

## **Quick Reference Guide for Model C1M**

This guide offers a summary of key operations, parameter flowcharts, and settings, for convenient reference at the operation site This guide is made for repeated use. Dirt wipes off easily and even notes written with an oil-based felt-tip pen can be removed with an eraser.

If more detailed information on model C1M is needed, refer to the user's manual for installation and configuration (CP-SP-1448E). The most convenient way to configure the C1M is with the Smart Loader Package (model No. SLP-C1FJA\_). Please contact the azbil Group or a distributor for more information.



(1)	Upper display	Shows PV (present temperature, etc.) or items that can be set.
(2)	[MODE] key	Pressing this button shows the operation display. If it is held down for 1 second or longer, the preset operation (initial setting: AUTO/MANUAL selection) can be executed.
(3)	[PARA] key	Switches the display.
(4)	$[<],[\vee],$ and $[\wedge]$ keys	Used for incrementing/decrementing numeric values and performing arithmetic shift operations.
(5)	MAN mode indicator	Lights up in MANUAL mode.
(6)	RDY mode indicator	Lights up in READY (control stop) mode.
(7)	Event indicator	Lights up when the corresponding event output is ON.
(8)	Control output indicator	Lights up when the corresponding control output is ON.
(9)	Status indicator	Lights up according to the setting of the status indicator. (Default: Not used)
(10)	AT indicator	Flashes during AT execution.
(11)	Slope display unit	Shows the operation status during a step operation.
(12)	Lower display	Shows SP (set temperature, etc.) and other settings.
(13)	Loader connector	Connected to the PC using the USB loader cable included with the Smart Loader Package.
(14)	Protective film	Protects the surface. Please remove the protective film before use.

# Flowchart of Key Operations and Displays



○ Some items are not displayed depending on the availability of optional functions, model number, display setup ([]] to []] and user level ([]]. ○ Pressing the [PARA] key while changing the setting of an item will cancel the change, and the next item will be displayed.



## **Operation Examples**



upper display and The display flashes only RE\_F on the lower in RUN and AUTO modes. display. REoF and only if there is no PV input error. 16 PARA < V ^ If the control method is e[para] < 🗸 🔨 🔿 Also, if "AT stop/start" is ON/OFF control and if bit set as the DI assignment, 3 (AT stop/start display) the display does not flash of [ ]] (mode display and the setting cannot setup) is "0" (disabled). be changed using the the parameter and keys. setting are not displayed. 5 Press [ $\land$ ] once. 6 Do not press any REan flashes on the key for 2 s. ALan lower display. stops flashing and AT begins. ALON . REDA During AT, the AT indicator flashes and repeatedly. When AT and the calculation of PID constants are done. the indicator turns off. During the AT process, if the mode is changed to READY or MANUAL, if PV input is faulty, or if a power failure occurs, AT stops automatically without changing the PID constants. AT can also be stopped by changing the setting from REon to REoF (return to step 3 above). Setup of the SP 2 Press [MODE] Check that the operation display once to show the shows the SP. operation display. (If not, press [PARA] several times until it is displayed). MODE PARA < V 3 4 Press [ $\leq$ ], [ $\vee$ ], or Do not press any  $[\Lambda]$ . The rightmost key for 2 s. The new digit on the lower value stops flashing Ĩ display flashes and and is now set. its value can be If [MODE] is pressed while changed. Change the setting is flashing, the ra < / to the desired SP by status returns to that of pressing [ $\leq$ ], [ $\vee$ ], step 1. or  $[\Lambda]$ . Flashing means the setting has not been finalized.

> If the SP limit function is enabled, a value exceeding the limit cannot be set. If you need to change the value. change the SP limit first.

Red letters : Initial setup procedure Blue letters : Procedure during operation

Press [MODE]

once to show the

operation display.

Press [PARA] twice.

RE is shown on the

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3

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#### **Execution of auto tuning (AT)**

AT forces ON/OFF of the MV a number of times (a limit cycle) to calculate PID values. Check that this operation does not create any problems for the associated equipment before executing AT.

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4

n.

RULo.

~ < V ^

Hold down [PARA]

for 2 s or longer. The

screen for specifying

parameters is shown

with A--n on the

Press [ $\vee$ ] or [ $\wedge$ ].

upper display.

REoF flashes.

For highlighted steps (e.g., 4), the following precaution applies: • If keys are locked, the setting does not flash and cannot be changed. To change the setting, cancel the key lock first.

RUN/READY n	node selection	Setup of event value
arbit     Press [MODE]       once to show the operation display.	2 Hold down [PARA] for 2 s or longer. The screen for specifying parameters is shown with Rō on the upper display.	1Press [MODE] once to show the operation display.2Hold down [PARA] for 2 s or longer. The screen for specifying parameters is shown with Rō on the upper display.
3       Press [PARA] once.         ctbi       r-rr is shown on the upper display and rdy or rUn is shown on the lower display.         The current mode is indicated by rUn (RUN) or rdy (READY).         5       Press [∨] or [∧] to select rUn or rdy.	4       Press [∨] or [∧].         The lower display       Press [∨] or [∧].         The lower display flashes.       If "RUN/READY selection" is set as the DI assignment, the display does not flash and the mode cannot be changed using the keys.         6       Do not press any key for 2 s. The new	3       Press [PARA] several times. E   is shown on the upper display and □ on the lower display.       Press [<], [∨], or [∧]. The rightmost digit on the lower display means that the event main setting is "0."
	value stops flashing and the mode is now set.	5 Do not press any key for 2 s. The new value stops flashing and is now set. If [MODE] is pressed while the setting is flashing, the status returns to that of step 1.
Setup of I	PID values	
1       Press [MODE] once to show the operation display.         association (isplay)       Press [PARA] several times. P-1 (proportional band) is shown on the upper display and the present setting is shown on the lower display.	<ul> <li>2</li> <li>But on the screen for specifying parameters is shown with Rn on the upper display.</li> <li>4</li> <li>Press [ &lt; ], [ ∨ ], or [ ∧ ]. The rightmost digit on the lower display flashes and its value can be changed.</li> <li>Change to the desired P value by</li> </ul>	Use E2 to specify the setting for event 2, and E∃ for event 3.
If the control method	pressing $[<], [\lor],$	Use E군H님 to specify the hysteresis setting for event 2, and E∃H님 for event 3.
<ul> <li>Do not press any key and is now set.</li> <li>If [MODE] is pressed while t step 1.</li> </ul>	Flashing means the setting has not been finalized. The setting range of the proportional band is from 0.1 to 999.9 %. for 2 s. The new value stops flashing he setting is flashing, the status returns to that of	Memo

Use | - | for specifying the integral time (0–9999 s) and d- | for the derivative time (0–9999 s).

## Parameters

	operation settings								
Display Left: upper display Right: lower display		ltem	Contents	Initial value	Setting				
Value (PV)	Value (SP)	SP (target value)	SP low limit to SP high limit	0					
LSP   *1	LSP	LSP No. (the last digit)	1 to LSP system group (max. 8)	1					
5E, I- *1	Step remaining time	Step No., step remaining time	Not applicable Step No. indicates whether the process is ramp-up, ramp-down, or soak.	-					
oUt	Value	MV (Manipulated Variable)	-10.0 to +110.0 % Setting is enabled in MANUAL mode (value flashiing)	-					
HERE	Value	Heat MV (Manipulated Variable)	Not applicable.	-					
Cool	Value	Cool MV (Manipulated Variable)	-10.0 to +110.0 %	-					
Value (PV)	AF 1+1	AT progress display (the last digit)	Not applicable.	-					
EE I	Value	CT current value 1	Not applicable.	-					
CF5	Value	CT current value 2	Not applicable.	-					
EI	Value	Internal Event 1 main setting	-1999 to +9999 U or 0 to 9999 U	0					
E (Sb	Value	Internal Event 1 sub-setting		0					
E   *1	Value	Timer remaining time 1	Not applicable. Upper display: ON delay / OFF delay distinction is displayed.	-					
E5	Value	Internal Event 2 main setting	Same as Internal Event 1 main setting	0					
E256	Value	Internal Event 2 sub-setting	Same as Internal Event 1 sub-setting	0					
F5 +1	Value	Timer remaining time 2	Same as Timer remaining time 1	-					
EB	Value	Internal Event 3 main setting	Same as Internal Event 1 main setting	0					
EBSb	Value	Internal Event 3 sub-setting	Same as Internal Event 1 sub-setting	0					
£3*1	Value	Timer remaining time 3	Same as Timer remaining time 1	-					
1 Display	example								

