

LC4H Counters



4-digit display



Pin type

Screw terminal type

DIN 48 SIZE LCD ELECTRONIC COUNTER

UL File No.: E122222 C-UL File No.: E122222

Features

1. Bright and Easy-to-Read Display

A brand new bright 2-color backlight LCD display. The easy-to-read screen in any location makes checking and setting procedures a cinch.

2. Simple Operation

Seesaw buttons make operating the unit even easier than before.

3. Short Body of only 64.5 mm 2.539 inch (screw type) or 70.1 mm 2.760 inch (pin type)

With a short body, it easily installs in even narrow control panels.

4. Conforms to IP66's Weather **Resistant Standards**

The water-proof panel keeps out water and dirt for reliable operation even in poor environments.

LC4H/-L Counters



5. Screw terminal and Pin Type are **Both Standard Options**

The two terminal types are standard options to support either front panel installation or embedded installation.

6. Changeable Panel Cover

Also offers a black panel cover to meet your design considerations.

7. 4-digit or 6-digit display

Two sizes of displays are offered for you to choose the one that suits your needs. 8. Compliant with UL, c-UL and CE.

RoHS	Directive compatibility information
	http://www.nais-e.com/

Product types

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Digit	Count speed	Output mode	Output	Operating voltage	Power down insurance	l erminal type	Part number
						8 pins	LC4H8-R4-AC240V
				100 to 240 V AC		11 pins	LC4H-R4-AC240V
						Screw terminal	LC4H-R4-AC240VS
			Relay			8 pins	LC4H8-R4-AC24V
			(1c)	24 V AC		11 pins	LC4H-R4-AC24V
			(10)			Screw terminal	LC4H-R4-AC24VS
						8 pins	LC4H8-R4-DC24V
				12 to 24 V DC		11 pins	LC4H-R4-DC24V
4						Screw terminal	LC4H-R4-DC24VS
7						8 pins	LC4H8-T4-AC240V
				100 to 240 V AC		11 pins	LC4H-T4-AC240V
		Maintain				Screw terminal	LC4H-T4-AC240VS
		output/bold count	Transistor			8 pins	LC4H8-T4-AC24V
		Maintain	(10)	24 V AC		11 pins	LC4H-T4-AC24V
	30 Hz (cps)/ 5 KHz (Kcps) switchable	output/over count I	(14)			Screw terminal	LC4H-T4-AC24VS
						8 pins	LC4H8-T4-DC24V
		output/over count II		12 to 24 V DC		11 pins	LC4H-T4-DC24V
		• One shot/over			Available	Screw terminal	LC4H-T4-DC24VS
		count			Available	8 pins	LC4H8-R6-AC240V
		• One shot/recount I		100 to 240 V AC		11 pins	LC4H-R6-AC240V
		• One shot/recount I				Screw terminal	LC4H-R6-AC240V LC4H-R6-AC240VS LC4H8-R6-AC24V
		• One shot/hold count (7 modes)	Relay			8 pins	LC4H8-R6-AC24V
				24 V AC		11 pins	LC4H-R6-AC24V
			(10)			Screw terminal	LC4H-R6-AC24VS
				12 to 24 V DC		8 pins	LC4H8-R6-DC24V
						11 pins	LC4H-R6-DC24V
6						Screw terminal	LC4H-R6-DC24VS
0						8 pins	LC4H8-T6-AC240V
				100 to 240 V AC		11 pins	LC4H-T6-AC240V
						Screw terminal	LC4H-T6-AC240VS
			Transistor			8 pins	LC4H8-T6-AC24V
			(10)	24 V AC		11 pins	LC4H-T6-AC24V
			(14)			Screw terminal	LC4H-T6-AC24VS
						8 pins	LC4H8-T6-DC24V
				12 to 24 V DC		11 pins	LC4H-T6-DC24V
						Screw terminal	LC4H-T6-DC24VS
A rubber gasket (ATC18002) and a mounting frame (AT8-DA4) are included.							

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LC4H/-L **LC4H-L Counters**



mm inch





AEL13 Series (6-digit display)





Pin type

UL File No.: E122222 C-UL File No.: E122222

Features

1. Low Price

All this at an affordable price to provide you with unmatched cost performance. 2. Display is a bright reflective-type LCD.

3. Inherits all of the characteristics of the LC4H digital timer.

- Seesaw switches ensure easy operation.
- IP66 environmental protection.
- Shortened body (pin type: 70.1 mm 2.760 inch, screw type: 64.5 mm 2.539 inch underhead).
- 4. Compliant with UL, c-UL and CE.

