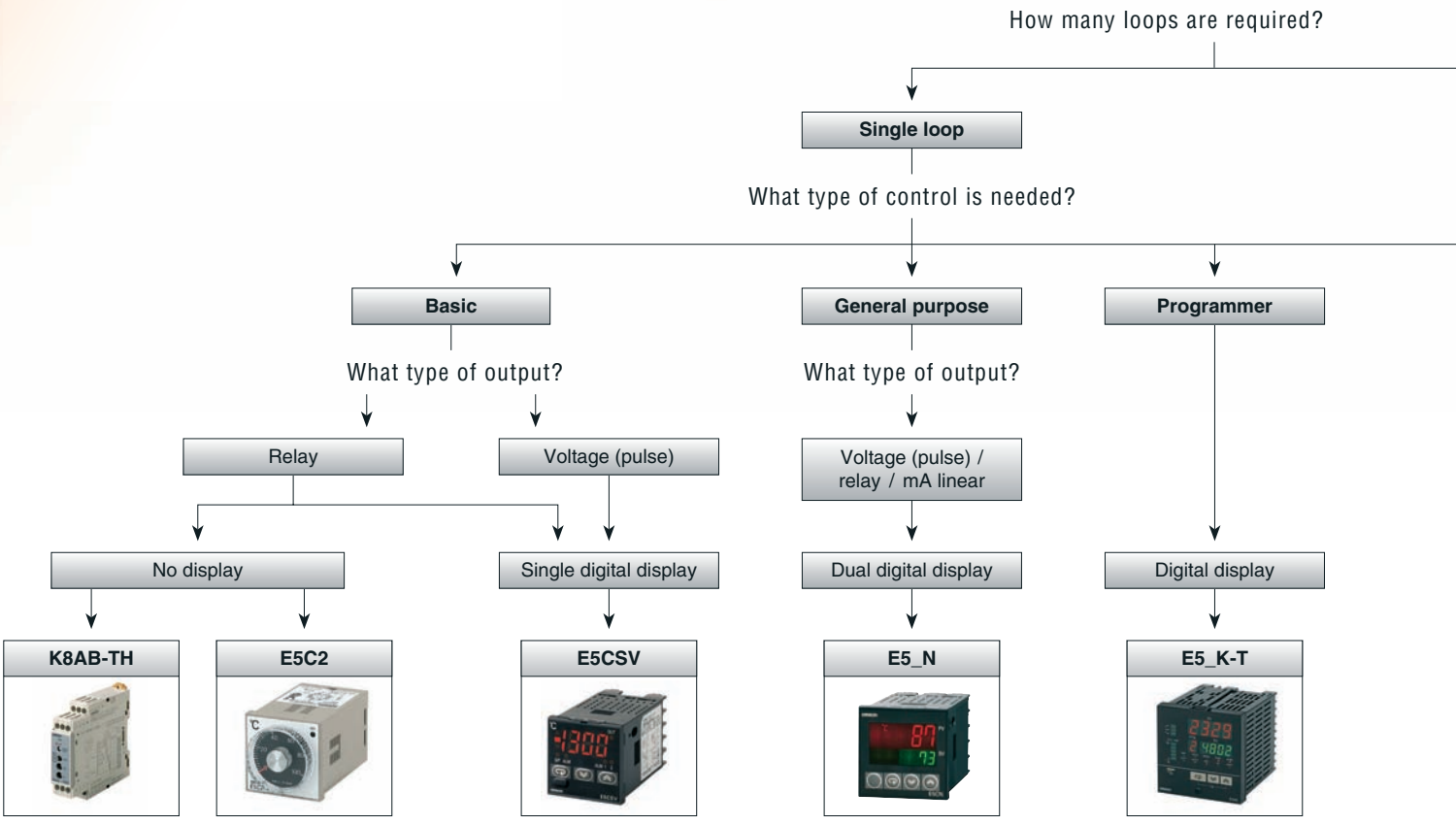
Temperature uniformity made easy

With E5ZN temperature controllers, all temperatures are equal

Omron's E5ZN temperature controllers feature GTC, the innovative new gradient temperature control technology.
GTC provides perfectly-controlled 2D temperature profiles over any size sheet and eliminates all irregularities in sheet-processing temperature to provide faster throughput and high, consistent quality and yield. E5ZN types are available with inputs for thermocouple or PRT signals and with voltage, transistor or analogue outputs.

Up to five E5ZN controllers can be connected together to apply GTC to up to 10 heating elements and a DeviceNet communications unit is available to provide centralised control. E5ZN – the perfect solution for 2D processing temperature control.

