperature:
-10°C to 50°C (-10°C to 40°C for close installation)
Maximum ambient humidity (ambient temperature -10 to 31°C):
90%RH (no condensation)
Maximum ambient humidity (ambient temperature 31 to 50°C):
90 to 50%RH (no condensation)
*Decreases linearly from 90% RH at 31°C, or to 50% RH at 50°C.
Minimum ambient humidity:
20%RH
Power voltage: 100 to 240V AC 90 to 264V AC
24V AC/DC 21.6 to 26.4V AC/DC
Power supply frequency:
50/60Hz ± 2%
Mounting orientation:
Backward/forward ±10°, laterally ±10°
Installation height: Below 2000m
Vibration: 0m/s²
Shock: 0m/s²
Installation condition:
Panel mounting(space above and below)
External noise: None
Ambient temperature variation ratio:
10°C/hour or less

TRANSPORT CONDITIONS

Ambient temperature:
-20°C to 60°C
Ambient humidity: 5 to 95%RH (no condensation)
Vibration: 4.9m/s² or less (10 to 60Hz)
Shock: 392m/s² or less (under factory packing condition)

STORAGE CONDITIONS

Ambient temperature:
-20°C to 60°C
*10 to 30°C for long-term storage
Ambient humidity: 5 to 95%RH (no condensation)
Vibration: 0m/s²
Shock: 0m/s² (under factory packing condition)

STANDARD

Safety: EN61010-1 (CE marking)
UL61010-1 2nd edition (UL)
CAN/CSA C22.2 No.61010-1(c-UL)
Setup category: CAT.II, pollution degree: 2
EMC applicable:
CE marking EN61326-1 ClassA Table2
EN5011 ClassA Group1
EN61000-3-2 ClassA
EN61000-3-3
*Indication or output value varies by the amount equivalent to ±10% of FS or ±2mV, whichever is larger, during testing.
Structure: Casing protection
IEC60529 IP65 equivalent
(Unapplied for close installation)
(CE, UL, c-UL are contormity pending)

OPTIONS

Transmission signal output (option)

Output point: 1 point
Output signal: 4 to 20mA DC (load resistance 400Ω or less)
0 to 1V DC (load resistance 50kΩ or more)
0 to 10V DC (load resistance 50kΩ or more)
Accuracy: ±0.3% of full scale
Output updating interval:
Approx. 0.1 seconds
Insulation: Non-isolated between the adjustment output 1 and 2
(ON-OFF pulse output type excluded)

Remote signal input (option)

Input point: 1 point
Input signal: 4 to 20mA DC (Input impedance Approx. 50Ω)
0 to 1V DC (Input impedance Approx. 500kΩ)
0 to10V DC (Input impedance Approx.100kΩ)
Maximum allowable input:
DC current ±30mA or less
±1.5V DC or less
DC voltage ±20V DC or less
Accuracy: ±0.3% of full scale ± 1digit
Sampling rate: Approx. 0.1 seconds
External signal switch:
R/L (Remote/Local)

Communications interface (option)

Input point: DB630 5 points maximum, COM shared
DB650 7 points maximum, COM shared
DB670 7 points maximum, COM shared
Protocol: MODBUS-RTU, MODBUS-ASCII, Private (used for digital transmission/digital remote input)
Function: Host communication/digital transmission/ digital remote input

Alarm specifications (option)

Number of alarm points:
2 points
Alarm types: Absolute value alarm, deviation alarm, absolute value deviation alarm, set point alarm, output value alarm, heater disconnection alarm (only for the case adjustment output 1 uses ON-OFF pulse output or SSR drive pulse output), timer 1, timer 2, FAIL

Heater disconnection detection (option)

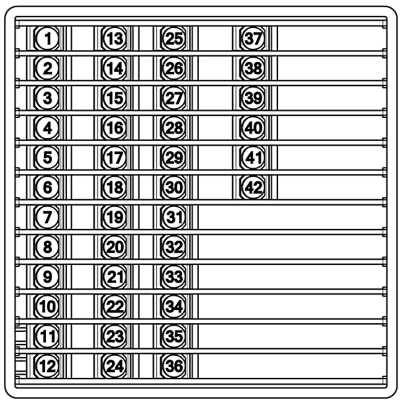
Functions: Measure heater current using an external current transformer (CT) to detect disconnection.
Input points: 1 point
Input signals: 5.0-50.0A (50 / 60Hz)
*Specified external current transformer (CT) required.
Accuracys: ±5.0% of FS ±1digit