Product types

Digit	Count speed	Output mode	Output	Operating voltage	Power down insurance	Terminal type	Part number
						8 pins	LC4HL8-R4-AC240V
				100 to 240 V AC		11 pins	LC4HL-R4-AC240V
						Screw terminal	LC4HL-R4-AC240VS
			Polov			8 pins	LC4HL8-R4-AC24V
			Helay (1a)	24 V AC/DC		11 pins	LC4HL-R4-AC24V
			(10)			Screw terminal	LC4HL-R4-AC24VS
						8 pins	LC4HL8-R4-DC24V
				12 to 24 V DC		11 pins	LC4HL-R4-DC24V
1						Screw terminal	LC4HL-R4-DC24VS
7						8 pins	LC4HL8-T4-AC240V
				100 to 240 V AC		11 pins	LC4HL-T4-AC240V
		Maintain				Screw terminal	LC4HL-T4-AC240VS
		output/bold count	Transistor			8 pins	LC4HL8-T4-AC24V
	30 Hz (cps)/ 5 KHz (Kcps) switchable	Maintain output/over count I Maintain	(1a)	24 V AC/DC		11 pins	LC4HL-T4-AC24V
			Intain Screw te intain 12 to 24 V DC put/over count II 12 to 24 V DC a shot/over Available a shot/recount I 100 to 240 V AC			Screw terminal	LC4HL-T4-AC24VS
						8 pins	LC4HL8-T4-DC24V
		output/over count II		12 to 24 V DC	C	11 pins	LC4HL-T4-DC24V
		• One shot/over		Screw terminal	LC4HL-T4-DC24VS		
		count			, trainable	8 pins	LC4HL8-R6-AC240V
	erniteritable	One shot/recount I		100 to 240 V AC		11 pins	LC4HL-R6-AC240V
		 One shot/recount II One shot/hold count 				Screw terminal	LC4HL-R6-AC240VS
			Relay			8 pins	LC4HL8-R6-AC24V
			(1c)	24 V AC/DC		11 pins	LC4HL-R6-AC24V
		(7 modes)	7 modes) 12 to 24 V DC	Screw terminal	LC4HL-R6-AC24VS		
		(********			8 pins	LC4HL8-R6-DC24V	
				11 pins	LC4HL-R6-DC24V		
6		-			-	Screw terminal	LC4HL-R6-DC24VS
, in the second s				100 +- 010 1/ 40		8 pins	
				100 to 240 V AC		1 1 pins	
					4	Screw terminal	
			Transistor				
			(1a)	24 V AU/DU		Serow terminal	
					4		
				10 to 04 V DC			
				12 10 24 V DC		Screw terminal	

* A rubber gasket (ATC18002) and a mounting frame (AT8-DA4) are included.