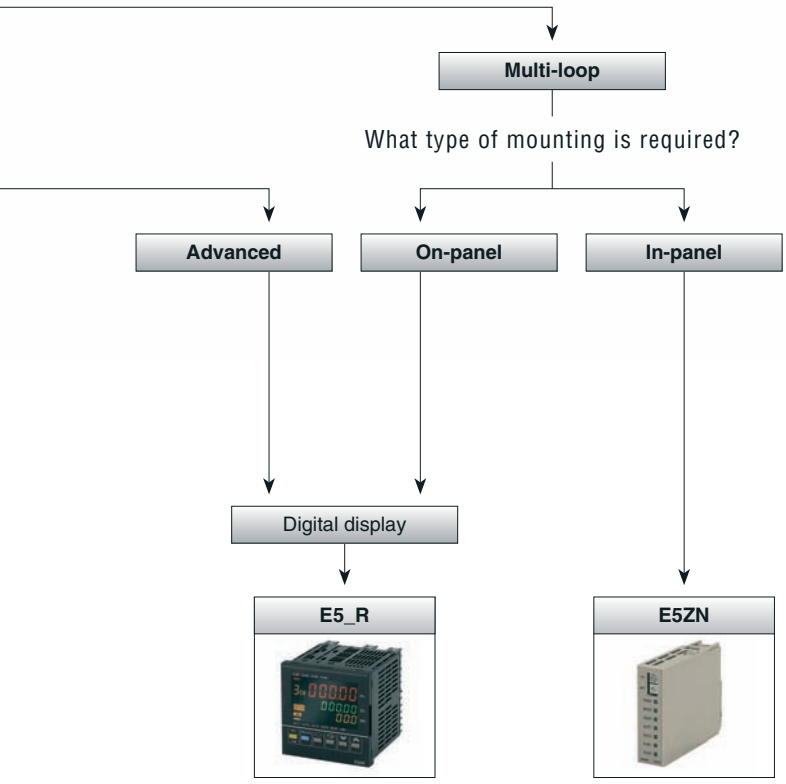


The E5_N series – evolution in temperature control

Now available in a choice of dimensions!

Omron's best-selling E5CN temperature controller is now joined by the upgraded versions of the E5AN and E5EN, offering the same superb features. The E5_N series includes a bright LCD display that gives a clear read-out, even under a wide viewing angle and harsh lighting conditions. They feature a colour change display with process values in three colours for easy status recognition, and an 11-segment display that makes text easy to understand.

The unique 2-PID provides optimum control performance. Plus, the E5_N series is easy to set up and operate. It has customisable menus and parameter protection, as well as PC software tools for parameter cloning, setting and tuning. Trust Omron to set the pace in temperature control evolution!



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Selection table

	Category	Alarm controller	Analogue temperature controller	Compact digital temperature controller	Digital temperature controller			
Selection criteria								
	Model	K8AB-TH	E5C2	E5CSV	E5AN	E5EN	E5CN	E5GN
	Type	Basic			General purpose			
	Panel	In-panel type	In- & on-panel type		On-panel type			
	Loops		Single loop					
	Size	22.5 mm wide	1/16 DIN	1/16 DIN	1/4 DIN	1/8 DIN	1/16 DIN	1/32 DIN
Control mode	ON / OFF	■	■	■	■	■	■	■
	PID		■ *1					
	2-PID *2			■	■	■	■	■
	Operation *3		H	H / C	H & C	H & C	H & C	H & C
	Position proportional *4							
Features	Accuracy	±2%		±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Auto-tuning			■	■	■	■	■
	Self-tuning			■	■	■	■	■
	Transfer output							
	Remote input							
	Number of alarms	1		2	3	3	3	1
	Heater burnout				□	□	□ *5	□
	IP rating front panel	IP20	IP40	IP65	IP66	IP66	IP66	IP66
	Display	Rotary switch	SV dial	Single 3.5 digit	Dual 4 digit colour change	Dual 4 digit colour change	Dual 4 digit colour change	Dual 4 digit
Supply voltage	110 / 220 VAC	■ 100 to 240	■	■ 100 to 240	■	■	■	■
	24 VAC / VDC	■		□	□	□	□	□
Comms *6	RS-232				□	□		
	RS-485				□	□	□	□
	Event IP	■			□	□	□	
	QLP port				■	■	■	■
	DeviceNet							
Control output	Relay	■	■	■	■	■	■	■
	SSR							
	Voltage (pulse)		■	■	■	■	■	■
	Linear voltage							
	Linear current				■	■	■	
Input type - linear	mA				□	□	□	□
	mV				■	■	■	■
	V				■	■	■	
Input type - thermocouple	K	■	■	■	■	■	■	■
	J	■	■	■	■	■	■	■
	T	■	■	■	■	■	■	■
	E	■	■		■	■	■	■
	L		■	■	■	■	■	■
	U		■	■	■	■	■	■
	N		■	■	■	■	■	■
	R	■	■	■	■	■	■	■
	S	■	■		■	■	■	■
	B	■	■		■	■	■	■
	W							
	PLII	■						
Input type - RTD	Pt100	■	■	■	■	■	■	■
	JPt100			■	■	■	■	■
	THE		■	□				
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*1 P only
*2 2-PID is OMRON´s unique high-performance PID control
*3 H = heat, H / C = heat or cool, H & C = heat and cool
*4 Position proportional = valve control (relay up & down)
*5 Heater alarm = heater burnout & SSR failure detection
*6 PROFIBUS-DP communication option via gateway for E5_N, E5_R, E5ZN, ask your local OMRON representative.
*7 Fuzzy PID available

