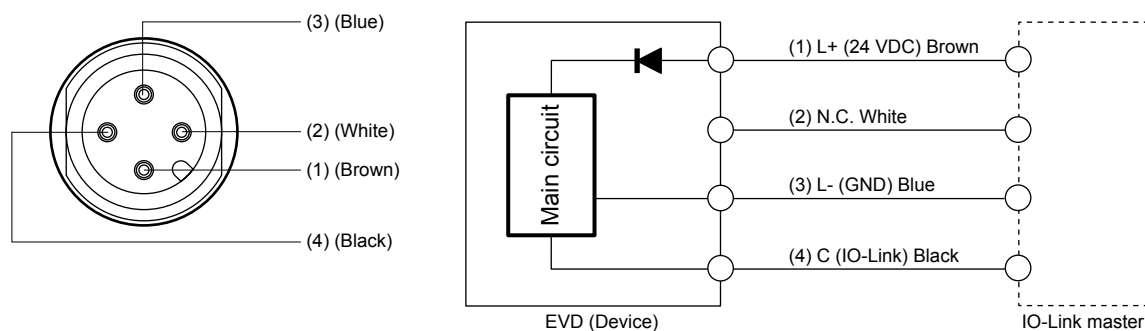


Wiring method

Wiring method

⚠ CAUTION Take care to prevent incorrect wiring.



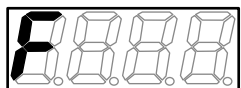
Terminal No.	Option Cable color	Name
(1)	Brown	L+ (24 VDC)
(2)	White	N.C.
(3)	Blue	L- (GND)
(4)	Black	C (IO-Link)

* The optional cables for our electro-pneumatic regulator EVR and EVS2 Series are M12 connector type and can be connected to the connector of this product, but the correlation of the terminal No. and the wiring colors differs from the IO-Link cable specifications. Do not use them as it will lead to incorrect wiring.

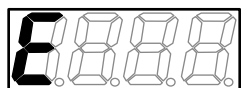
Target model No.: EVR-S1/EVR-S3/EVR-L1/EVR-L3/EV2000-C11/EV2000-C13

Names and functions of display/operation section

Display pressure (red)

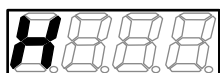


- "F" is displayed when confirming the function setting.

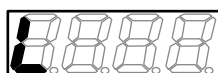


- "E" is lit when error output is ON.

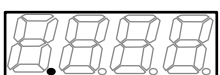
* If upper/lower limits have been set,



or



are displayed.

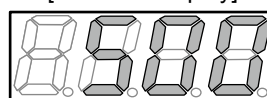


- Red dot flashes during IO-Link communication. Red dot lights up when the unit is turned ON and IO-Link communication is not in progress.

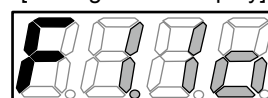
3-digit number LED display (green)

- Displays the pressure display and function setting details during RUN mode.
- * The setting mode No. and setting details are displayed when displaying details of function settings.
- When setting each data, the values, etc., are displayed.
- Error code No. is displayed at the time of error display.

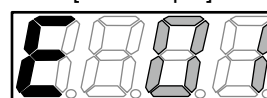
[Pressure display]



[Setting details display]



[Error output]



Code No.

Setting details

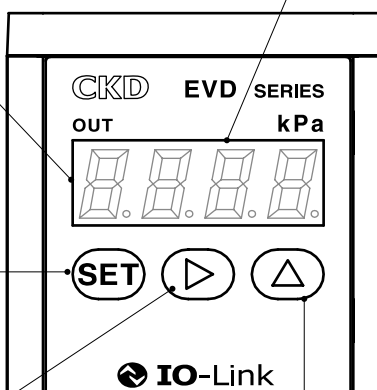
Setting mode No.

"SET" key

- Use to enter settings mode.
- When setting each data, this key is used to confirm the values, etc.

"▶" Key

- When setting each data, this key is used to select the digits to the values, etc.



"▲" Key

- Setting details are sequentially displayed during RUN mode.
- Use to select the setting when setting data.
- When setting each data, this key is used to increase the values, etc.