### **Parameter settings**

nodE	[ Mode bank ]			
Display	Item	Contents	Initial value	Setting
Rñ	AUTO/MANUAL	RUEs: AUTO mode nRn: MANUAL mode	AUTO	
rr	RUN/READY	rUn: RUN mode rdy: READY mode	RUN	
RE	AT execution/stop instructions	REpF: AT stop REpn: AT execution	AT stop	
AFEr	Auto tuning error	EnpF: Normal Enpn: Abnormal	Normal	
dollt	Release all DO latchs	Lton: Latch continue LtoF: Latch release	Latch continue	
Udb, I	User-defined bit	dbaF: OFF dban: ON	OFF	
_				

#### SP bank SP

Display	Item	Contents	Initial value	Setting
SP- 1~ SP-8	SP (for LSP1 to 8)	SP low limit to SP high limit	0	
Pid I~ Pid8	PID group number (for LSP1 to 8)	1 to 8	1	
nāP, I~ nāPB	Ramp (for LSP1 to 8)	0 to 9999	0	
tiñ, l∼ tiñB	Soak time (for LSP1 to 8)	0.0 to 999.9 or 0 to 9999	0	

#### [Event bank] Eu

	_						
Display		Item	Contents	Initial value	Setting		
E I~ES		Internal Event 1 to 5 main setting	-1999 to +9999 U or 0 to 9999 U*	0			
E (Sb ~ ESSb		Internal Event 1 to 5 sub-setting		0			
E (H9 ~ ESH9		Internal Event 1 to 5 hysteresis	0 to 9999*	5			
E lon ~ ESon	•	Internal Event 1 to 5 ON delay time	0.0 to 999.9 or 0 to 9999	0			
E IoF ~ ESpF	۲	Internal Event 1 to 5 OFF delay time		0			
The number of decimal places changes according to the operation type of the internal event.							

of decimal places changes according to the operation type of the internal event.

#### PId [PID bank]

Display		Item	Contents	Initial value	Setting			
P-1~P-8		Proportional band (1 to 8)	0.1 to 999.9 %	5.0				
1 - 1 ~ 1 -8		Integration time (1 to 8)	0 to 9999 s (No integral control action when set at "0")*	120				
d- 1~ d-8		Derivative time (1 to 8)	0 to 9999 s (No derivative control action when set at "0")*	30				
rE-I~rE-B		Manual reset (1 to 8)	-10.0 to +110.0 %	50.0				
oL - 1 ~ oL -8	•	MV low limit (1 to 8)	-10.0 to +110.0 %	0.0				
oH- 1 ~ oH-8	•	MV high limit (1 to 8)	-10.0 to +110.0 %	100.0				
P- IC ~ P-BC		Cool-side proportional band (1 to 8)	0.1 to 999.9 %	5.0				
1 - IC ~ I -8C		Cool-side integration time (1 to 8)	0 to 9999 s (No integral control action when set at "0")*	120				
d- 10 ~ d-80		Cool-side derivative time (1 to 8)	0 to 9999 s (No derivative control action when set at "0")*	30				
oL, IC ~ oL,8C	۰	Cool-side MV low limit (1 to 8)	-10.0 to +110.0 %	0.0				
оН, IC ~ оНВС	۲	Cool-side MV high limit (1 to 8)	-10.0 to +110.0 %	100.0				
' The number o	The number of decimal places changes according to the setting for [23 (integral time and derivative time decimal point position).							

#### PARB [ Parameter bank ]

	Display		ltem	Contents	Initial value	Setting
	Ebrt		Control method	0: ON/OFF control 1: Fixed PID	0 or 1	
Contro	At,oL		MV low limit at AT	-10.0 to +110.0 %	0.0	
	Rt,oH		MV high limit at AT	-10.0 to +110.0 %	100.0	
ᅙ	di FF		ON/OFF control differential	0 to 9999 U	5	
	oFFS	۰	ON/OFF control operating point offset	-1999 to +9999 U	0	
	FL		PV filter	0.0 to 120.0 s	0.0	
PV	r A	۰	PV ratio	0.001 to 9.999	1.000	
	Ы		PV bias	-1999 to +9999 U	0	
	C 4U	•	Time proportional cycle unit 1	0: Unit of 1 s 1: Fixed at 0.5 s	0	
				2: Fixed at 0.25 s 3: Fixed at 0.1 s		
	EA		Time proportional cycle 1	5 to 120 s or 1 to 120 s (5 to 120 s when output includes relay output)	10 or 2	
Timepro	EPo		Time proportional minimum ON/OFF time 1	Set value: 0 H either one of the conditions below is true, 250 ms applies. Otherwise, 1 ms applies. WHI is set for relay output or event output in DO assignment. Time proportional cycle is 10 s or longer. Set value: 1–250 H WI is use for relay output or event output in DO assignment, 1–49:50 ms applies. SO-250 The set value applies.	0	
ortio	1905	•	Time proportional cycle unit 2	0: Unit of 1 s 1: Fixed at 0.5 s 2: Fixed at 0.25 s 3: Fixed at 0.1 s	0	
nal out	645		Time proportional cycle 2	5 to 120 s or 1 to 120 s (5 to 120 s when output includes relay output)	10 or 2	
utput	ΕPα2		Time proportional minimum ONVOFF time 2	Set value: 0 H either one of the conditions below is true, 250 ms applies. Otherwise, 1 ms applies. NW2 is set for relay output or event output in DO assignment. Time proportional cycle is 10 s or longer. Set value: -250 If MV2 is set for relay output or event output in DO assignment. 1–49: 50 ms applies.	0	
	EPES	•	Time proportional cycle mode	0: Controllability aiming type 1: Operation end service life aiming type (Only ON/OFF operation within Time proportional cycle)	0 or 1	
c n	SPU	٠	SP up ramp (U/min)	0.0 to 999.9 U (No ramp when set at 0.0 U)	0.0	
L 3P	SPd	٠	SP down ramp (U/min)	<u> </u>	0.0	

U (unit): The smallest unit of an industrial quantity (°C, Pa, L/min, etc.) of a PV range

#### [EE] [Extended tuning bank]

Display		Item	Contents	Initial value	Setting
REES		AT type	0: Normal 1: Immediate response 2: Stable*	1	
SPL 9	•	SP lag constant	0.0 to 999.9	0.0	
AE-P	•	AT Proportional Band adjust	0.00 to 99.99	1.00	
RE-1	•	AT Integral time adjust	0.00 to 99.99	1.00	
AE-d	•	AT Derivative time adjust	0.00 to 99.99	1.00	
AFbF	•	Type of MV switching point at AT	0: Default (2/3 of initial PV and SP) 1: SP 2: PV	0	
AFbn	•	MV switching point PV in AT	-1999 to +9999 U	0	
CerA	•	Control algorithm	0: PID (Conventional PID) 1: Ra-PID (High-performance PID)	0	
CL 9	•	Cooling Gain	-10.0 to +110.0 %	30.0	

\*Normal = standard control characteristics, immediate response = control with quick response to external disturbance, stable = control with less PV fluctuation