External signal input (option)

Input point: DB630 5 points maximum, COM shared
DB650 7 points maximum, COM shared
DB670 7 points maximum, COM shared
Input signal: No voltage contact
External contact capacity:
5V DC 2mA
Function: Constant value operation RUN/READY switch, AUTO/MAN switch, preset manual, timer 1, timer 2, alarm event reset, execution No. selection, program/constant value operation switch, program operation RUN/STOP switch, program operation ADVANCE, program operation RESET, program pattern selection

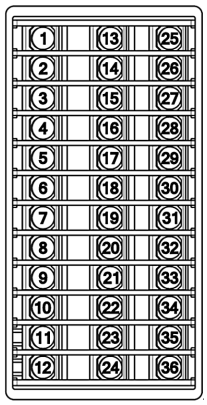
TERMINAL ARRANGEMENT

DB670



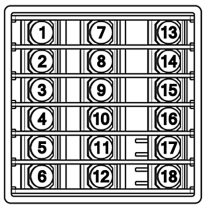
1	Measuring input +		13	Communication RDA	SA	25	EV3		37	Servo M3	
2	Measuring input A+		14	Communication RDB	SB	26	EV3 COM		38	Servo M2	
3	Measuring input B+		15	Communication SDA		27	EV4		39	Servo M1	
4	Measuring input b		16	Communication SDB		28	EV4 COM		40	Servo R1	
5	Control output 1+		17	Communication SG	SG	29	Transmission output +		41	Servo RC	
6	Control output 1-		18	R/L(digital)DI		30	Transmission output -		42	Servo R2	
7	Control output 2+	EV1	19	DI1	EV5	31	Remote input +				
8	Control output 2-	EV1 COM	20	DI2	EV6	32	Remote input -				
9	EV2		21	DI3	EV7	33	R/L(analog)DI				
10	EV2 COM		22	DI4	EV8	34	CT	DI6			
11	Power L		23	DI5	EV9	35	CT	DI7			
12	Power N/-		24	R/L & DI COM	R/L & EV COM	36	R/L & DI COM				

DB650



1	Measuring input +		13	Communication RDA	SA	25	EV3		Servo M3
2	Measuring input A+		14	Communication RDB	SB	26	EV3 COM		Servo M2
3	Measuring input B+		15	Communication SDA		27	EV4		Servo M1
4	Measuring input b		16	Communication SDB		28	EV4 COM		Servo R1
5	Control output 1+		17	Communication SG	SG	29	Transmission output +		Servo RC
6	Control output 1-		18	R/L(digital)DI		30	Transmission output -		Servo R2
7	Control output 2+	EV1	19	DI1	EV5	31	Remote input +		Transmission output +
8	Control output 2-	EV1 COM	20	DI2	EV6	32	Remote input -		Transmission output -
9	EV2		21	DI3	EV7	33	R/L(analog)DI		Remote input +
10	EV2 COM		22	DI4	EV8	34	CT	DI6	Remote input +
11	Power L/-		23	DI5	EV9	35	CT	DI7	R/L(analog)DI
12	Power N/-		24	R/L & DI COM	R/L & EV COM	36	R/L & DI COM		R/L COM