Temperature controllers

Digital temperature controller	Digital process controller							
								
E5ZN	**E5AK**	**E5EK**	**E5CK**	**E5AK-T**	**E5EK-T**	**E5CK-T**	**E5AR**	**E5ER**
Modular	**Universal**			**Universal / programmer**			**Advanced**	
In-panel type	**On-panel type**							
Multi-loop	**Single loop**						**Multi-loop**	
22.5 x 130 mm	**1/4 DIN**	**1/8 DIN**	**1/16 DIN**	**1/4 DIN**	**1/8 DIN**	**1/16 DIN**	**1/4 DIN**	**1/8 DIN**
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
H & C	H & C	H & C	H & C	H & C	H & C	H & C	H & C	H & C
	■	■		■	■		■	■
±0.5%	±0.3%	±0.3%	±0.3%	±0.3%	±0.3%	±0.3%	±0.1%	±0.1%
■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■		
■	□	□	□	□	□	□	■	■
	□	□					■	■
2	3	3	3	3	3	3	4	4
■	□	□	Loop burnout	□	□	Loop burnout		
	IP66	IP66	IP66	IP66	IP66	IP66	IP66	IP66
□ Dual 4 digit	Dual 4 digit	Dual 4 digit	Dual 4 digit	Dual 4 digit	Dual 4 digit	Dual 4 digit	Triple 5 digit	Triple 5 digit
	■	■	■	■	■	■	■	■
■	□	□	□	□	□	□	□	□
	□	□	□	□	□	□		
■	□	□	□	□	□	□	□	□
■	□	□	□	□	□	□	■	■
	■	■	■	■	■	■	■	■
□		□					□	□
	■	■	■	■	■	■	■	■
	■	■		■	■			
■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■		
■	■	■	■	■	■	■	■	■
□	■	■	■	■	■	■	■	■
■								
	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■
	■	■	■	■	■	■		
■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■		
229	230						231	

■ Standard   □ Available   ☐ No / not available

Affordable and compact temperature alarm unit

This temperature monitoring relay was designed specially for monitoring abnormal temperatures to prevent excessive temperature increase and to protect equipment. K8AB-TH provides temperature monitoring in slim design with a width of just 22.5 mm.

- Simple function settings using DIP switch
- Selectable alarm latch and SV setting protection
- Multi-input support for thermocouple or Pt100 sensor input
- Changeover relay: fail-safe selectable
- Alarm status identification with LED

CE

Ordering information

Input type	Temperature setting range	Setting unit	Supply voltage	Size in mm (HxWxD)	Model
Thermocouple / Pt100	0 to 399 °C / F	1 °C / F	100 to 240 VAC	90x22.5x100	K8AB-TH11S 100-240
			24 VAC / VDC		K8AB-TH11S 24
Thermocouple	0 to 1,800 °C 0 to 3,200 °F	10 °C / F *1	100 to 240 VAC		K8AB-TH12S 100-240
			24 VAC / VDC		K8AB-TH12S 24