: Essential parameters for PV measurement and control

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Cont

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Key

- : Basic parameters
- : Required when using optional functions

### Setup bank, etc., settings

Display		Item	Contents	Initial	Setting
0.01		PV input range type	For details, refer to the PV Input Range Table	Depends	
				on the model	
C 05		Temperature unit	0: Celsius (°C) 1: Fabrenbeit (°F)	0	
C 03	۰	Reference junction compensation (Cold	0: Performed (internal)	0	
C 04		Decimal point position	0: No decimal point	0	
E 05		PV range low limit	1 to 3: 1 to 3 digits below decimal point When the PV input type is DC voltage/DC current	0	
C 06		PV range high limit	-1999 to +9999 U	1000	
C 01 C 08	•	SP low limit SP bigh limit	PV input range low limit to PV input range high limit	-	
C 09	•	PV square root extraction dropout	0.0 to 100.0 % (PV square root extraction is not performed	0.0	
F 14		Control action (Direct/Reverse)	when set at 0.0.) 0: Heat control (Reverse action)	0	
			1: Cool control (Direct action)		
LB	•	Output operation at PV alarm	0: Control calculation is continued. 1: Output at PV alarm is output.	0	
C 16	•	Output at PV alarm	-10.0 to +110.0 %	0.0	
C 18	•	Output at READY (Heat) Output at READY (Cool)	-10.0 to +110.0 %	0.0	
E 19	٠	Output operation at changing AUTO/	0: Bumpless transfer 1: Preset	0	
05 0	•	Preset MANUAL value	-10.0 to +110.0 %	0.0 or 50.0	
C 21		Initial output type (mode) of PID control	0: Auto 1: Not initialized 2: Initialized	0	
C 55	•	Initial output of PID control	-10.0 to +110.0 %	0.0 or 50.0	
C 23	•	Integral time and derivative time decimal	0: XXXX (No decimal point) 1: XXX.X	0	
5 35		point position	2: XX.XX 3: X.XXX		
C 28	H	Heat/Cool control dead zone	-100.0 to +100.0 %	0.0	
06 3		LSP system group	1 to 4	1	-
1 31		SP ramp type	2: Step operation: When the power is turned ON again, the	0	
			step operation is stopped (READY) 3: Step operation: When the power is turned ON again. the		
5 33			step operation is reset		
L 32 [ 33		SP ramp unit STEP time unit	0: 0.1 s 1: 0.1 U/min 2: 0.1 U/h 0: 0.1 s 1: 1 s 2: 1 min	2	
6 34		STEP PV start	0: None 1: Up start 2: Down start	0	
C 35 C 36	+	STEP loop CT1 operation type	0: Stop 1: Loop 2: Final step continued 0: Heater burnout detection	0	
r 27		CT1 autout	1: Current value measurement		
1 31		C11 output	2 to 4: Event output 1 to 2	0	
86.3	F	CT1 measurement wait time	30 to 300 ms	30	
6 40	+	CT2 output	Same as CT1	0	
E 41		CT2 measurement wait time	Same as CT1	30	
L 42 C 43	+	Control output 1 type	0: MV 1: Heat MV 2: Cool MV 3: PV	0	
			4: PV before ratio, bias, and filter 5: SP 6: Deviation 7: CT1 current value		
			8: CT2 current value 9: Invalid 10: SP+MV		
E 44		Control output 1 scaling low limit	-1999 to +9999 U	0.0	
E 45	_	Control output 1 scaling high limit	0+ 0000 ((())) +	100.0	
E 41	+	Control output 2 range	Same as control output 1	1	
E 48		Control output 2 type	Same as control output 1	3	
C 50	+	Control output 2 scaling low limit Control output 2 scaling high limit	Same as control output 1	1000	
E 51		Control output 2 MV scaling bandwidth	Same as control output 1	200	
1.64		Communication type	3: PLC-Link communication	0	
C 65		Station address	0 to 127 (Communication is disabled when set at "0".)	0	
C 67		Data format (Data length)	0:7 bits 1:8 bits	1	
C 68		Data format (Parity)	0: Even parity 1: Odd parity 2: None parity	0	
C 10		1 1373 7070037 (\$700 007)	Or 1 bit 1: 7 bits	0	
	•	Communication minimum response time	0:1 bit 1:2 bits 1 to 250 ms	0	
E ]	•	Communication minimum response time Key operation type	0:1 bit 1:2 bits 1 to 250 ms 0: Standard type 1: Special type 0: channel 1: AUTO (MANUAL selection	0	
C 11 C 12	•	Communication minimum response time Key operation type [MODE] key function	0: 1 bit 1: 2 bits 1 to 250 ms 0: Standard type 1: Special type 0: Invalid 1: AUTO/MANUAL selection 2: RUN/READY selection	0 0 3 0 1	
C 11 C 12	•	Data format (Stop bit) Communication minimum response time Key operation type [MODE] key function	0: 1 bit 1: 2 bits 10 250 ms 0: Standard type 1: Special type 0: Invalid 1: AUTO/MANUAL selection 2: RUN/READY selection 3: AT execution/stop instructions 4: LSP group selection 5: Release all DD latches	0 3 0 1	
E 11 E 12	•	Data format (Stop bit) Communication minimum response time Key operation type (MODE) key function	0: 1 bit 1 : 2 bits 11 to 250 ms 0: Standard type 1: Special type 0: Invalid 1: AUTO/MANUAL selection 2: RUNREADV selection 3: AT execution/stop instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: User-defined bit 1 selection 8: Invalid BP ch 41107/MANUAL Index Vision 4: 11	0 3 0 1 255	
C 11 C 12 C 13	•	Data format (stop bit) Communication minimum response time Key operation type [MODE] key function MODE display setup (sum of the weighting)	0: 1 bit 1 : 2 bits 10 : 25 m display 1 : 5 pecial type 0: Standard type 1 : 5 pecial type 0: randal 1 : AUTO/MANUAL selection 2: RUV/READY selection 3: AT execution/stop instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: 2 User - edined bit 1: selection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RUV/READY display (Enabled: +2)	0 3 0 1 255	
0 11 0 12 0 12	•	Jaca Jordan (Sob Jol) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting)	0: 1 bit 1 : 2 bits 1 to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Invalid 1: XUTO/MANUAL selection 2: RUVREADY selection 3: AT execution/top instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: LUS=-defined bit 1 selection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RUVREADY display (Enabled: +2) Bit 2: RUVREADY display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +8)	0 3 0 1 255	
C 12 C 12 C 13		Jora Jorna (Sob pil) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting)	0: 1 bit 1 : 2 bits 11 bit 525 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: read 1: 2 th 2 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	0 3 0 1	
11 3 97 3 97 3 97 3 97 3	•	Uda Jordan (stop bit) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting)	0: 1 bit 1 : 2 bits 11 to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: rowald 1: AUTO/MANUAL selection 2: RU/NEADY selection 3: AT execution/top Instructions 4: USP group selection 5: Release all Do latches 6: forwald 7: Use-defined bit 1: Staff and 1: Bit 1: RU/NEADY display (Enabled: +1) Bit 1: RU/NEADY display (Enabled: +2) Bit 2: Invalid Bit 2: Auto-defined bit 1: OA/UFF display (Enabled: +32) Bit 5: to 7: Invalid	0 0 3 0 1 255	
11 1 5 2 5 2 5 7 7 7 7 7 7		Uda Jordan (Sob pil) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) [Sum of the weighting)	0: 1 bit 1 : 2 bits 11 to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: rowald 1: AUTO/MANUAL selection 2: RU/NEADY selection 3: AT execution/dop Instructions 4: LSP group selection 5: Release all Do Latches 6: Invalid 7: User defined bit 1 selection 8: Invalid Bit 2: AUTO/MANUAL display (Enabled: +1) Bit 1: RW/NEADY display (Enabled: +2) Bit 2: Invalid Bit 4: Release all Do Latches display (Enabled: +8) Bit 4: Release all Do Latches display (Enabled: +16) Bit 5: Group (Enabled: +1) Bit 0: FV display (Enabled: +1) Bit 0: FV display (Enabled: +1) Bit 1: 59 display (Enabled: +1)	0 3 0 1 255 15	
11 1 5 5 5 7 9 19 10 10 10 10 10 10 10 10 10 10 10 10 10	•	Uda Jordan (Sob pil) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting)	0: 1 bit 1: 2 bits 1: to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: rowald 1: 4: 10/00 ANUAL selection 2: RUNREADY selection 3: All sectors of the selection 8: Invalid 8: A Towardshirot And Lingbard the selection 8: Invalid Bit 2: All And AnuAL display (Enabled: -1) Bit 1: RUNREADY display (Enabled: +2) Bit 2: Invalid Bit 3: All Stop/Start display (Enabled: +8) Bit 3: All Stop/Start display (Enabled: +16) Bit 5: Stop/Start display (Enabled: +12) Bit 1: 59 display (Enabled: +1) Bit 1: 59 display (Enabled: +12) Bit 1: 59 display (Enabled: +2) Bit 1: 59 display (Enabled: +2) Bit 1: 59 display (Enabled: +2) Bit 2: Stop/Start display (Enabled: +2) Bit 2: Stop/Stop/Start display (Enabled: +2) Bit 2: Stop/Start display	0 3 0 1 255	
C 73 C 73 C 74 C 74		Jaca Jordan (Sob Bil) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup	0: 1 bit 1: 2 bits 11 bit 2: 5 bits 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Standard type 1: Special type 3: AT execution/top instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: LVB-redefined bit 1: Stelection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RUN/REA/V display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +8) Bit 3: AT Stop/Start display (Enabled: +8) Bit 3: LSV endefined bit 1: NU/FEA/VF display (Enabled: +32) Bit 6: VDr display (Enabled: +1) Bit 1: SUSPE adding (Enabled: +1) Bit 1: SUSPE adding (Enabled: +1) Bit 1: Stop Stoppe (Enabled: +1) Bit 3: Stoppe (Enabled: +1) Bit 3: Stoppe (Enabled: +1)	0 3 0 1 255 15	
C 79 C 79 C 79 C 79 C 79	•	Uda Jordan (Sob Dif) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting)	0: 1 bit 1 : 2 bits 1 to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Standard type 1: Special type 3: AT execution/top instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: LSP-edfende bit 1 selection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RUNREADV selection 4: Bit 3: AT Stop/Start display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +2) Bit 3: LSP of group wither bit 1: ON/CF display (Enabled: +2) Bit 5: User defme bit 1: ON/CF display (Enabled: +2) Bit 5: User defme bit 1: ON/CF display (Enabled: +2) Bit 5: User defme bit 1: ON/CF display (Enabled: +2) Bit 5: User defme bit 1: ON/CF display (Enabled: +2) Bit 5: User defme umber display (Enabled: +4) Bit 1: SP resplay (Enabled: +1) Bit 0: PM display (Enabled: +1) Bit 0: PM display (Enabled: +2) Bit 0: ON/ display (Enabled: +2) Bit 0: ON/ display (Enabled: +2) Bit 0: ON/ display (Enabled: +2) Bit 2: LNgal down of the display (Enabled: +2) Bit 3: LNgal down of the disp	0 3 0 1 255 15	
с 12 с 12 с 13 с 13		Und a formanication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting)	0: 1 bit 1 : 2 bits 11 to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Namid 1: 4XU70MANUA selection 2: RUVREADY selection 3: All execution/topinstructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: LBV=redefined bit 1 selection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +2) Bit 1: RUVREADY display (Enabled: +2) Bit 1: RUVREADY display (Enabled: +8) Bit 4: Release all DO latches display (Enabled: +8) Bit 4: Subser defined bit 1: OV/CFF display (Enabled: +22) Bit 0: DV and type display (Enabled: +2) Bit 0: CPV display (Enabled: +2) Bit 0: CPV display (Enabled: +2) Bit 1: Net MEADY (Enabled: +1) Bit 1: Net Micro MV display (Enabled: +4) Bit 1: Net Micro MV display (Enabled: +2) Bit 1: Net Micro MV display (Enabled: +4) Bit 3: AT providi	0 3 0 1 255 15	
с 13 с 13 с 13 с 13 с 13 с 14 с 15 с 15		Unda Johnak (Sob pill) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup	0: 1 bit 1 : 2 bits 11 to 250 ms 1: 50 - 50 ms 1: 50 - 50 ms 2: RU/READY selection 2: RU/READY selection 2: RU/READY selection 3: AT execution/story instructions 4: L59 group selection 5: Release all DO latches 6: hundl at 7. User defined bit 1: selection 8: invalid Bit 1: RU/READY display (Enabled: +2) Bit 1: RU/READY display (Enabled: +2) Bit 3: AT Scoop/Start display (Enabled: +8) Bit 3: Stor 4: defined bit 1: ON/CFF display (Enabled: +32) Bit 3: L59 display (Enabled: +1) Bit 1: SP display (Enabled: +2) Bit 3: Dr 7: Invalid Bit 0: CFV display (Enabled: +1) Bit 1: Set display (Enabled: +1) Bit 1: Set display (Enabled: +2) Bit 3: Dr 7: Invalid Bit 0: ON display (Enabled: +2) Bit 3: CF 7: Invalid Bit 1: Heat W/Cook W display (Enabled: +2) Bit 3: AT progress display (Enabled: +2) Bit 3: AT progress display (Enabled: +8) Bit 4: AT Story (Enabled: +8) Bit 4: AT progress display (Enabled: +8) Bit 4: AT progress displ	0 0 3 0 1 255 15 15 0	
C 79 C 79 C 79 C 79 C 79 C 79 C 75 C 76		Unda Johna (Sob pil) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display)	0: 1 bit 1 : 2 bits 11 to 250 ms C: Standard type 1: Special type C: Standard type 1: Special type 2: RU/READY selection 2: RU/READY selection 3: R d'excution/totip instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: User defined bit 1: Selection 8: Invalid Bit 0: AITO/MANUAL display (Enabled: +1) Bit 1: RU/READY display (Enabled: +2) Bit 2: Invalid Bit 0: Ator defined bit 1: ONOFF display (Enabled: +2) Bit 1: Spe display (Enabled: +0) Bit 1: Spe display (Enabled: +1) Bit 1: Heat W/Cool W display (Enabled: +2) Bit 2: Heat W/Cool W display (Enabled: +2)	0 0 3 0 1 255 15 15 0	
C 79 C 79 C 79 C 74 C 75 C 76		Data Jordan (Sob Bir) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Sum of the weighting)	0: 1 bit 1 2 bits 10: 250 m 10:	0 0 1 255 15 0 0 0 0 0	