Function list

Screen display	Name	Display content (RUN mode)	Settings (Setting mode)
	Pressure display	Secondary pressure is confirmed with the 3-digit numerical display LED. The display is converted to the set unit meter.	
Screen F1 	Input specification Setting	The selected input specifications, current pressure value and unit settings are confirmed.	Normal mode input through IO-Link communication / preset input / direct memory input is selected. For preset input/direct input, input the setting or this mode.
Screen F2 	Zero/span Adjustment	No function. are displayed.	
Screen F3 	Auto power OFF	Auto-power OFF enabled/disabled can be confirmed. * The default setting is invalid .	Auto-power OFF enabled/disabled can be selected. Note) The auto-power OFF time is set to approx. one minute. The time cannot be changed.
Screen F4 	Switch output	The switch outputs 1, 2 enabled/disabled and setting value can be confirmed. When "Mode 1 enabled" is selected, after F4._1 or F4._2 is displayed, the switch output No. 1, "-" tolerance range setting value (L) and "+" tolerance range setting value (H) are displayed. When "Mode 2 enabled" is selected, after F4._1 or F4._2 is displayed, the switch output No. 2, min. setting value (L) and max. setting value (H) are displayed. * The default setting is invalid "F4._1" ⇔ "1--" Invalid "F4._2" ⇔ "2--".	Switch output 1, 2 enabled/disabled can be selected. When enabled, "mode 1" or "mode 2" can be selected. +/- tolerance values and max./min. values can be set as desired.
Screen F5 	Proportional value setting	Changes in the proportional value and its set level can be confirmed. When "Proportional Value Up" is selected, F5.H is displayed. When "Proportional Value Down" is selected, the F5.L - setting value is alternately displayed. * The default setting is standard (--)	Select whether to use the standard value or whether to change the proportional value. The proportional value level is set in this mode only when "Proportional Value Down" is selected. (10 stages)
Screen F6 	Unit setting	The unit can be checked. Selection option: When "Unit change: No" (Blank) is displayed, are displayed. When "Unit change: Yes" (KA) is selected, F6 and the unit are repeatedly displayed. * The default setting is "F6" ⇔ "KPa".	Selection option: Only "Unit change: Yes" (KA) allows the unit setting to be selected from "kPa", "psi" and "bar". The unit cannot be changed when "Unit change: No" (Blank) is selected.
Screen F7 	Communication error Setting	Allows the pressure control operation to be checked when an IO-Link communication error occurs.	The pressure control operation when an IO-Link communication error occurs can be set to HOLD or CLEAR.
Screen F8 	Input zero operation Stop function	Input zero operation stop enabled/disabled can be confirmed. * The default setting is invalid .	Input zero operation stop enabled/disabled can be selected. When enabled, the control at the set pressure of 0%F.S. is stopped.

Key lock

The key lock function prevents incorrect operation.

* The key is locked when the power is turned ON (or turned ON again). Release the key lock before changing settings.

■ Releasing the key lock



Hold down simultaneously for 2 seconds or more

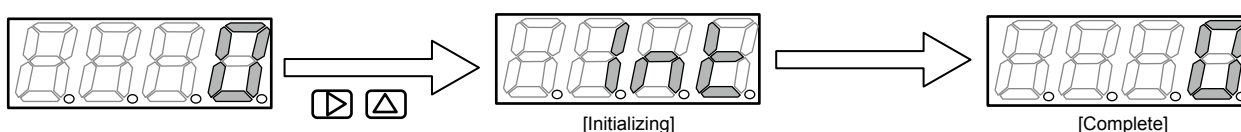
■ Operating the key lock



Hold down simultaneously for 2 seconds or more

Default mode (Initialization)

■ Initializing



Hold down simultaneously for 2 seconds or more

Error code table



Turn OFF the power supply, check and correct the cause of the error as per the following table, and then turn ON the power supply again.

Error Display	Category	Error name	Event Code (IO-Link)	Error description	Control processing (Solenoid valve operation)
	Error	Power supply voltage Error	0x8D02	The power voltage is not within the rating. Detection level: 19.5 V or less	pressure control is not stopped.
	Error	Input signal Error	0x8D03	The input signal exceeded the rating range. Detection level: Specification upper limit + 10%	pressure control is not stopped. * Controlled by 110% F.S. input signal.
	Error	EEPROM Data error	0x8D04	An error occurred during EEPROM reading or writing.	Pressure control stops.
	Error	ROM Data error	0x8D05	An error occurred during memory reading or writing.	Pressure control stops.
	Error	Control pressure Error	0x8D06	Secondary pressure did not reach the set value for five seconds or more consecutively. 20% F.S. or less of the set value was not attained. Detection accuracy $\pm 6\%$	pressure control is not stopped.
7-segment display not used. Error code is [E10]	Warning	Supply side solenoid valve Unnecessary operation	0x8D10	When the solenoid valve on the air supply side is in the state of unnecessary operation.	pressure control is not stopped.
7-segment display not used. Error code is [E11]	Warning	Exhaust side solenoid valve Unnecessary operation	0x8D11	When the exhaust side solenoid valve is in the state of unnecessary operation.	pressure control is not stopped.
7-segment display not used. Error code is [E12]	Warning	Switch output 1 Setting error	0x8D12	· When the operation is continued at the switch output 1 (mode 2) threshold setting of lower limit > (upper limit: -10) for 5 seconds or more,	pressure control is not stopped.
7-segment display not used. Error code is [E13]	Warning	Switch output 2 Setting error	0x8D13	· When the operation is continued at the switch output 2 (mode 2) threshold setting of lower limit > (upper limit: -10) for 5 seconds or more,	pressure control is not stopped.
7-segment display not used. Error code is [E14]	Warning	IO-Link driver Temperature error	0x4210	High IO-Link driver temperature.	pressure control is not stopped.