*1 Setting range depending on sensor type selected

Specifications

		100 to 240 VAC 50 / 60 Hz	24 VAC 50 / 60 Hz or 24 VDC
Allowable voltage range		85% to 110% of power supply voltage	
Power consumption		5 VA max.	2 W max. (24 VDC), 4 VA max. (24 VAC)
Sensor inputs	**K8AB-TH11S**	Thermocouple: K, J, T, E; platinum-resistance thermometer: Pt100	
	K8AB-TH12S	Thermocouple: K, J, T, E, B, R, S, PLII	
Output relay		One SPDT relay (3 A at 250 VAC, resistive load)	
External inputs (for latch setting)	**Contact input**	ON: 1 kΩ 2 max., OFF: 100 kΩ 2 min.	
	Non-contact input	ON residual voltage: 1.5 V max., OFF leakage current: 0.1 mA max.	
		Leakage current: approx. 10 mA	
Setting method		Rotary switch setting (set of three switches)	
Indicators		Power (PWR): green LED, relay output (ALM): red LED	
Other functions		Alarm mode (upper limit / lower limit), output normally ON / OFF selection, output latch, setting protection, temperature unit °C / °F	
Ambient operating temperature		-10 °C to 55 °C (with no condensation or icing); for 3-year guarantee: -10 °C to 50 °C	
Storage temperature		-25 °C to 65 °C (with no condensation or icing)	
Setting accuracy		±2% of full scale	
Hysteresis width		2 °C	
Output relay	**Resistive load**	3 A at 250 VAC ($\cos\phi$ = 1), 3 A at 30 VDC (L / R = 0 ms)	
	Inductive load	1 A at 250 VAC ($\cos\phi$ = 0.4), 1 A at 30 VDC (L / R = 7 ms)	
	Minimum load	10 mA at 5 VDC	
	Maximum contact voltage	250 VAC	
	Maximum contact current	3 A AC	
	Maximum switching capacity	1,500 VA	
	Mechanical life	10,000,000 operations	
	Electrical life	Make: 50,000 times, break: 30,000 times	
Sampling cycle		500 ms	
Weight		130 g	
Degree of protection		IP20	
Memory protection		Non-volatile memory (number or writes: 200,000)	
Safety standards	**Approved standards**	EN 61010-1	
	Application standards	EN 61326 and EN 61010-1 (pollution level 2, overvoltage category II)	
Crimp terminals		Two solid wires of 2.5 mm^2 or two ferrules of 1.5 mm^2 with insulation sleeves can be tightened together	
Case color		Munsell 5Y8/1 (ivory)	
Case material		ABS resin (self-extinguishing resin)	
Mounting		Mounted to DIN-rail or with M4 screws	
Size in mm		90Hx22.5Wx100D	

Easy-to-use, basic temperature controller with analogue dial setting

OMRON's basic ON / OFF or PD controller features an analogue setting dial. This compact, low-cost controller has a setting accuracy of 2% of full scale. It incorporates a plug-in socket allowing for DIN-rail or flush mounting.

- Compact, cost-effective controller
- Control mode: ON / OFF or PD
- Control output: relay
- Power supply: 100 - 120 / 200 - 240 VAC
- Thermocouple K: 0 to 1200°C, L: 0 to 400°C, Pt100: -50 to 200°C

Ordering information

Setting method	Indication method	Control mode	Output	Model				Voltage
				Thermocouple		Platinum resistance thermometer Pt100	Thermistor THE	
				K (CA) chromel vs. alumel	L (IC) iron vs. constantan			
Analogue setting	No indication	ON / OFF	Relay	E5C2-R20K	E5C2-R20L-D	E5C2-R20P-D	E5C2-R20G	100/110/120 VAC
		P	Relay	E5C2-R40K	E5C2-R40L-D	E5C2-R40P-D		200/220/240 VAC

Input ranges	Thermocouple *1		Platinum resistance thermometer	Thermistor *2
	K (CA) chromel vs. alumel	L (IC) iron vs. constantan	Pt100	THE
°C	0 to 200 (5), 0 to 300 (10), 0 to 400 (10), **0 to 600 (20),** 0 to 800 (20), 0 to 1,000 (25), **0 to 1,200 (25)**	**0 to 200 (5),** **0 to 300 (10),** 0 to 400 (10) **5 to 450 (10)**	-50 to 50 (2), -20 to 80 (2), 0 to 50 (1), **0 to 100 (2),** **0 to 200 (5),** **0 to 300 (10),** 0 to 400 (10)	-50 to 50 (2) (6 kΩ at 0 °C), 0 to 100 (2) (6 kΩ at 0 °C), 50 to 150 (2) (30 kΩ at 0 °C)
°F	32 to 392 (10), 32 to 572 (20), 32 to 752 (20), 32 to 1,112 (40), 32 to 1,472 (50), 32 to 1,832 (50), 32 to 2,192 (50)	32 to 392 (10), 32 to 572 (20), 32 to 752 (20)	32 to 212 (5), 32 to 392 (10)	

*1 Values in ( ) are the minimum unit.
*2 Values in ( ) are the thermistor resistive value.
*3 Preferred stock items are R20. Types + 200-240 AC

Bold = preferred stock item *3

Accessories

Functions	Model
Front connecting socket with finger protection	P2CF-08-E
Back connecting socket (for flush mounting)	P3G-08
Finger protection cover (for P3G-08)	Y92A-48G
Protective front cover (IP66)	Y92A-48B

Specifications

Thermocouple input type	K, L (with sensor break detection)
RTD input type	Pt100, THE
Control mode	ON / OFF or P control
Setting method	Analogue setting
Output	Relay, SPDT, 3 A at 250 VAC
Life expectancy	Electrical: 100,000 operations min.
Setting accuracy	±2% FS max.
Hysteresis	Approx. 0.5% FS (fixed)
Proportional band	3% FS (fixed)
Reset range	5 ±1% FS min.
Control period	20 s
IP Rating front panel	IP40 (IP66 cover available)
IP rating terminals	IP00
Ambient temperature	-10 °C to 55 °C
Size in mm	48Hx48Wx96D

Easy setting using DIP switch and simple functions within DIN 48x48 mm

This multi-range 1/16 DIN controller with alarm function offers field-selectable PID control or ON / OFF control. The large, single display shows process value, direction of deviation from set point, output and alarm status.