с 11 с 12 с 13 с 14 с 15 с 15 с 15 с 15		Data Jordan (Sob Dif) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display)	0: 1 bit 1 2 bits 11 to 250 ms 15 a 250 ms 15 a 250 ms 25 RUMARLAY selection 25 RUMARLAY selection 25 RUMARLAY selection 35 RUMARLAY selection 35 RUMARLAY selection 35 RUMARLAY selection 36 RUMARL	0 0 3 0 1 255 15 15 0 0	
сті стр стр стр стр стр стр стр стр стр стр		Data Jordan (Sob Dif) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display)	0: 1 bit 1 2 bits 11 bit 25 m 15 a 25 m 15 a 25 m 15 a 25 m 25 RUMARLY selection 25 RUMARLY selection 25 RUMARLY selection 35 RUMARLY selection 35 RUMARLY selection 35 RUMARLY selection 36 RUMARLY selection 36 RUMARLY selection 36 RUMARLY selection 36 RUMARLY selection 37 RUMARLY selection 38 RUMARLY selection 39 RUMARLY selection 39 RUMARLY selection 39 RUMARLY selection 30 RUMARLY selection 3	0 0 1 255 15 0 0 0	
ст) ст) ст) ст) ст) ст) ст) ст) ст) ст)		Data Jordan (Sob Dif) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) CT input current value display setup	0: 1 bit 1 2 bits 10: 25 m display 10: 25 m display 2: RUMARDV selection 2: RUMREDV selection 2: RUMREDV selection 3: RUMREDV selection 3: RUMREDV selection 3: RUMREDV selection 3: RUMREDV selection 3: RUMREDV selection 8: 0 child 2: 2 bits reddende bit 1 selection 8: Invalid RUMREDV selection 1: RUMREDV display (Enabled: +2) 18: 4: Selection 18: 1 child 1: 2 bits reddende bit 1 ON/OFF display (Enabled: +32) 18: 1 child 1: 2 bits reddende bit 1 ON/OFF display (Enabled: +2) 18: 1 child 1: 2 bits reddende bit 1 ON/OFF display (Enabled: +32) 18: 1 child 1: 2 bits reddended: +10 18: 1 child 1: 2 bits reddended: +10 10: 1 child 1: 2 bits reddended: +10 10: 1 child 1: 2 bits reddended: +10 10: 1 child 1: 2 bits reddended: +10 2: 2 bits redden 1: 1 bits reddended: +10 2: 2 bits redden 1: 1 bits reddended 1: Internal event 1: 1 bits reddended 3: Attrianal event 1: 1 bits reddended 4: Net displayed 3: Attrianal event 1: 1 bits reddended 4: Net displayed 3: Attrianal event 1: 1 bits reddended 4: Net displayed	0 0 3 0 1 255 15 15 0 0 1	
С 11 С 12 С 13 С 13 С 15 С 15 С 15 С 15 С 15		Data Jordan (Sob Dif) Communication minimum response time Key operation type (MODE) key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) WV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) CT input current value display setup (Operation display)	0: 1 bit 1 : 2 bits 11 bit 25 m 11 bit 25 m 12 RUNREDV selection 2. RUNREDV selection 3. RUNREDV selection 3. RUNREDV selection 3. RUNREDV selection 3. RUNNEDV depind price final dect 10 bit 1. RUNREDV depind price final dect 11 Set display (Enabled: +2) 11 Set 3 display (Enabled: +2) 12 Set 3 display (Enabled: +2) 13 Set 3 runvalid 11 Set 4 display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 18 R : 1 reat NV(cond NV display (Enabled: +2) 19 R : 1 reat NV(cond NV display (Enabled: +2) 10 R : 1 reat NV(cond NV display (Enabled: +2) 10 R : 1 reat R =	0 0 3 0 1 1 255 15 15 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	
11 1 51 2 19 2 19 2 19 2 10 2 11 2 11 2 11 2 11 2 11 2 11 2 11		Data Jordan (Stop Bir) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) EV display setup (Operation display) EV display setup (Operation display)	0; 1 bit 1 2 bits 10 250 mi 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Nardl 1: AUTO/MANUAL selection 2: RU/NEADY selection 3: AT execution/stop instructions 4: SP group selection 5: Release all DO latches Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RU/NEADY selection Bit 3: AT Stop/Start display (Enabled: +2) Bit 4: Release all DO latches display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +2) Bit 0: PV display (Enabled: +2) Bit 0: PV display (Enabled: +2) Bit 0: PV display (Enabled: +1) Bit 1: Hart MW/Cool NW display (Enabled: +4) Bit 2: Liser group number display (Enabled: +2) Bit 3: AT progress display (Enabled: +2) Bit 1: Set value of Internal event 1 as displayed 1: Set value of Internal event 1 as displayed 2: Set values of Internal event 1 as displayed 2: Internal event 1 as displayed 3: Internal event 1 as displayed 4: C11 current values is displayed 3: C11 current value	0 0 3 0 1 1 255 15 15 0 0 1 1 0 0 0	
с 11 с 12 с 13 с 13 с 13 с 15 с 15 с 15 с 15 с 15 с 15 с 15 с 17 с 17 с 17 с 17 с 17 с 17 с 13 с 13 с 13 с 13 с 13 с 13 с 13 с 13		Data Jordan (Sob Bid) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) User level	0: 1 bit 1 2 bits 10 2 50 m3 10 2 50 m3 2 Standard type 1: Special type 0: Standard type 1: Special type 0: Standard type 1: Special type 3: AT execution/topinstructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: LWP - edime bit 1: selection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RUN/EADV sights (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +1) Bit 1: RUN/EADV sights (Enabled: +2) Bit 0: CPV display (Enabled: +1) Bit 1: SUR 2: LSP group number display (Enabled: +4) Bit 3: AT grogress display (Enabled: +4) Bit 3: At tor 7: Invalid Bit 3: At tor 7: Invalid Direct displayed 1: Set values of Internal event 1 to 2 are displayed 2: Set values of Internal event 1 to 2 are displayed 2: Set values of Internal event 1 to 2 are displayed 2: Internal event 1 to 2 is displayed 3: CTI current values is displayed 3:	0 0 3 0 1 1 255 15 15 0 0 0 0 0	
с 11 с 12 с 13 с 13 с 13 с 13 с 13 с 15 с 15 с 15 с 15 с 15 с 15 с 16 с 17 с 12 с 12 с 12 с 12 с 13 с 13 с 13 с 13 с 13 с 13 с 13 с 13		Data Jordan (Sob Dif) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) CT input current value display setup (Operation display) User level Status indicator	0: 1 bit 1 2 bits 11 to 250 m 1: 0 250 m	0 0 3 0 1 1 255 15 15 0 0 0 0 0 0	
		Joaa Jordan (Sob Dif) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) CT input current value display setup (Operation display) User level Status indicator	0: 1 bit 1 2 bits 11 bit 25 m 15 c35m display 2. RUMARDV selection 2. RUMREDV selection 3. RUMREDV selection 3. RUMREDV selection 3. RUMREDV selection 3. RUMREDV selection 4. LSP group selection 5. RUMARDV selection Bit 0. RUTO/MANUAL display (Enabled: +1) Bit 1. RUMREDV display (Enabled: +2) Bit 1. RUMREDV display (Enabled: +2) Bit 3. AT Socyfstart display (Enabled: +2) Bit 5. User defined bit 10. NOFF display (Enabled: +2) Bit 5. User defined bit 10. NOFF display (Enabled: +2) Bit 0. PV display (Enabled: +1) Bit 1. Heat WV cool NV display (Enabled: +2) Bit 2. LSP group number display (Enabled: +2) Bit 2. LSP group number display (Enabled: +2) Bit 2. LSP display (Enabled: +1) Bit 1. Heat WV cool NV display (Enabled: +2) Bit 2. Lonald 0. RV displayed 1. Lettor and the displayed 3. Set values of Internal event 1 to 3 are displayed 3. Set values of Internal event 1 to 3 are displayed 3. Set values of Internal event 1 to 3 are displayed 3. Chit displayed 1. CTI to 2. current values are displayed 3. CTI to 2. current values are displayed 4. CTI to 2. Current values are displayed 4. CTI to 2. Current values are displayed 5. RV displayed 4. CTI to 2. Current values are displayed 5. RV displayed 5. RV displayed 5. RV displayed 5. RV displayed 5. RV displayed 6. RV displayed 6. RV displayed 6. RV displayed 6. RV displayed 7. RV displayed 7. RV displayed 7. RV displayed 7. RV d	0 0 3 0 1 1 255 15 15 0 0 0 0 0 0 0	
сті стэ стэ стъ стъ стъ стъ стъ стъ стъ стъ стъ стъ		Data Jordan (Stop Bif) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) W display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) CT input current value display setup (Operation display) User level Status indicator	0: 1 bit 1 2 bits 11 bit 25 ms 15 bits 15 bits 15 bits 15 bits 16 bits 16 bits 16 bits 16 bits 17 bits 16 bits 17 bits 18 bit	0 0 3 0 1 1 255 15 15 0 0 0 0 0 0 0	
		Data Jordan (Stop Bir) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) EV display setup (Operation display) CT input current value display setup (Operation display) User level Status indicator	0; 1 bit 1 2 bits 1 to 250 ms 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Standard type 1: Special type 0: rowald 1: AUTO/MANUAL selection 2: RU/READY selection 3: AT execution/stop instructions 4: SP group selection 5: Release all DO latches Bit 0: AUTO/MANUAL display (Enabled: +1) Bit 1: RU/READY display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +2) Bit 3: AT Stop/Start display (Enabled: +16) Bit 3: AT Stop/Start display (Enabled: +16) Bit 3: AT Stop/Start display (Enabled: +2) Bit 0: PV display (Enabled: +2) Bit 0: PV display (Enabled: +2) Bit 0: PV display (Enabled: +1) Bit 1: RU/READY (Enabled: +2) Bit 0: PV display (Enabled: +1) Bit 1: At M/XCod NV display (Enabled: +4) Bit 2: List group number display (Enabled: +2) Bit 3: AT stop/start display (Enabled: +2) Bit 0: PV display (Enabled: +1) Bit 1: At M/XCod NV display (Enabled: +2) Bit 2: List display (Enabled: +1) Bit 1: Start auto 1: Attrastructure to 2: Attrastructure displayed 1: Startual continenal event 1: a clasplayed 2: Set values of Internal event 1: a clasplayed 2: Set values of Internal event 1: a clasplayed 2: Set values of Internal event 1: a clasplayed 2: Internal event 1: b 3: displayed 4: CT 1: corrent values are displayed 5: CT 1: Corrent values are displayed 6: Not displayed 6: Not displayed 6: Not displayed 6: Not displayed 6: Start displayed 6:	0 0 3 0 1 1 255 15 15 0 0 0 0 0 0 0	
1 1 1 2 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2		Jaca Jordan (Sob Bid) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) User level Status indicator	0: 1 bit 1 2 bits 10 z 50 ms 10 z 50 ms 10 z 50 ms 2: RU/READY selection 2: RU/READY selection 3: RU/READY selection 3: RU/READY selection 3: RU/READY selection 3: AT escucion/xitop instructions 4: LSP group selection 5: Release all DO latches 6: Invalid 7: LW-release all DO latches 10: RU/READY selection 10: RU/READY selection	0 0 3 0 1 255 15 15 0 0 0 0 0 0	
		Data Jordan (Stop Bir) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) EV display setup (Operation display) Event remaining time display setup (Operation display) User level Status indicator Number of CT1 turns	0: 1 bit 1 2 bits 10 z 50 m 10 z 50 m 10 z 50 m 10 z 50 m 10 z 50 m 11 z 50 m 11 z 50 m 12 RU/REDV selection 23 RU/REDV selection 31 AT execution/toty pintructions 41 z 97 group selection 5: Release all DO latches 61 mulai 7 z 10 m z 40 m defined bit 1 selection 8: Invalid Bit 0: AUTO/MANUAL display (Enabled: +2) Bit 1: RU/REDV globaled: +10 Bit 3: AT 50 z 75 and 1: 2 holds: +10 Bit 3: AT 50 z 75 and 1: 2 holds: +10 Bit 3: AT 50 z 75 and 1: 2 holds: +20 Bit 0: CPU display (Enabled: +2) Bit 0: CPU display (Enabled: +2) Bit 0: CPU display (Enabled: +10) Bit 1: 2 holds: +20 Bit 0: PU display (Enabled: +1) Bit 1: 2 holds: +10 Bit 0: PU display (Enabled: +1) Bit 1: 4 holds: +10 Bit 1: -10 Bit	0 0 3 0 1 1 255 15 15 0 0 0 0 0 0 8	
		Joaa Jordan (Sobp Jol) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Sum of the weighting) EV display setup (Operation display) Event remaining time display setup (Operation display) Event remaining time display setup (Operation display) Event remaining time display setup (Operation display) User level Status indicator Number of CT1 turns Number of CT1 currer	0: 1 bit 1 2 bits 10 z 50 m 10 z 50 m 10 z 50 m 10 z 50 m 10 z 50 m 11 z 50 m 11 z 50 m 12 RU/REDV selection 13 RU/REDV selection 13 RU/REDV selection 14 z 59 group selection 5: Release all DO latches 16 rule 71 z 70 m 10 z 70 m	0 0 3 0 1 255 15 15 0 0 0 0 0 0 0 0 0 0 0 0 0	
		Data informati (Stop Bif) Communication minimum response time Key operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) EV display setup (Operation display) Event remaining time display setup (Operation display) CT input current value display setup (Operation display) User level Status indicator Number of CT1 turns Number of CT1 turns	0: 1 bit 1 2 bits 10 2 50 m 10	0 0 3 0 1 255 15 15 0 0 0 0 0 0 8 1 8 1 8 1 8 1	
		Data Jordan (Stop Bir) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Operation display) EVent remaining time display setup (Operation display) CT input current value display setup (Operation display) User level Status indicator Number of CT1 turns Number of CT2 turns	0: 1 bit 1 2 bits 10 2 50 m3 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Standard type 1: Special type 0: Number 2000 (Standard Standard Standar	0 0 3 0 1 1 255 15 15 0 0 0 0 0 0 8 1 8 1 0 0	
		Data Jordan (Stop Bir) Communication minimum response time Rey operation type [MODE] key function MODE display setup (Sum of the weighting) PV/SP display setup (Sum of the weighting) MV display setup (Sum of the weighting) EV display setup (Sum of the weighting) EV display setup (Operation display) EV display setup (Operation display) Cr input current value display setup (Operation display) User level Status indicator Number of CT1 turns Number of CT2 power wire loops Number of CT2 power wire loops PV input failure (under range) type	0: 1 bit 1 2 bits 10 2 50 m3 10 2 50 m3 10 2 50 m3 21 80 20 1 70 1 70 10 70 10 10 10 10 10 10 10 10 10 10 10 10 10		