Communication specifications

General

Item	Details
Communication protocol	IO-Link
Communication protocol version	V1.1
Transmission bit rate	COM3 (230.4kbps)
Port type	A
Process data length (input)	6byte
Process data length (output)	4byte

Item	Details
Min. cycle time	2ms
Data storage	1kbyte
SIO mode support	No
Device ID	Refer to table 1 below

Parameter

Device ID

Device ID	Product ID	Remarks
0x215001	EVD-*100-C	100 kPa range
0x215002	EVD-*500-C	500 kPa range
0x215003	EVD-*900-C	900 kPa range
0x215004	EVD-*100-C-KA	100 kPa range (Unit change: Yes)
0x215005	EVD-*500-C-KA	500 kPa range (Unit change: Yes)
0x215006	EVD-*900-C-KA	900 kPa range (Unit change: Yes)

Table 1 Control pressure range per model

Model No.	Selection Unit	Control pressure			Remarks
		Display (7-segment)	ProcessData Display range L (kPa)	ProcessData Output value	
EVD-1100-C EVD-3100-C	No (kPa fixed)	0 to 100	0.0 to 100.0	0 to 1000	Unit change: No
EVD-1500-C EVD-3500-C	No (kPa fixed)	0 to 500	0.0 to 500.0	0 to 5000	Unit change: No
EVD-1900-C EVD-3900-C	No (kPa fixed)	0 to 900	0.0 to 900.0	0 to 9000	Unit change: No
EVD-1100-C*KA EVD-3100-C*KA	kPa	0 to 100	0.0 to 100.0	0 to 1000	Unit change: Yes
	psi	0 to 14.5	0.0 to 14.50	0 to 1450	
	bar	0 to 1.00	0.0 to 1.000	0 to 1000	
EVD-1500-C*KA EVD-3500-C*KA	kPa	0 to 500	0.0 to 500.0	0 to 5000	Unit change: Yes
	psi	0 to 72.5	0.0 to 72.50	0 to 7250	
	bar	0 to 5.00	0.0 to 5.000	0 to 5000	
EVD-1900-C*KA EVD-3900-C*KA	kPa	0 to 900	0.0 to 900.0	0 to 9000	Unit change: Yes
	psi	0 to 130	0.0 to 130.5	0 to 1305	
	bar	0 to 9.00	0.0 to 9.000	0 to 9000	

* Refer to the SM-A20758 instruction manual for parameter configuration.

* The IO-Link setting file (IODD) can be downloaded from the CKD website (<https://www.ckd.co.jp/english>).

Process data IN

PD	PD0								PD1							
Bit	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
	MSB															LSB
Data name	Set pressure															
Data range	2byte															
Format	UInteger16															

PD	PD2								PD3							
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
	MSB															LSB
Data name	Set pressure															
Data range	2byte															
Format	UInteger16															

PD	PD4								PD5							
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Data name	Error	WARNING	Normal Actuation	-	-	-	Switch Output		MSB			LSB	Input setting		-	Start/stop
							2	1	Error code							
Data range	True/False								0 to 15				0 to 2		-	True/False
Format	Boolean								UInteger4				UInteger2		-	Boolean

Process data OUT

PD	PD0								PD1							
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
	MSB															LSB
Data name	Set pressure															
Data range	2byte															
Format	UInteger16															

PD	PD2								PD3							
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Data name	-	-	-	-	-	Preset			-	-	-	-	-	-	-	Start/stop *1
						3	2	1								
Data range	-	-	-	-	-	0 to 7			-	-	-	-	-	-	-	True/False
Format	-	-	-	-	-	UInteger3			-	-	-	-	-	-	-	Boolean

*1: When turning off the EVD, be sure to set the set pressure of Process data OUT to zero (Bit16-31 = 0) → Stop (Bit0 = 0) beforehand.

The solenoid valve unnecessary operation data is saved when transitioning from Start → Stop.

*2: Data areas marked with "-" are unused. The data is invalid.

Refer to the SM-A20758 instruction manual for usage methods.