- All setting field configurable with switches
- Multi-input (thermocouple / Pt100)
- Clearly visible 3.5-digit display with character height of 13.5 mm
- Control output: relay, voltage (for driving SSR)
- ON / OFF or 2-PID control with auto-tuning and self-tuning

Ordering information

Size in mm	Power supply voltage	Number of alarm points	Control output	TC/Pt universal input case color: black
1/16 DIN 48Hx48Wx78D	100 to 240 VAC	1	Relay	**E5CSV-R1T-500 AC100-240**
			Voltage (for driving SSR)	**E5CSV-Q1T-500 AC100-240**
	24 VAC / VDC	1	Relay	E5CSV-R1TD-500 AC/DC24
			Voltage (for driving SSR)	E5CSV-Q1TD-500 AC/DC24

Note: Other models are available on request. **Bold** = preferred stock item

Specifications

Supply voltage		100 to 240 VAC, 50 / 60 Hz or 24 VAC / VDC (depending on model)
Operating voltage range		85% to 110% of rated supply voltage
Power consumption		5 VA
Sensor input		Multi-input (thermocouple / platinum resistance thermometer): K, J, L, T, U, N, R, Pt100, JPt100
Control output	**Relay output**	SPST-NO, 250 VAC, 3A (resistive load)
	Voltage output (for driving SSR)	12 VDC, 21 mA (with short-circuit protection circuit)
Control method		ON / OFF or 2-PID (with auto-tune and self-tune)
Alarm output		SPST-NO, 250 VAC, 1 A (resistive load)
Setting method		Digital setting using front panel keys (functionality set-up with DIP switch)
Indication		7-segment digital display (character height: 13.5 mm) and deviation indicators
Ambient temperature		-10 °C to 55 °C (with no condensation or icing)
Setting / indication accuracy		±0.5% of indication value or ±1 °C, whichever is greater ±1 digit max.
Hysteresis (for ON / OFF control)		0.2% FS (0.1% FS for multi-input (thermocouple / platinum resistance thermometer) models)
Proportional band (P)		1 to 999 °C (automatic adjustment using AT / ST)
Integral time (I)		0 to 1,999 s (automatic adjustment using AT / ST)
Derivative time (D)		0 to 1,999 s (automatic adjustment using AT / ST)
Control period		2 / 20 s
Sampling period		500 ms
Electrical life expectancy		100,000 operations min. (relay output models)
Weight		Approx. 120 g (controller only)
Degree of protection		Front panel: equivalent to IP66; rear case: IP20; terminals: IP00
Memory protection		EEPROM (non-volatile memory) (number of writes: 1,000,000)
Size in mm		48Hx48Wx78D

Compact and intelligent general-purpose controllers

The E5□N general-purpose line of temperature controllers is available in 4 standard DIN formats. They all feature a high-intensity dual LCD display with a wide viewing angle. Except for the E5GN, the series features 3-colour PV change for easy status recognition.

- Control mode: ON / OFF or 2-PID
- Control output: relay, hybrid relay, voltage (SSR) or linear current
- Power supply: 100 / 240 VAC or 24 VDC / VAC
- Easy PC connection for parameter cloning, setting and tuning
- Easy set-up and operation

Ordering information

Type	Input	Output	Fixed option	Alarms	48x24 mm model		Voltage	
					Thermocouple	Pt100, JPt100		
On-panel		relay		1	**E5GN-R1TC**	**E5GN-R1P**	**AC100-240**	**or DC/AC 24**
		voltage (pulse)			**E5GN-Q1TC**	**E5GN-Q1P**	**AC100-240**	**or DC/AC 24**
		relay	RS-485 communication	0	E5GN-R03TC-FLK	**E5GN-R03P-FLK**	**AC100-240**	or DC/AC 24
		voltage (pulse)			E5GN-Q03TC-FLK	E5GN-Q03P-FLK	AC100-240	or DC/AC 24

Type	Input	Output	Fixed option	Alarms	48x48 mm model	Voltage	
On-panel	temperature (TC / Pt / mV)	relay		2	**E5CN-R2MT-500**	**AC100-240**	**or DC/AC 24**
		voltage (pulse)			**E5CN-Q2MT-500**	**AC100-240**	**or DC/AC 24**
		linear current			**E5CN-C2MT-500**	**AC100-240**	**or DC/AC 24**
		hybrid relay			**E5CN-Y2MT-500**	**AC100-240**	
	analogue (mA / V)	relay			**E5CN-R2ML-500**	**AC100-240**	**or DC/AC 24**
		voltage (pulse)			**E5CN-Q2ML-500**	**AC100-240**	**or DC/AC 24**
		linear current			**E5CN-C2ML-500**	**AC100-240**	**or DC/AC 24**
		hybrid relay			**E5CN-Y2ML-500**	**AC100-240**	
In-panel	temperature (TC / Pt / mV)	relay		2	**E5CN-R2TU**	**AC100-240**	**or DC/AC 24**
		voltage (pulse)			**E5CN-Q2TU**	**AC100-240**	**or DC/AC 24**