Part names

• 4-digit display type



6-digit display type







Specifications

Item AC type DC type AC type DC type Rated operating voltage 100 to 240 VA C, 24 VA C 12 to 24 VD C 100 to 240 VA C, 24 VA C 12 to 24 VD C Rated prever consumption Max. 10 VA Max. 3 W Max. 10 VA Max. 3 W Rated prever consumption Max. 10 VA Max. 3 W Max. 10 VA Max. 3 W Input mode 5 A 250 VAC (resistive load) 100 mA 30 VD C Max. 3 W Max. 10 VA Max. counting speed 30 Hz/5 KHz (selectable by DIP switch) 100 mA 30 VD C Max. 3 W Max. counting speed 30 Hz/5 KHz (selectable by DIP switch) Max. 10 VA Max. 10 VA Reset input Min. input signal width: 16.7 ms at 30 Hz/5 KHz (selectable by DIP switch) Max. 10 VA Max. 10 VA Input signal Contact or Open collector input/flout impedance: 10 KD or res, input residual voltage: 2 V or less. froput residual voltage: 2 V or less. froput residual voltage: 4 V DC Output mode HOLD-AHOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) Output mode 7-segment LCD. Counter value (backdight red LED). Setting value (backdight red LED). Set	li e ue		Ralay output type		Transistor output type			
Rated der der der der der der der der der d		Item		AC type	DC type	AC type	DC type	
Rated Rated requency 50/60 Hz common — Rated power consumption Max. 10 V A Max. 3 W Max. 10 V A Max. 3 W Rated control capacity 5 A 250 V AC (resistive load) 100 mA 30 V DC 100 mA 30 V DC Input mode Addition (UP)Subtraction (DOWN)/Direction (DIR)/Individuality (IMD)/Phase (PHASE) 5 modes selectable by DIP switch) Max. counting rout (unt) 1.2) Min. input signal width: 167. mas 130 Hz0.1 mas 15 SHz. ON time: OFF time = 1:1 Reset input Min. input signal width: 167. mas 130 Hz0.1 mas 15 SHz. ON time: OFF time = 1:1 Lock input Contact or Open collector input/input impedance: 1 K0 or nes, finput residual voltage: 2 V or less, Output mode HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-C/SHO		Rated opera	ting voltage	100 to 240 V AC, 24 V AC	12 to 24 V DC	100 to 240 V AC, 24 V AC	12 to 24 V DC	
Rated power consumption Max. 10 V.A Max. 3 W Max. 10 V.A Max. 3 W Rated power consumption 5 A 250 V.AC (resistive lead) 10 m. A0 V.DC Input mode Addition (UP)/Subtraction (DOWN)/Directin (DP)/Individually (IND)/Phase (PHASE) Service S		Rated freque	ency	50/60 Hz common	—	50/60 Hz common	—	
Rated control capacity 5 A 250 V AC (resistive load) 100 mA 30 V DC Input mode Addition (UP)/Subtraction (DOW/Direction (DOW/Direction (DOW/Direction (DOW/Direction VDIP Awtich) Max. counting speed 30 Hz/5 Hz/2 (selectable by DIP switch) Counting input (Input 1,2) Min. input signal width: 16.7 ms at 30 Hz/0.1 ms at 5 Hz/2. ON time: OFF time = 1:1 Counting input (Input 1,2) Min. input signal width: 16.7 ms at 30 Hz/0.1 ms at 5 Hz/2. ON time: OFF time = 1:1 Counting input (Input 1,2) Min. input signal width: 16.7 ms at 30 Hz/0.1 ms at 5 Hz/2. ON time: OFF time = 1:1 Counting input (Input 1,2) Min. input signal width: 16.7 ms at 30 Hz/0.1 ms at 5 Hz/2. ON time: OFF time = 1:1 Contact provide addition (UP) Subtraction (Down more, Max. energized voltage: 40 O DC ms Output mode Contact or Open collector input/Input impedance: 10 Ko roles, Input residual voltage: 2V or less, Open impedance: 10 Ko roles, Input residual voltage: 2V or less, Open impedance: 10 Ko roles or more, Max. energized voltage: 40 DC Digit To segment LCD, Counter value (backlight red LED). Setting value (backlight yelow LED) Memory EEP-ROM (Overwriting times: 10° ope. or more) Contact Test add addition (DV ope, (A rated control voltage) 10° ope, (A rated control voltage) Initial contact resistance 100 mΩ (at 1 A 6 V DC) — <		Rated power	r consumption	Max. 10 V A	Max. 3 W	Max. 10 V A	Max. 3 W	
Input mode Addition (UP)/Subtraction (DCWNN)/Direction (DIP)/Individuality (ND)/Phase (PHASE) 5 modes selectable by DIP switch Max. counting speed 30 Hz/5 kHz (selectable by DIP switch) Counting input (Input 1, 2) Min. input signal witch: 16.7 ms at 30 Hz/0.0 ms at 5 kHz, 0N time: OFF time = 1:1 Reset input Min. input signal witch: 16.7 ms at 30 Hz/0.0 ms at 5 kHz, 0N time: OFF time = 1:1 Lock input Min. input signal witch: 16.7 ms at 30 Hz/0.0 ms at 5 kHz, 0N time: OFF time = 1:1 Display Contract or Open collector input/Input impedance: 16.0 Lores Input residual voltage: 2 Vor less, 100 Vm dot selectable by DIP switch) One shot output time Contract or Open collector input/Input impedance: 100 KQ or more; Max. energized voltage: 40 V DC Output mode HOLD-A(HOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) One shot output time Approx. 1 s Indication 7-segment LCD, Counter value (backlight value (backlight value)/backlight value)/backlight value)/backlight value)/backlight value (backlight value)/backlight value)		Rated contro	ol capacity	5 A 250 V AC	(resistive load)	100 mA	30 V DC	
Max. counting speed 30 Hz/S kHz (selecable by DIP switch) Counting input (input 1, 2) Min. input signal width: 16.7 ms at 30 Hz/0.1 ms at 5 kHz. ON time: OFF time = 1:1 Restinput Min. input signal width: 16.7 ms at 30 Hz/0.1 ms at 5 kHz. ON time: OFF time = 1:1 Rest input Min. input signal width: 20 ms Input signal full Contact or Open olloctor input/input impedance: 1K 00 ress. Input residual voltage: 2V or less. Open impedance: 100 KQ or more, Max. energized voltage: 40 V DC Output mode HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D/ 7 modes selectable by DIP switch) One shot output time A-foigt display type-090 to 9990 (-5 digits to 4 digits) (0 to 9999 for setting) Indication 7-segment LCD, Counter value (backlight real EDD). Setting value (backlight yellow LED) Indication 7-segment LCD, Counter value (backlight yellow ted) 9990 for setting) 6-digit display type-09 9999 (-5 digits to 6 digits) (0 to 99990 for setting) 6-digit display type-099990 (-5 digits to 6 digits) (0 to 99990 for setting) 6 Ontact arrangement 1 Form C 1 Form A (Open collector) 1 for the A ga aloy/At flush — Konable operating value Aga aloy/At flush — Between live and dead metal parts: 2,000 Yms for 1 min Between live and dead metal parts: 2,000 Yms for 1 min		Input mode		Addition (UP)/Subtraction (DOWN)/Direction (DIR)/Individuality (IND)/Phase (PHASE) 5 modes selectable by DIP switch				