EuEF	ľ	<b>Event configuration</b>	bank 】		
Display		Item	Contents	Initial value	Setting
E (E I ~ ESE I		Internal event 1 to 5 Configuration 1	See "Event types."	0	
E (C2 ~ ESC2		Internal event 1 to 5 Configuration 2	"1st digit" (2nd, etc.) means the first digit (etc.) from the right.		
		1st digit: Direct/Reverse	0: Direct 1: Reverse	0	
		2nd digit: Standby	0: None 1: Standby 2: Standby + Standby at SP change	0	
		3rd digit: EVENT state at READY	0: Continue 1: Forced OFF	0	
		4th digit: Undefined	0	0	
E (C3 ~ ESC3	•	Internal event 1 to 5 Configuration 3	"1st digit" (2nd, etc.) means the first digit (etc.) from the right.		
		1st digit: Alarm OR	0: None 1: Alarm direct + OR operation 2: Alarm direct + AND operation 3: Alarm reverse + OR operation 4: Alarm reverse + AND operation	0	
		2nd digit: Special OFF	0: As usual 1: When the event set value (main setting) is 0, the event is "OFF".	0	
		3rd digit: Delay time unit	0: 0.1 s 1: 1 s 2: 1 min	0	
		4th digit: Undefined	0	0	
dl	ľ	DI assignment bank	]		
Display		Item	Contents	Initial value	Setting
al (I al SI		Internal contact 1 to 5 Operation type	0: No function 1: LSF group selection (0/+1) 2: LSF group selection (0/+2) 3: LSF group selection (0/+4) 4: PL0 group selection (0/+4) 5: PL0 group selection (0/+4) 7: RUNKEADV selection 1: Invalid 1: AT execution/stop instructions 1: Invalid 1: AT execution/stop instructions 1: Invalid 1: AT execution/stop instructions 1: Invalid 1: Control action direct/verse1 3: SP Rang meabled/disabled 1: FV Maximum value hold 1: R-VM Maximum value hold 1: R-VM Maximum value hold 1: R-RM Execution/stop III DO Laches 1: R-RM Base Control action direction III: R-RM Base Control action direction 1: R-RM Base Control action direction III: R-RM Base Control Action direction 1: R-RM Base Control action direction III: R-RM Base Control Base Control Action 1: R-RM Base Control Base	0	
di 1,2 ~ di 5,2	•	Internal contact 1 to 5 Input bit operation	0: Not used (Default input) 1: Function 1 ((A and B) or (C and D)) 2: Function 2 ((A or B) and (C or D)) 3: Function 3 (A or B or C or D) 4: Function 4 (A and B and C and D)	0	
di (3 ~ di 53	•	Internal contact 1 to 5 Input assignment A	0: Normally open (normally off = 0) 1: Normally closed (normally on = 1) 2: DI1 3: DI2 4 to 9: Invalid	0, 2–5	
તા (મ ~ તા દુધ	•	Internal contact 1 to 5 Input assignment B	10 to 14: internal event 1 to 5 15 to 17: invalid 18 to 21: User-defined bit 1 to 4 22: MANUAL 23: READY 24: Invalid 25: AT (Auto-Tuning) 26: During SP ramp	0	
di (5 ~ di 55	•	Internal contact 1 to 5 Input assignment C	27: Invalid 28: All alarm 29: PV alarm 30: Invalid	0	
di (5 ~ di 5,5	•	Internal contact 1 to 5 Input assignment D	31: [MODE] key status 32: Event output 1 terminal status 33: Control output 1 terminal status	0	
di (1~di 51	•	Internal contact 1 to 5 Polarity A to D	"1st digit" (2nd, etc.) means the first digit (etc.) from the right.		
		1st digit: Polarity A	0: Direct	0	
		2nd digit: Polarity B	1: Reverse	0	
		3rd digit: Polarity C		0	
		4th digit: Polarity D		0	
di (8 ~ di 58	•	Internal contact 1 to 5 Polarity	0: Direct 1: Reverse	0	
di (9 ~ di 59	•	Internal contact 1 to 5 Internal event No. assignment	0: All internal events 1 to 5: Internal event No.	0	