Type	Input	Output	Fixed option	Alarms	48x96 mm model	96x96 mm model	Voltage	
On-panel	temperature (TC / Pt / mV)	linear current		3	**E5EN-C3MT-500**	**E5AN-C3MT-500**	**AC100-240**	**or DC/AC 24**
			hybrid relay	3	**E5EN-C3YMT-500**	**E5AN-C3YMT-500**	**AC100-240**	
			voltage (pulse)		**E5EN-C3QMT-500**	**E5AN-C3QMT-500**	**AC100-240**	
		voltage (pulse)		3	**E5EN-Q3MT-500**	E5AN-Q3MT-500	**AC100-240**	**or DC/AC 24**
			hybrid relay		**E5EN-Q3YMT-500**	**E5AN-Q3YMT-500**	**AC100-240**	
			voltage (pulse)	3	**E5EN-Q3QMT-500**	**E5AN-Q3QMT-500**	**AC100-240**	
			heater alarm		**E5EN-Q3HMT-500**	**E5AN-Q3HMT-500**	**AC100-240**	or DC/AC 24
			3-phase HA		**E5EN-Q3HHMT-500**	**E5AN-Q3HHMT-500**	**AC100-240**	
			power supply		**E5EN-Q3PMT-500**		**AC100-240**	
		relay		3	**E5EN-R3MT-500**	**E5AN-R3MT-500**	**AC100-240**	**or DC/AC 24**
			voltage (pulse)		**E5EN-R3QMT-500**	**E5AN-R3QMT-500**	**AC100-240**	
			heater alarm		**E5EN-R3HMT-500**	**E5AN-R3HMT-500**	**AC100-240**	**or DC/AC 24**
			3-phase HA		**E5EN-R3HHMT-500**	**E5AN-R3HHMT-500**	**AC100-240**	
			power supply		**E5EN-R3PMT-500**		**AC100-240**	
	analogue (mA / V)	linear current		3	**E5EN-C3ML-500**		**AC100-240**	
		voltage (pulse)		3	**E5EN-Q3ML-500**		**AC100-240**	
			hybrid relay		**E5EN-Q3YML-500**		**AC100-240**	
			heater alarm		**E5EN-Q3HML-500**	**E5AN-Q3HML-500**	**AC100-240**	
		relay		3	**E5EN-R3ML-500**		**AC100-240**	
			heater alarm		**E5EN-R3HML-500**	**E5AN-R3HML-500**	**AC100-240**	

Note:
- Output relay: 3 A / 250 VAC, electrical life: 100,000 operations
- Output voltage (pulse): 12 V, 21 mA
- Hybrid relay (long life relay) electrical life 1,000,000 operations
- Linear current: 0(4) - 20 mA
- Heater alarm = heater burnout + SSR short detection
- Voltage: specify the power supply specifications (voltage) when ordering

Bold = preferred stock item

Accessories

E5CN option boards

(do no fit in E5CN-U types; one slot available in each instrument)

Model	Option			
E53-CNH03N	RS-485	heater alarm		
E53-CN03N	RS-485			
E53-CNHBN		heater alarm	event input	
E53-CNBN			event input	
E53-CNHH03N	RS-485	3-phase HA		
E53-CNQ03N	RS-485			voltage (pulse)
E53-CNQHN		heater alarm		voltage (pulse)
E53-CNPBN			event input	power supply 12 VDC / 20 mA
E53-CNPHN		heater alarm		power supply 12 VDC / 20 mA

E5AN / -EN option boards

(one slot available in each instrument)

Model	Option
E53-EN01	RS-232 communications (Compoway-F / Modbus)
E53-EN03	RS-485 communications (Compoway-F / Modbus)
E53-AKB	event input

E5_N series optional tools

Model	Option
E58-CIFQ1	USB PC based configuration cable 
CX-Thermo	PC based configuration and tuning software
ThermoMini	PC based parameter cloning software (free)
P2CF-08-E	Standard 8 pin socket for E5CN-□□□U type

Specifications

Heater alarm	yes, optional; 1 + 3-phase option
Thermocouple input type	K, J, T, E, L, U, N, R, S, B
RTD input type	Pt100, JPt100
Linear input type	mV, mA (optional), V (not for -GN)
Control mode	ON / OFF, 2-PID, heat and / or cool
Accuracy	±0.5% of indicated value
Auto-tuning	yes
Self-tuning	yes
RS-232	-AN / -EN: optional
RS-485	optional
Event input	optional (not for -GN)
QLP port (USB connection PC)	yes (not for -GN)
Ambient temperature	-10 °C to 55 °C
IP Rating front panel	IP66
Sampling period	500 ms for -GN, 250 ms for -CN, -EN, -AN

In-panel, DIN-rail mounted modular multi-loop temperature controllers

This modular temperature controller consists of 22.5 mm wide modules with 2 channels per module. Via RS-485 one can build up to a maximum of 32 control loops. The modularity of E5ZN enables easy exchange and replacement of the individual modules.