Rating Counting input (input 1, 2) Min. input signal width: 16.7 ms at 3 kH2.1 ms at 5 kH2. ON time: OFF time = 1:1 Reset input Min. input signal width: 20 ms Imput signal width: 20 ms Lock input Contact or Open collector input/input impedance: 100 kG or more, Max. energized valuage: 40 V DC Output mode HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) One shot utput time Freedowice HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) One shot utput time Freedowice HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) One shot utput time Freedowice HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) One shot utput time Freedowice HOLD-A/HOLD-B/HOLD-C/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) Indication Freedowice Freedowice HOLD-A/HOLD-B/HOLD-C/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) Indication Freedowice Freedowice Freedowice HOLD-A/HOLD-B/HOLD-C/SHOT-B/SHOT-C/SHOT-D (7 modes selectable by DIP switch) Indication Freedowice Freedowice Freedowice Freedowice Freedowice Indication Freedowice		Max. countin	ig speed		30 Hz/5 kHz (select	table by DIP switch)		
Reset input Min. input signal widh:: 1ms, 20 ms (selected by DIP switch) Lock input Lock input signal widh:: 20 ms Input signal Min. input signal widh:: 20 ms Input signal Contact or Open collector input/input impedance:: 1k0 or less, Input residual voltage: 2 V or less, Open impedance:: 100 k2 or more, Max. energized voltage: 40 V DC Output mode HOLD-AHOLD-B/HOLD-C/SHOT-A/SHOT-B/SHOT-C/SHOT-O/C/SHOT-O/SHOT-D (7 modes selectable by DIP switch) One shot output lime Approx. 1 s Indicatior T-segment LCD, Counter value (backlight red LED), Setting value (backlight yellow LED) Advised in display type -9999 to 99999 (-5 digits to 6 digits) (0 to 9999 for setting) Break down voltage Contact resistance Initial contact resistance 100 m2 (at 1 A 6 V DC) Initial contact resistance 100 m2 (at 1 A 6 V DC) Mechanical (contact) 2 × 10° ope. (At rated control voltage) Break down voltage (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between open contact: 1,000 Vrms for 1 min Between open contact: 1,000 Vrms for 1 min Between input and output: 2,000 Vrms for 1 min Between input		Counting inp	ut (Input 1, 2)	Min. inpu	t signal width: 16.7 ms at 30 Hz	0.1 ms at 5 kHz, ON time: OFF	time = 1:1	
International methods Lock input Lock input Input signal width: 20 ms Input signal width Contact or Open collector input/Input impedance: 1 kG or less, nour residual voltage: 2 V or less, Open impedance: 1 kG or less, Input residual voltage: 40 V C Output mode HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-A/SHOT-D/C/SHOT-D (7 modes selectable by DIP switch) One shot output time Approx. 1 s Indication 7-segment LCD, Counter value (backlight red LED). Setting value (backlight yellow LED) Memory 6-digit display type -999 to 9990 (-3 digits to 6 digits) (to 9999 for setting) Contact 1nitia contact resistance 100 mΩ (at 1 A 6 V DC) — Contact Contact resistance 100 mΩ (at 1 A 6 V DC) — — Itilia contact resistance 100 mΩ (at 1 A 6 V DC) — — _ Itilia contact resistance 100 mΩ (at 1 A 6 V DC) — _ _ Itilia contact resistance 100 mΩ (at 1 A 6 V DC) _ _ _ Itilia contact resistance 100 mΩ (at 1 A 6 V DC) _ _ _ Itilia contact resistance 100 mΩ (at 1 A 6 V DC) _ _ _ _ <tr< td=""><td>Bating</td><td>Reset input</td><td></td><td></td><td>Min. input signal width: 1 ms, 2</td><td>20 ms (selected by DIP switch)</td><td></td></tr<>	Bating	Reset input			Min. input signal width: 1 ms, 2	20 ms (selected by DIP switch)		
Input signal Contact or Open collector input/Input imgedance: 1 k£ or less, input residual voltage: 2 V or less, Open impedance: 10 k£ or more, Max. energized voltage: 40 V DC Output mode HOLD-A/HOLD-C/SHOT-A/SHOT-C/SHOT-0 (7 modes selectable by DIP switch) One shot output time Approx. 1 s Indication 7-segment LCD, Counter value (backlight red LED), Setting value (backlight yellow LED) Digit 4-digit display type -999 to 9999 (-3 digits to +4 digits) (0 to 9999 for setting) Memory EEP-ROM (Overwriting times: 10° ope. or more) Contact arrangement 1 Form C 1 Not act arrangement 1 Form C 1 Not Q (and C contact) 2 × 10° ope. (Except for switch operation parts) Contact arrangement 100 mQ (at 1 A 6 V DC) Infiel contact 2 × 10° ope. (At rated control voltage) Mechanical (contact) 2 × 10° ope. (At rated control voltage) I Novable operating voltage 85 to 110 % of rated operating voltage Between input and output: 2.000 Vrms for 1 min Between input and output: 2.000 Vrms for 1 min Insulation resistance Between open contacts: 1,000 Vrms for 1 min Insulation resistance Mex 65° C (under the flow of morial operating current at nominal voltage) Vitoration <td< td=""><td>nating</td><td>Lock input</td><td></td><td></td><td>Min. input sign</td><td>al width: 20 ms</td><td></td></td<>	nating	Lock input			Min. input sign	al width: 20 ms		