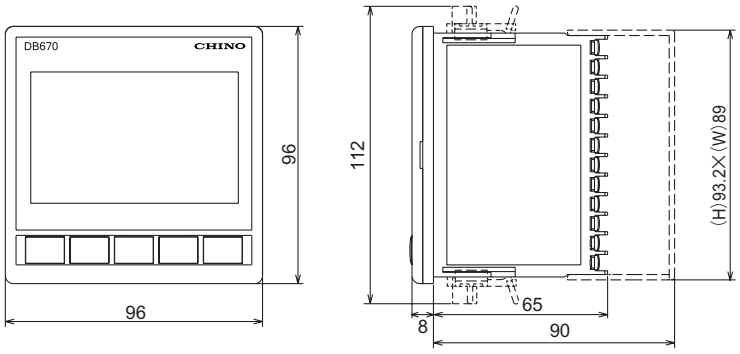
DB630



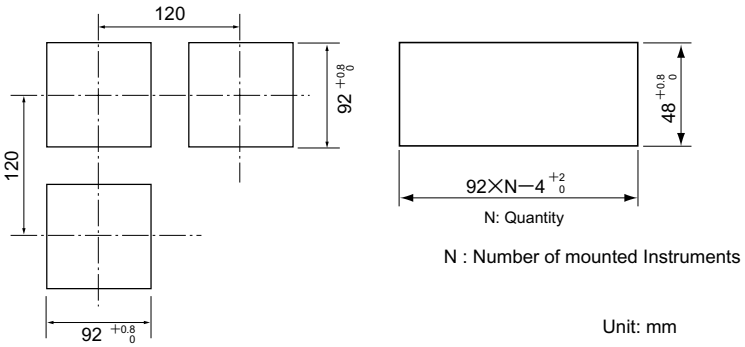
1	Control output 1+	7	Communication SA	DI1	EV5	13	Control output 2+	EV1
2	Control output 1-	8	Communication SB	DI2	EV6	14	Control output 2-	EV1 COM
3	Measuring input +	9	Communication SG	DI3	EV7	15	EV2	
4	Measuring input A+	10	R/L(digital)	DI4	EV8	16	EV2 COM	
5	Measuring input B+	11	DI1	DI5	EV9	17	Power L/-	
6	Measuring input b	12	R/L & DI COM	DI COM	EV COM	18	Power N/-	

■EXTENAL DIMENSIONS

●DB670



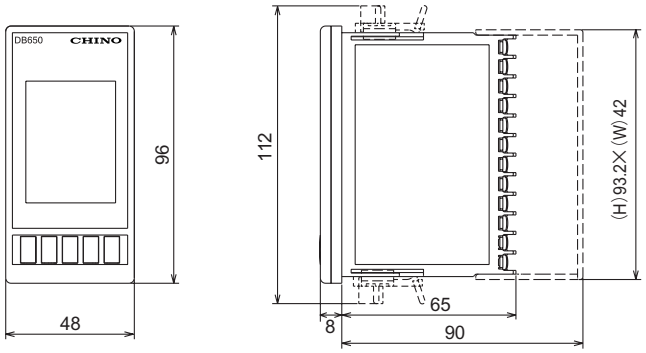
●PANEL CUTOUT



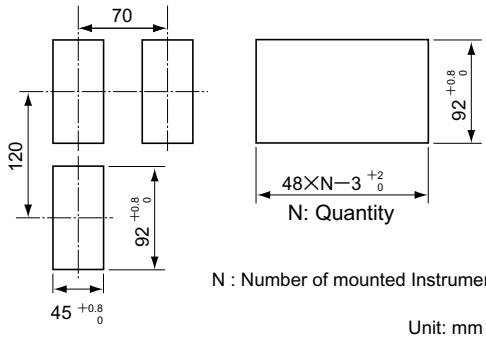
N : Number of mounted Instruments

Unit: mm

●DB650



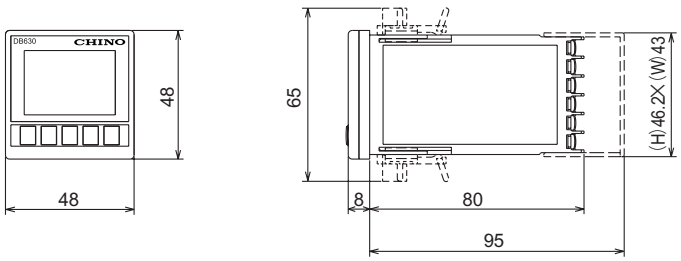
●PANEL CUTOUT



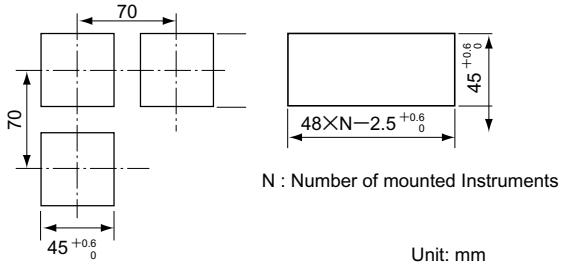
N : Number of mounted Instruments

Unit: mm

●DB630



●PANEL CUTOUT



N : Number of mounted Instruments

Unit: mm

Specifications subject to change without notice. Printed in Japan (I) 2013. 4

CHINO CORPORATION
32-8 KUMANO-CHO,ITABASHI-KU,TOKYO 173-8632
Telephone : +81-3-3956-2171
Facsimile : +81-3-3956-0915
E-mail : inter@chino.co.jp
Website : www.chino.co.jp/