- Output: SSR, transistor, current, transfer outputs and event in- and outputs
- Alarms and load-fail detection, LED indicators for status
- Control mode: ON / OFF and 2-PID
- Easy connection to PLC and HMI or PC
- Configuration by separate setting unit (E5ZN-SDL) and tool software

Ordering information

Functions		Control output	Auxiliary output	Input type *1	Model
Heating or heat / cool control *2 Event input: 1 point per unit	Heater burnout alarm *3	Voltage (pulse) output	Transistor output: 2 pts (sinking)	Thermocouple	E5ZN-2QNH03TC-FLKDC24
				Platinum resistance thermometer	E5ZN-2QNH03P-FLKDC24
			Transistor output: 2 pts (sourcing)	Thermocouple	E5ZN-2QPH03TC-FLKDC24
				Platinum resistance thermometer	E5ZN-2QPH03P-FLKDC24
		Transistor output	Transistor output: 2 pts (sinking)	Thermocouple	**E5ZN-2TNH03TC-FLKDC24**
				Platinum resistance thermometer	**E5ZN-2TNH03P-FLKDC24**
			Transistor output: 2 pts (sourcing)	Thermocouple	**E5ZN-2TPH03TC-FLKDC24**
				Platinum resistance thermometer	**E5ZN-2TPH03P-FLKDC24**
	Transfer output *4	Analogue output (current output)*4	Transistor output: 2 pts (sinking)	Thermocouple	E5ZN-2CNF03TC-FLKDC24
				Platinum resistance thermometer	E5ZN-2CNF03P-FLKDC24
			Transistor output: 2 pts (sourcing)	Thermocouple	**E5ZN-2CPF03TC-FLKDC24**
				Platinum resistance thermometer	**E5ZN-2CPF03P-FLKDC24**

*1 Thermocouple models provide analogue input and input for infrared temperature sensors (ES1B). **Bold** = preferred stock item
*2 When using heating and cooling control functionality, the auxiliary output will be either heating control output or cooling control output.
*3 When using the heater burnout alarm, purchase a current transformer (CT) separately.
*4 When connecting the load of the controlled system, heat control output or cool control output can be allocated to the control output or auxiliary output. When connecting a recording device or digital panel meter, transfer output (volt) can be allocated to control output or auxiliary output 3 or 4 of analogue output models.

Note: Terminal units are required for wiring. Purchase separately.

Accessories

Terminal unit (includes bus system without backplane)

no. of terminals	Functions	Model
24	Master socket, equipped with terminals for power supply, communications and display unit	**E5ZN-SCT24S-500**
18	Extension socket	**E5ZN-SCT18S-500**

Current transformer

Diameter	Model
5.8 dia.	**E54-CT1**
12.0 dia.	E54-CT3

Setting display unit

Power Supply	Model
24 VDC	**E5ZN-SDL**

Sockets for E5ZN-SDL

Type	Model
Front-connecting socket (with finger protection)	**P2CF-11-E**
Back-connecting socket (for control panel mounting)	**P3GA-11**
Terminal cover for finger protection	**Y92A-48G**

DeviceNet gateway

Functions	Model
Connects up to 16 E5ZN modules to DeviceNet (fits into master socket), 24 VDC supply voltage	**E5ZN-DRT**

Bold = preferred stock item

Specifications

Heater burnout	yes
Thermocouple input type	K, J, T, E, L, U, N, R, S, B
RTD input type	Pt100, JPt100
Linear input type	mA, 0-50 mV
Control mode	2-PID or ON / OFF Control
Accuracy	0.5% FS
Auto-tuning	yes
RS-485	yes
Event input	yes
DeviceNet	optional
Ambient temperature	-10 °C to 55 °C
Sampling period	500 ms
Size in mm	130Hx22.5Wx112D

Advanced compact digital process controllers

The E5□K series of advanced controllers provides standard models and models with programmer functionality. The modular structure of the series makes it very versatile. A number of tuning functions are provided, including auto-tuning, self-tuning and fuzzy self-tuning.