Output mode HOLD-A/HOLD-B/HOLD-C/SHOT-A/SHOT-C/SHOT-0 (7 modes selectable by DIP switch) One shot output time Approx.1 s Indication T-segment LCD, Counter value (backlight red LED). Setting value (backlight yellow LED) Digit 7-segment LCD, Counter value (backlight vple-9999 to 9999 (-3 digits to +4 digits) (0 to 9999 nor setting) Memory EEP-ROM (Overwriting times: 10° ope. or more) Contact Contact arrangement 1 Form C 1 Form A (Open collector) Initial contact resistance 100 mΩ (at 1 A 6 V DC) — Contact material Aggin/A flush — Electrical (contact) 2 × 10° ope. (Except for switch operation parts) — Life Mechanical (contact) 2 × 10° ope. (Except for switch operation parts) — Electrical (contact) Between input and output: %000 Vms for 1 min Between input and output: %000 Vms for 1 min Between input and output: %000 Vms for 1 min Between input and output: %000 Vms for 1 min Between input and output: %000 Vms for 1 min Hereit How of the flow of nore state operating voltage Between input and output: %000 Vms for 1 min Between input and output: %000 Vms for 1 min Hereit How of the flow of nore state operating voltage Between input and		Input signal		Contact or Open Op	collector input/Input impedance pen impedance: 100 k Ω or more	: 1 k Ω or less, Input residual vol , Max. energized voltage: 40 V I	tage: 2 V or less, DC	
Indication Approx.1 s Indication 7-segment LCD, Counter value (backlight red LED), Setting value (backlight value) Digit		Output mode	9	HOLD-A/HOLD-B	HOLD-C/SHOT-A/SHOT-B/SHO	OT-C/SHOT-D (7 modes selecta	ble by DIP switch)	
Indication T-segment LCD, Counter value (backlight red LED). Setting value (backlight yellow LED) Digit		One shot out	tput time		Appro	x.1s		
		Indication		7-segment L	CD, Counter value (backlight re	d LED), Setting value (backlight	yellow LED)	
Image: Memory EEP-ROM (Overwriting times: 10° ope. or more) Contact arrangement 1 Form C 1 Form A (Open collector) Initial contact resistance 100 mΩ (at 1 A 6 V DC) — Contact material Ag alloy/AU flush — Life Mechanical (contact) 2 × 10° ope. (Except for switch operation parts) — Life Mechanical (contact) 2 × 10° ope. (At rated control voltage) 10° ope. (At rated control voltage) Allowable operating voltage range Between live and dead metal parts: 2000 Vrms for 1 min (11-pin type) Between input and output: 2,000 Vrms for 1 min Between open contacts: 1,000 Vrms for 1 min Between open contacts: 1,000 Vrms for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 1,000 MΩ Between input and asses) Mechanical Funct		Digit		4-digit display type –999 to 9999 (–3 digits to +4 digits) (0 to 9999 for setting) 6-digit display type –99999 to 999999 (–5 digits to 6 digits) (0 to 999999 for setting)				
$ \begin{array}{ $		Memory		EEP-ROM (Overwriting times: 10 ⁵ ope. or more)				
		Contact arrangement		1 Form C 1 Form A (Open collector)			pen collector)	
Contact material Ag alloy/Au flush — Life Mechanical (contact) 2 × 10° ope. (Except for switch operation parts) — Allowable operating voltage range 2 × 10° ope. (At rated control voltage) 10° ope. (At rated control voltage) Break down voltage Between range voltage range 85 to 110 % of rated operating voltage Break down voltage Between live and dead metal parts: 2,000 Vrms for 1 min (11-pin type) Between open contacts: 1,000 Vrms for 1 min Between open contacts: 1,000 Vrms for 1 min Between input and output: 2,000 Vrms for 1 min Between open contact: Min. 100 MΩ Between live and dead metal parts: 0,00 Vrms for 1 min Between input and output: 1,00 MΩ Between live and dead metal parts: Min. 100 MΩ Value) Temperature Max. 65° C (under the flow of nominal operating current at nominal voltage) Between input and output: Min. 100 MΩ Nechanical Functional 10 to 55 Hz (1 cycle/min), single amplitude: 0.35 mm (10 min on 3 axes) Between input and output: Min. 100 MΩ Nechanical Functional 0 to 55 Hz (1 cycle/min), single amplitude: 0.75 mm (1 h on 3 axes) Temperature Mechanical Functional Min. 294 m 964.567 ft./s² (5 times on 3 axes) Temperature Temperature -10° C to 55° C +14° F to +131° F Ambint humidt Ambint humidt <	Contact	Initial contact resistance		100 mΩ (at 1 A 6 V DC) —			—	
$ \begin{array}{ c c c } \hline \label{eq:lici} \end{title} title$		Contact material		Ag alloy/Au flush —			_	
Line Electrical (contact) 10° ope. (At rated control voltage) 10° ope. (At rated control voltage) Allowable operating voltage range Allowable operating voltage range 85 to 110 % of rated operating voltage Break down vitage (initial value) Between input and output: 2,000 Vrms for 1 min Between open contacts: 1,000 Vrms for 1 min Between input and output: 2,000 Vrms for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V CPC (Initial value) Between input and output: 2,000 V CPC for 1 min Between input and output: 2,000 V CPC (Initial value) Between live and dead metal parts: 2,000 V CPC for 1 min Between input and output: 2,000 V CPC for 1 min Between input and output: 2,000 V CPC for 1 min Petween input and output: 100 MΩ Between live and dead metal parts: 100 MΩ (11-pin type) Between input and output: 100 MΩ Between live and dead metal parts: 100 MΩ Between live and dead metal parts: 100	Life	Mechanical (contact)		2×10^7 ope. (Except for switch operation parts) —			_	