#### do [ DO assignment bank ]

Display	Γ	Item	Contents	Initial value	Setting
ob (1~ ob2,1 Eu (1~ Eu3,1	•	Control output 1 to 2, event output 1 to 3 Operation type	0: Default output 1: MV ON/OFF status 1 2: MV ON/OFF status 2 3 to 6: Function 1 to 4	0	
ob (2 ~ ob22 Eu (2 ~ Eu32	•	Control output 1 to 2, event output 1 to 3 Output assignment A	0: Normally open (normally off = 0) 1: Normally closed (normally on = 1) 2 to 6: Internal Event 1 to 5	2–4, 14, 15	
ot (3 ~ ot23 Eu (3 ~ Eu33	•	Control output 1 to 2, event output 1 to 3 Output assignment B	7 to 13: Invalid 14: MV ON/OFF status 1 15: MV ON/OFF status 2 16,17: Invalid 18: Dl1 19: Dl2 20 to 25: Invalid	0	
ob (4 ~ ob24 Eu (4 ~ Eu34	•	Control output 1 to 2, event output 1 to 3 Output assignment C	26 to 30: Internal contact 1 to 5 31 to 33: Invalid 34 to 37: User-defined bit 1 to 4 38: MANUAL 39: READY 40: Invalid 41: AT (Auto-Tuning) 42: During SP ramp 43: Invalid 44: Alarm	0	
ob (5 ~ ob25 Eu (5 ~ Eu35	•	Control output 1 to 2, event output 1 to 3 Output assignment D	45: PV alarm 46: Invalid 47: [MODE] key status 48: Event output 1 terminal status 49: Control output 1 terminal status	0	
ot (6 ~ ot26 Eu (6 ~ Eu36	•	Control output 1 to 2, event output 1 to 3 Polarity A to D	"1st digit" (2nd, etc.) means the first digit (etc.) from the right.		
		1st digit: Polarity A	0: Direct 1: Reverse	0	
		2nd digit: Polarity B		0	
		3rd digit: Polarity C		0	
		4the digit: Polarity D		0	
ob (1~ ob2) Eu (1~ Eu3)	•	Control output 1 to 2, event output 1 to 3 Polarity	0: Direct 1: Reverse	0	
ot 18 ~ ot28 Eu 18 ~ Eu38	•	Control output 1 to 2, event output 1 to 3 Latch	0: None 1: Latch (Latch at ON) 2: Latch (Latch at OFF except for initialization at power ON)	0	
UF	[	User function bank	1		
Display		Item	Contents	Initial value	Setting
UF- 1~ UF-8		User function 1 to 8	-		

#### Lock bank

LOL	ľ	Lock bank			
Display	Item		Contents	Initial value	Setting
Loĺ		Keylock	0: All settings can be specified. 1: Mode, event, operation display, SP UF, lock, manual MV, and (MODE) key operation can be specified. 2: Operation display, SP, UF, lock, manual MV, and (MODE) key operation can be specified. 3: UF, lock, manual MV, and (MODE) key operation can be specified.	0	
ELoE	٠	Communication lock	0: Unlocked 1: Locked	0	
LLoC	٠	Loader lock	0: Unlocked 1: Locked	0	
PRSS		Password display	0 to 15 (5: Password 1A to 2B display)	0	
PS IR		Password 1A	0000 to FFFF (hex)	0000	
PS2R		Password 2A	0000 to FFFF (hex)	0000	
PS Ib		Password 1B	0000 to FFFF (hex)	0000	
PS26		Password 2B	0000 to FFFF (hex)	0000	

#### [Instrument information bank]

Display	Item		Contents	Initial value	Setting
1901	•	ROM ID	16: Fixed	Not Applicable	
1 905	•	ROM Version 1		Not Applicable	
E09 I	•	ROM Version 2		Not Applicable	
1 404	•	Loader information		Not Applicable	
1 405	•	EST information		Not Applicable	
1 406	•	Manufacturing date code (year)	Subtract 2000 from the year. Example: "21" means the year 2021.	Not Applicable	
1 40 1	•	Manufacturing date code (month, day)	Month + day divided by 100. Example: "12.01" means the 1st day of December.	Not Applicable	
1 908	•	Serial No.		Not Applicable	
1 908	•	Model No.		Not Applicable	
1910	•	Model Information		Not Applicable	
1411	•	Production site code		Not Applicable	
FPO I FP IG	٠	Advanced function password 1 to 16	0000 to FFFF (hex)	0000	

#### ! Precautions for setup

• The type of automatic tuning can be changed by RELY (AT type) in the extended tuning bank. Specify the setting in accordance with the control characteristics.

### Memo

#### Changing the user level

The user level can be selected from three options with [  $\Partial P$ . The number of available displays and settings decreases in the order: advanced  $\rightarrow$  standard  $\rightarrow$  simple. All items are displayed when advanced configuration is selected.



### PV input range table

CD I Setting         Sensor type         Range (Celsius)         Range (Fahrenheit)           1         K         -200 to +1200 °C         -300 to +2200 °F           2         K         0 to 1200 °C         0 to 2200 °F           3         K         0.0 to 800.0 °C         0 to 1500 °F           4         K         0.0 to 600.0 °C         0 to 1100 °F           5         K         0.0 to 400.0 °C         -0 to 1500 °F           9         J         0.0 to 800.0 °C         0 to 1500 °F           10         J         0.0 to 600.0 °C         0 to 1000 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1300 °C         0 to 2300 °F           18         N         0 to 1300 °C<	(Thermocouple )						
I         K         -200 to +1200 °C         -300 to +2200 °F           2         K         0 to 1200 °C         0 to 2200 °F           3         K         0.0 to 800.0 °C         0 to 1500 °F           4         K         0.0 to 600.0 °C         0 to 1100 °F           5         K         0.0 to 400.0 °C         0.0 to 700.0 °F           6         K         -200.0 to +400.0 °C         -300 to +700 °F           9         J         0.0 to 600.0 °C         0 to 1100 °F           10         J         0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 2300 °F           18         N         0 to 1300 °C         0 to	ED I Setting	Sensor type	Range (Celsius)	Range (Fahrenheit)			
2         K         0 to 1200 °C         0 to 2200 °F           3         K         0.0 to 800.0 °C         0 to 1500 °F           4         K         0.0 to 800.0 °C         0 to 1100 °F           5         K         0.0 to 400.0 °C         0.0 to 700.0 °F           6         K         -200.0 to +400.0 °C         -0.0 to 700.0 °F           9         J         0.0 to 600.0 °C         0 to 1100 °F           10         J         -200.0 to +400.0 °C         -0.0 to 1100 °F           11         J         -200.0 to +400.0 °C         -0.0 to 1100 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -0.0 to 1100 °F           15         R         0 to 1600 °C         0 to 1100 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 1300 °C         0 to 300 °F           22         DIN U         -200.0 to +400.0 °C	1	К	-200 to +1200 °C	-300 to +2200 °F			
3         K         0.0 to 800.0 °C         0 to 1500 °F           4         K         0.0 to 600.0 °C         0 to 1100 °F           5         K         0.0 to 400.0 °C         0.0 to 700.0 °F           6         K         -200.0 to +400.0 °C         -300 to 700.0 °F           9         J         0.0 to 800.0 °C         -0 to 1100 °F           10         J         -0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1300 °C         0 to 2300 °F           18         N         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1400 °C         0 to 3400 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 1300 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C	2	К	0 to 1200 ℃	0 to 2200 °F			
4         K         0.0 to 600.0 °C         0 to 1100 °F           5         K         0.0 to 400.0 °C         0.0 to 700.0 °F           6         K         -200.0 to +400.0 °C         -300 to +700 °F           9         J         0.0 to 800.0 °C         0 to 1500 °F           10         J         0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 1300 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3300 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1300 °C         0 to 3400 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 1900 °C         -300 to +700 °F           24         DIN U         -200.0 to +400.0 °C	3	К	0.0 to 800.0 °C	0 to 1500 °F			
5         K         0.0 to 400.0 °C         0.0 to 700.0 °F           6         K         -200.0 to +400.0 °C         -300 to 7700 °F           9         J         0.0 to 800.0 °C         0 to 1500 °F           10         J         0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3000 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PLII<0 to 1300 °C	4	К	0.0 to 600.0 °C	0 to 1100 °F			
6         K         -200.0 to +400.0 °C         -300 to +700 °F           9         J         0.0 to 800.0 °C         0 to 1500 °F           10         J         0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1300 °C         0 to 3200 °F           18         N         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 3900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	5	К	0.0 to 400.0 °C	0.0 to 700.0 °F			
9         J         0.0 to 800.0 °C         0 to 1500 °F           10         J         0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1300 °C         0 to 2300 °F           18         N         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 1900 °C         -300 to +700 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	6	К	-200.0 to +400.0 °C	-300 to +700 °F			
10         J         0.0 to 600.0 °C         0 to 1100 °F           11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3300 °F           18         N         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1300 °C         0 to 2400 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 1300 °C         -30 to 4+700 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	9	J	0.0 to 800.0 °C	0 to 1500 °F			
11         J         -200.0 to +400.0 °C         -300 to +700 °F           13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3000 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1300 °C         0 to 4200 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -2000 to +400.0°C         -300 to +700 °F           25         DIN L         -100.0 to +800.0°C         -150 to +1500 °F	10	J	0.0 to 600.0 °C	0 to 1100 °F			
13         E         0.0 to 600.0 °C         0 to 1100 °F           14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3300 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1400 °C         0 to 4200 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	11	J	-200.0 to +400.0 °C	-300 to +700 °F			
14         T         -200.0 to +400.0 °C         -300 to +700 °F           15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3200 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PL II         0 to 1300 °C         0 to 2400 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 1000 °C         0 to 3400 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	13	E	0.0 to 600.0 °C	0 to 1100 °F			
15         R         0 to 1600 °C         0 to 3000 °F           16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3300 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PL II         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 1300 °C         0 to 3400 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -2000 to +4000 °C         -300 to +1500 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	14	Т	-200.0 to +400.0 °C	-300 to +700 °F			
16         S         0 to 1600 °C         0 to 3000 °F           17         B         0 to 1800 °C         0 to 3300 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1300 °C         0 to 2400 °F           21         WRe5-26         0 to 2300 °C         0 to 2400 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         2000 to +4000 °C         -150 to +1500 °F           25         DIN L         -1000 to +8000 °C         -150 to +1500 °F	15	R	0 to 1600 °C	0 to 3000 °F			
17         B         0 to 1800 °C         0 to 3300 °F           18         N         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 2300 °C         0 to 4200 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	16	S	0 to 1600 °C	0 to 3000 °F			
18         N         0 to 1300 °C         0 to 2300 °F           19         PLII         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 2300 °C         0 to 4200 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	17	В	0 to 1800 °C	0 to 3300 °F			
19         PLII         0 to 1300 °C         0 to 2300 °F           20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 2300 °C         0 to 4200 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	18	N	0 to 1300 °C	0 to 2300 °F			
20         WRe5-26         0 to 1400 °C         0 to 2400 °F           21         WRe5-26         0 to 2300 °C         0 to 4200 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -2000 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	19	PL II	0 to 1300 ℃	0 to 2300 °F			
21         WRe5-26         0 to 2300 °C         0 to 4200 °F           23         PR40-20         0 to 1900 °C         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	20	WRe5-26	0 to 1400 °C	0 to 2400 °F			
23         PR40-20         0 to 1900 ℃         0 to 3400 °F           24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	21	WRe5-26	0 to 2300 ℃	0 to 4200 °F			
24         DIN U         -200.0 to +400.0 °C         -300 to +700 °F           25         DIN L         -100.0 to +800.0 °C         -150 to +1500 °F	23	PR40-20	0 to 1900 °C	0 to 3400 °F			
25 DIN L -100.0 to +800.0 °C -150 to +1500 °F	24	DIN U	-200.0 to +400.0 °C	-300 to +700 °F			
	25	DIN L	-100.0 to +800.0 °C	-150 to +1500 °F			