Allowable operating voltage range 85 to 110 % of rated operating voltage Break down voltage (Initial value) Between live and dead metal parts: 2,000 Vrms for 1 min (11-pin type) Between input and output: 2,000 Vrms for 1 min Between open contacts: 1,000 Vrms for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: Min. 100 MΩ (11-pin type) Between input and output: Min. 100 MΩ Between input and output: Min. 100 MΩ Between live and dead metal parts: Min. 100 MΩ Between input and output: Min. 100 MΩ Mechanical resistance Functional Fesistance Functional Destructive Max. 65° C (under the flow of nominal operating current at nominal voltage) Between input and output: Min. 100 MΩ Mechanical resistance Functional Fesistance Functional Destructive 10 to 55 Hz (1 cycle/min), single amplitude: 0.35 mm (10 min on 3 axes) Temperature Operating condition Functional Min: 98 m 321.522 ft /s² (4 times on 3 axes) Temperature -10° C to 55° C ± 14° F to ±131° F Operating condition Ambient temperature -10° C to 55° C ± 14° F to ±131° F 20 % or less Ambient temperature - 20 % or less - 20 % or less Ari pressure - 20 % or less -	LIIE	Electrical (contact)		10 ^s ope. (At rated control voltage) 10 ⁷ ope. (At rated control voltage)			d control voltage)	
Break down voltage (initial value) Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 2,000 V AC for 1 min Between input and output: 0,00 MΩ (11-pin type) Between input and output: Min. 100 MΩ Between live and dead metal parts: 0,00 V AC for 1 min Between input and output: 0,00 MΩ (11-pin type) Between input and output: Min. 100 MΩ Mechanical Functional Max. 65° C (under the flow of nominal operating current at nominal voltage) Between live and dead metal parts: 0,00 V ΩC (11-pin type) Between input and output: Min. 100 MΩ Mechanical Functional 10 to 55 Hz (1 cycle/min), single amplitude: 0.35 mm (10 min on 3 axes) Mechanical Destructive 0 to 55 Hz (1 cycle/min), single amplitude: 0.75 mm (11 on 3 axes) Mechanical Min. 294 m 964.567 ft./s² (5 times on 3 axes) Nobient term Destructive -10° C to 55° C + 14° F to + 131° F Ambient term Max. 65° R IH (non-condensing) -0° Kor 55° C + 14° F to + 131° F Ambient term Max. 65° N RH (non-condensing) - 20 % or less Ariper struction — 20 % or less — 20 % or less		Allowable operating voltage range		85 to 110 % of rated operating voltage				
Insulation resistance (At 500 V DC) (Initial value) Between live and dead metal parts: Min. 100 MΩ (11-pin type) Between input and output: Min. 100 MΩ Between live and dead metal parts: Min. 100 MΩ (11-pin type) Between input and output: Min. 100 MΩ Mechanical Functional Max. 65° C (under the flow of nominal operating current at nominal voltage) Between live and dead metal parts: Min. 100 MΩ Between input and output: Min. 100 MΩ Mechanical Functional 10 to 55 Hz (1 cycle/min), single amplitude: 0.35 mm (10 min on 3 axes) Min. 98 m 321.522 ft./s² (4 times on 3 axes) Shock Functional Min. 98 m 321.522 ft./s² (5 times on 3 axes) Min. 294 m 964.567 ft./s² (5 times on 3 axes) Operating conditions Ambient temperature -10° C to 55° C +14° F to +131° F Max. 85 % RH (non-condensing) Air pressure Moient humidity Max. 85 % RH (non-condensing) 860 to 1,060 h Pa Ripple rate — 20 % or less — 20 % or less Connection F 10° F 8-pin/11-pin/screw terminal Protective construction IP66 (front panel with a rubber gasket) 20 % or less	Flashiad	Break down voltage (Initial value)		Between live and dead metal parts: Between input and outp Between open contacts	2,000 Vrms for 1 min (11-pin type) ut: 2,000 Vrms for 1 min s: 1,000 Vrms for 1 min	Between live and dead metal parts Between input and outp	: 2,000 Vrms for 1 min (11-pin type) out: 2,000 V AC for 1 min	
Image:	Electrical	Insulation resistance (At 500 V DC) (Initial value)		Between live and dead metal p Between input and o Between open cor	arts: Min. 100 M Ω (11-pin type) butput: Min. 100 M Ω ttact: Min. 100 M Ω	Between live and dead metal p Between input and	parts: Min. 100 M Ω (11-pin type) output: Min. 100 M Ω	
Mechanical resistanceFunctional DestructiveIn the transformIn the tra		Temperature	e rise	Max. 65° C (under the flow of nominal	operating current at nominal voltage)			
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		Vibration	Functional	10 t	o 55 Hz (1 cycle/min), single am	plitude: 0.35 mm (10 min on 3 a	xes)	
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resistance Destructive Min. 294 m 964.567 ft./s² (5 times on 3 axes) Ambient temperature	wechanical	Shock	Functional		Min. 98 m 321.522 ft.,	/s² (4 times on 3 axes)		
Ambient temperature 10° C to 55° C +14° F to +131° F Ambient humidity Ambient humidity Max. 85 % RH (nor-condensing) Air pressure 860 to 1,060 h Pa 20 % or less Ripple rate		resistance	Destructive		Min. 294 m 964.567 ft.	/s² (5 times on 3 axes)		
Operating conditions Ambient humidity Max. 85 % RH (non-condensing) Air pressure 860 to 1,060 h Pa Ripple rate		Ambient tem	perature		-10° C to 55° C -	⊦14° F to +131° F		
Air pressure Air pressure 860 to 1,060 h Pa Ripple rate — 20 % or less — 20 % or less Connection B-pin/11-pin/screw terminal — 20 % or less Protective construction IP66 (front panel with a rubber gasket) —	Operating	Ambient hun	nidity		Max. 85 % RH (non-condensing)		
Ripple rate	conditions	Air pressure			860 to 1,	060 h Pa		
Connection 8-pin/11-pin/screw terminal Protective construction IP66 (front panel with a rubber gasket)		Ripple rate			20 % or less	—	20 % or less	
Protective construction IP66 (front panel with a rubber gasket)	Connection			8-pin/11-pin/s	crew terminal			
	Protective co	onstruction			IP66 (front panel w	ith a rubber gasket)		