(RTD)							
ED I Setting	Sensor type	Raı (Cel	nge sius)	Range (Fahrenheit)			
41	Pt100	-200 to	+500 °C	-300 to +900 °F			
42	JPt100	-200 to	+500 °C	-300 to +900 °F			
43	Pt100	-200 to	+200 °C	-300 to +400 °F			
44	JPt100	-200 to	+200 °C	-300 to +400 °F			
45	Pt100	-100.0 to	+300.0 °C	-150 to +500 °F			
46	JPt100	-100.0 to	+300.0 °C	-150 to +500 °F			
51	Pt100	-50.0 to -	+200.0 °C	-50.0 to +400.0 °F			
52	JPt100	-50.0 to +200.0 °C		-50.0 to +400.0 °F			
53	Pt100	-50.0 to +100.0 °C		-50.0 to +200.0 °F			
54	JPt100	-50.0 to +100.0 °C		-50.0 to +200.0 °F			
63	Pt100	0.0 to 2	200.0 °C	0.0 to 400.0 °F			
64	JPt100	0.0 to 2	200.0 °C	0.0 to 400.0 °F			
67	Pt100	0.0 to 5	500.0 °C	0.0 to 900.0 °F			
68	JPt100	0.0 to 5	00.0 °C	0.0 to 900.0 °F			
[ DC voltage / DC current ]							
ED I Setting	Sensor type		Range				
84	0 to 1 V 1 to 5 V 0 to 5 V		The scaling range is -199 to +9999. The number				
86							
87			of decimal places is				
88	0 to 1	0 V					

: Initial value

Alarm codes

89

90

0 to 20 mA

4 to 20 mA

	Alarm code*1	Description	Cause	Corrective action		
	ALC I	PV input error	Sensor burnout, incorrect wiring	Check the wiring.		
Input		(over range)	Incorrect settings for PV range type, etc.	Check the PV range type (C01) and other settings.		
	8L02	PV input error	Sensor burnout, incorrect wiring	Check the wiring.		
		(under range)	Incorrect settings for PV range type, etc.	Check the PV range type (C01) and other settings.		
	RLD3	Reference junction compensation (cold junction compensation) error	Measurement range error in terminal temperature at reference junction compensation	Make sure that the ambient temperature is within the specifications of this product.		
rrors		RTD input error	Sensor burnout, incorrect wiring	Check the wiring.		
	RLII	Current transformer (CT) input error (over range)* <sup>2</sup>	Current input exceeding the high limit of the display range	<ul> <li>Use a current transformer with a number of turns that matches the display range.</li> <li>Check the number of CT turns and the setting.</li> <li>Check the setting and the number of times the power wire passes through the CT.</li> </ul>		
			Incorrect wiring	Check the wiring.		
	AL 10	A/D conversion error	A/D conversion unit failure	Turn the power off and then on		
	AL 14	Nonvolatile memory error	Temporary communication error,	If the alarm is triggered when the power is turned on again, replace the device.		
	AL 80	Nonvolatile memory not initialized	of this device			
	ALB I	Setting value area error*3				
	8L82	Adjustment value area error*3				
	AL 83	Internal system error		Turn the power off and then on again.		
Inst	AL BY	Setting value initialization error				
trument errors	AF d2	Setting value error		In the aiam's triggered after turning the power on again, the problem can be corrected with the following procedure: • Initialize the set point • Write the setting again If this procedure does not correct the problem, replace the device.		
	AF 40	Adjustment value error		Turn the power off and then on again. If the alarm is triggered after turning the power on again, the problem can be corrected with the following procedure: • Restore the adjusted value*4 If this procedure does not correct the problem, replace the device.		

\*1. Multiple alarms may occur at the same time. If the corrective action for one of the alarms says that the device should be replaced, it should be replaced.

\*2. The error occurred because of CT input 1, 2, or both. \*3. This error may occur when updating the firmware.

\*4. If the area in memory for restoring the adjustment value has been corrupted, the value cannot be restored.

## **Event types**

Operation type	Setting	Direct action •: ON/OFF changes at the value O: ON/OFF changes when the value is exceeded	Reverse action •: ON/OFF changes at the value O: ON/OFF changes when the value is exceeded
No event	0	Always OFF	Always OFF
PV high limit	1	→ HYS ON Main setting PV →	ON HYS Main setting PV
PV low limit	2	ON HÝS Main setting PV	HYS ON Main setting
PV hogh/low limit	3	ON HYS HYS ON Main setting* Sub-setting* PV	HYS ON HYS Main setting* Sub-setting* PV →
Deviation high limit	4	HYS ON SP+Main setting PV →	ON HYS SP+Main setting
Deviation low limit	5	ON HYS SP+Main setting PV	HYS ON SP+Main setting
Deviation high/low limit	6	ON HYS HYS ON Main Sub- setting SP PV	Main Sub- setting SP PV
Deviation high limit (Final SP reference)	7	HYS ON SP+Main setting PV →	ON HYS SP+Main setting PV →
Deviation low limit (Final SP reference)	8	ON HYS SP+Main setting PV	SP+Main setting
Deviation high/low limit (Final SP reference)	9	ON HYS HYS ON Main Sub- setting SP PV	HYS ON HYS Main Sub- setting SP setting PV
Heater 1 burnout/ Overcurrent	16	ON HYS ON Main setting* Sub-setting* CT1 when output is ON- OFF before measuring CT1 current	Main setting* Sub-setting* CT1 when output is ON OFF before measuring CT1 current
Heater 1 shortcircuit	17	<u>HYS</u> ON Main setting CT1 when output is OFF → OFF before measuring CT1 current	ON HYS Main setting CT1 when output is OFF OFF before measuring CT1 current
Heater 2 burnout/ Overcurrent	18	ON HYS ON Main setting* Sub-setting* CT2 when output is ON — OFF before measuring CT2 current	Main setting* Sub-setting* CT2 when output is ON OFF before measuring CT2 current
Heater 2 shortcircuit	19	HYS ON Main setting CT2 when output is OFF OFF before measuring CT2 current	ON HYS Main setting CT2 when output is OFF OFF before measuring CT2 current
Alarm (status)	23	ON if there is an alarm, otherwise OFF	OFF if there is an alarm, otherwise ON

: Initial value

\* If the main setting is greater than the sub-setting, operations are performed with the settings automatically swapped.

Setting

#### Event types other than the above

Operation			Operation		
Type Setting			Type	Settin	
SP high limit	10		MV high/low limit	15	
SP low limit	11		Loop diagnosis 1	20	
SP high/low limit	12		Loop diagnosis 2	21	
MV high limit	13		Loop diagnosis 3	22	
MV low limit 14			READY (status)	24	

Operation	
Туре	Setting
MANUAL (status)	25
AT in execution (status)	27
During SP ramp	28
Control action (status)	29
Timer (status)	32

Specifications are subject to change without notice. (11)

### azbil

**Azbil Corporation** Advanced Automation Company

1-12-2 Kawana, Fujisawa Kanagawa 251-8522 Japan URL: https://www.azbil.com

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