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Applicable standard

Safety standard	EN61812-1	Pollution Degree 2/Overvoltage Category II
	(EMI)EN61000-6-4	
	Radiation interference electric field strength	EN55011 Group1 ClassA
	Noise terminal voltage	EN55011 Group1 ClassA
	(EMS)EN61000-6-2	
	Static discharge immunity	EN61000-4-2 4 kV contact
		8 kV air
	RF electromagnetic field immunity	EN61000-4-3 10 V/m AM modulation (80 MHz to 1 GHz)
		10 V/m pulse modulation (895 MHz to 905 MHz)
EMC	EFT/B immunity	EN61000-4-4 2 kV (power supply line)
		1 kV (signal line)
	Surge immunity	EN61000-4-5 1 kV (power line)
	Conductivity noise immunity	EN61000-4-6 10 V/m AM modulation (0.15 MHz to 80 MHz)
	Power frequency magnetic field immunity	EN61000-4-8 30 A/m (50 Hz)
	Voltage dip/Instantaneous stop/Voltage fluctuation immunity	EN61000-4-11 10 ms, 30% (rated voltage)
		100 ms, 60% (rated voltage)
		1,000 ms, 60% (rated voltage)
		5.000 ms. 95% (rated voltage)

Dimensions • 4-digit display type

mm inch General tolerance: $\pm 1.0 \pm .039$







• 6-digit display type



Screw terminal type: M3.5 (Flush mount)





LC4H/-I

• Dimensions for flush mounting (with adapter installed) Screw terminal type: M3.5



• 8-pin type Relay output type

(⁴⁶)

- Operating voltage

- ' +

11-pin type



Screw terminal type





Note) For connecting the output leads of the transistor output type, refer to 5) Transistor output on page 141.

Setting the operation mode and set value

Setting procedure 1) Setting the operation mode (input mode and output mode)

Set the input and output modes with the DIP switches on the side of the counter.

DIP switches

	lite une	DIP switch		1
	Item	OFF	ON	
1				
2	Output mode	Refer to table 1		-
3				
4	Minimum reset input signal width	20 ms	1 ms	
5	Maximum counter speed	30 Hz	5 kHz	
6				
7	Input mode	Refer to	table 2	<u> </u>
8				



DI	P switch N	lo.	Output mode
1	2	3	
ON	ON	ON	SHOT-A
OFF	OFF	OFF	SHOT-B
ON	OFF	OFF	SHOT-C
OFF	ON	OFF	SHOT-D
ON	ON	OFF	HOLD-A
OFF	OFF	ON	HOLD-B
ON	OFF	ON	HOLD-C
OFF	ON	ON	— (See note 1)

Table 2: Setting the input mode

Table 1: Setting the output made

DIP switch No.		۱o.	Input mode
6	7	8	input mode
ON	ON	ON	Addition input
OFF	OFF	OFF	Subtraction input
ON	OFF	OFF	Directive input
OFF	ON	OFF	Independent input
ON	ON	OFF	Phase input
OFF	OFF	ON	— (See note 1)
ON	OFF	ON	— (See note 1)
OFF	ON	ON	 (See note 1)

Notes:1) The counter and set value displays will display DIP Err.
2) Set the DIP switches before installing the counter on the panel.
3) When the DIP SW setting is changed, turn off the power once.
4) The DIP switches are set as ON before shipping.

Setting procedure 2) Setting the set value

Set the set value with the UP and DOWN keys on the front of the counter. **Front display section**

4-digit display type

- 1 Counter display
- 2 Set value display
- Controlled output indicator
- Reset indicator
- 5 Lock indicator
- 6 UP keys
 - Changes the corresponding digit of the set value in the addition direction (upwards).

• 6-digit display type

- 1 Counter display
- Set value display
- 3 Controlled output indicator
- (4) Reset indicator
- 5 Lock indicator

Changing the set value

1. It is possible to change the set value with the up and down keys (4digit type only) even during counting. However, be aware of the following points.

1) If the set value is changed to less than the count value with counting set to the addition direction, counting will continue until it reaches full scale (9999 with the 4-digit type and 999999 with the 6-digit type), returns to zero, and then reaches the new set value. If the set value is changed to a value above the count value, counting will continue until the count value reaches the new set value.





2) Suppose that the counter is preset to count down. Whether a preset count-down value is smaller or larger than the count value, the counter counts down to "0(Zero)".

2. If the set value is changed to "0," the unit will not complete count-up. It starts counting up when the counting value comes to "0 (Zero)" again.

1) Up-count (addition) input when counting is set to the addition direction, counting will continue until full scale is reached (9999 with the 4-digit type and 999999 with the 6-digit type), return to zero, and then complete count-up.

1 DOWN keys

Changes the corresponding digit of the set value in the subtraction direction (downwards).

- 8 RESET switch
- Resets the counting value and the output.
- 9 LOCK switch

Locks the operation of all keys on the counter.

6 UP keys

Changes the corresponding digit of the set value in the addition direction (upwards).

- 1 RESET switch
- Resets the counting value and the output.
- (8) LOCK switch Locks the operation of all keys on the counter.

2) Down-count (subtraction) input when counting is set to the subtraction direction, counting will continue until full scale is reached (-999 with the 4-digit type and -99999 with the 6-digit type), and then the display will change to ----- with the 4-digit type and ------ with the 6-digit type. The counting value does not become "0" and so the counter does not count up.

3) For directive, independent, and phase input, when the counting value increases or decreases from the value "0" and then returns back to the value "0," count-up is completed.

Operation modes 1. Input mode For the input mode, you can choose one of the following five modes

 Addition 	UP
 Subtraction 	DOWN
 Directive 	DIR
 Independent 	IND
	DUADE

Phase

е	DIR
ndent	IND
	PHAS

Input mode	Operation	*Minimum input signal width 30 Hz: 16.7 ms; 5 kHz: 0.1 ms
Addition UP	IN1 or IN2 works as an input block (gate) for the other input.	• Example where IN1 is the count counting and IN2 is the input block (gate).
Subtraction DOWN		 Example where IN2 is the counting input and IN1 is the input block (gate). IN1 H Blocked Blocked H A A A A A A A A A A A A A A A A A A
Directive DIR	IN1 is the counting input and IN2 is the addition or subtraction directive input. IN2 adds at L level and subtracts at H level.	IN1 H Addition Addition Addition IN2 H Addition Addition Addition Counting O 1 2 3 4 3 2 1 0 1 2 3 4 Counting Counting C
Independent IND	IN1 is addition input and IN2 is subtrac- tion input.	IN1 H IN2 H Counting D 1 2 3 4 3 2 1 2 1 2 3 Counting Counting Cou
Phase PHASE	Addition when the IN1 phase advances beyond IN2, and subtraction when the IN2 phase advances beyond IN1.	IN1 H IN2 H Phase advance B Counting 0 1 2 3 2 1 0 Counting Counting Counti

2. Output mode

For the output mode, you can choose one of the following seven modes

 Maintain output/hold count 	HOLD-A
Maintain output/over count I	HOLD-B
Maintain output/over count II	HOLD-C
 One shot/over count 	SHOT-A
One shot/recount I	SHOT-B
One shot/recount II	SHOT-C

One shot/hold count
 SHOT-D

Output mode	Operation	(Example when input mode is either addition or subtraction)									
Maintain output Hold count HOLD-A	Output control is maintained after count-up completion and until resetting. During that time, the count display does not change from that at count-up com- pletion.									1	
		Counting (addition)		11-3	11=2						
		Counting (subtraction)	Counting (subtraction) 3 2 1				0	0			
		Counting able/unable	Counting able/unable Able Unable						►	-	
		Output control OFF									
		* n: Set value									
Maintain output Over count I HOLD-B	Output control is maintained after count-up completion and until resetting. However, counting is possible despite completion of count-up.	Counting (addition)		n-2	n-1	n	n+1	n+2]	
		Counting (subtraction)		2	1	0	-1	-2			
		Counting able/unable	Able								
		Output control	OFF								
		* n: Set value									
Maintain output Over count II HOLD-C	Output control is maintained after count-up completion and until the next signal enters. However, counting is possible despite completion of count- up.	Counting (addition)		n-2	n-1	n	n+1	n+2]	
		Counting (subtraction)		2	1	0	-1	-2			
		Counting able/unable	4			Able	1			_	
		Output control	OFF						-		
		* n: Set value									
One shot Over count SHOT-A	Output control is maintained after count-up completion for a fixed time (approx. 1 sec). Counting is possible despite completion of count-up.	Counting (addition)		n-2	n-1	n	n+1	n+2		1	
		econtaing (decation)		11-2		 T	1171	1172		i 1	
		Counting (subtraction)		2	1	0	-1	-2		l	
								+	-		
		Output control	OFF								
		* n: Set value			→						
One shot Recount I SHOT-B	Output control is maintained after count-up completion for a fixed time (approx. 1 sec). Counting is possible despite completion of count-up. However, reset occurs simultaneous with completion of count-up. While out- put is being maintained, restarting of the count is not possible	Counting (addition)		n-2	n-1	0	1	2		l	
		Counting (subtraction)		2	1	n	n-1	n-2			
		Occurting a bla (mable	A Reset (automatic)								
		Counting able/unable	•					•			
		Output control * n: Set value	OFF			Approx. 1s					
One shot Recount II SHOT-C	Output control is maintained after count-up completion for a fixed time (approx. 1 sec). Counting is possible despite completion of count-up. However, reset occurs simultaneous with output OFF.	Counting (addition)		n-1	n			1		1	
				1	"] 1	
		Counting (subtraction)		1	0	-1	n ABeset (a	n-1]	
		Counting able/unable									
		Output control	t control OFF				ON OFF				
		* n: Set value	Approx. 1s								
One shot Hold count SHOT-D	Output control is maintained after count-up completion for a fixed time (approx. 1 sec). During that time, the count display does not change from that at count-up completion. Reset occurs simultaneous with output OFF.	Counting (addition)		n-1		n	0	1			
		Counting (subtraction)		1		0	n	n-1			
			L	1	 	4	A Reset (a	automatic)	1	1	
		Counting able/unable	Able		able 🕨	4	Able		-		
		Output control	OFF			OFF					
		* n: Set value			Appr	ox. 1s]				

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