- 96Hx48Wx100D / 53Hx53Wx100D / 96Hx96Wx100D mm
- Control mode: ON / OFF or PID
- Control output: relay, SSR, voltage or current
- Universal inputs (Pt100 / thermocouple / volt / milliampere)
- Supported by ThermoTools PC Software

Ordering information

Specification	Alarms	Standard model	Programmer model 48x48 mm	Voltage
Base unit	1	E5CK-AA1	E5CK-TAA1	AC100-240 or DC/AC 24
Base unit with terminal cover		**E5CK-AA1-500**	**E5CK-TAA1-500**	
Specification	**Alarms**	**Standard model**	**Programmer model 48x96 mm**	**Voltage**
Standard model	2	E5EK-AA2	E5EK-TAA2	AC100-240 or DC/AC 24
Standard model with terminal cover		**E5EK-AA2-500**	**E5EK-TAA2-500**	
Position-proportional model		E5EK-PRR2	E5EK-TPRR2	
Position-proportional model with terminal cover		**E5EK-PRR2-500**	E5EK-TPRR2-500	
Standard mode with terminal cover and DeviceNet		E5EK-AA2-DRT-500		AC100-240
Specification	**Alarms**	**Standard model**	**Programmer model 96x96 mm**	**Voltage**
Standard model	2	E5AK-AA2	E5AK-TAA2	AC100-240 or DC/AC 24
Standard model with terminal cover		**E5AK-AA2-500**	**E5AK-TAA2-500**	
Position-proportional model		E5AK-PRR2	E5AK-TPRR2	
Position-proportional model with terminal cover		**E5AK-PRR2-500**	E5AK-TPRR2-500	

Note: A single output unit and option unit can be mounted to each E5CK base unit.

Option Units

Model	Name	Model	Specification
E5CK	Output units	**E53-R4R4**	Relay / relay
		E53-Q4R4	Pulse (NPN) / relay
		E53-Q4HR4	Pulse (PNP) / relay
		E53-C4R4	Linear (4 to 20 mA) / relay
		E53-C4DR4	Linear (0 to 20 mA) / relay
		E53-V44R4	Linear (0 to 10 V) / relay
		E53-Q4Q4	Pulse (NPN) / pulse (NPN)
		E53-Q4HQ4H	Pulse (PNP) / pulse (PNP)
	Option units	**E53-CK01**	RS-232C
		E53-CK03	RS-485
		E53-CKB	Event input: 1 point
		E53-CKF	Transfer output (4 to 20 mA)

Model	Name	Model	Specification
E5AK E5EK	Output units	**E53-R**	Relay
		E53-S	SSR
		E53-Q	Pulse (NPN) 12 VDC
		E53-Q3	Pulse (NPN) 24 VDC
		E53-Q4	Pulse (PNP) 24 VDC
		E53-C3	Linear (4 to 20 mA)
		E53-C3D	Linear (0 to 20 mA)
		E53-V34	Linear (0 to 10 V)
		E53-V35	Linear (0 to 5 V)
	Option units	**E53-AKB**	Event input
		E53-EN01	Communication (RS-232C)
		E53-EN02	Communication (RS-422)
		E53-EN03	Communication (RS-485)
		E53-AKF	Transfer output

Bold = preferred stock item

Specifications

Heater burnout	Optional, CK: loop burnout
Thermocouple input type	K, J, T, E, L, U, N, R, S, B, W, PLII
RTD input type	Pt100, JPt100
Linear input type	mA, 0 to 50 mV
Control mode	2-PID or ON / OFF control
Accuracy	0.3% FS, 1 digit max.
Self-tuning	yes
Auto-tuning	yes
RS-485	optional
Event input	optional
Ambient temperature	-10 °C to 55 °C
IP rating front panel	IP66
Sampling period	Temperature input: 250 ms Linear input: 100 ms

Digital process controllers with high speed and precision, multiple I/O

The E5_R series provides you with high-accuracy inputs (0.01°C for Pt100) and a 50ms sample and control cycle for all four loops. Its unique disturbance overshoot reduction adjustment ensures solid, robust control.

- 96Hx48Wx110D / 96Hx96Wx110D mm
- Control mode: ON / OFF or 2-PID
- Control output: voltage (puls), linear (mA) and relay valve positioning
- Power supply: 100 - 240 VAC or 24 VAC / VDC
- Supported by CX-Thermo PC software

Ordering information

Functions	Loops	Input		Output		Comms	48x96 mm model	Voltage	
		Analogue	Event	Control	Alarm				
standard	1	1	2	2 QC+Q	4R	-	**E5ER-Q4B**	**AC100-240**	or DC/AC 24
standard	1	1	2	2 QC+Q	4R	RS-485	E5ER-Q43B-FLK	AC100-240	
standard	1	1	2	4 QC+Q+C+C	4R	RS-485	**E5ER-QC43B-FLK**	**AC100-240**	or DC/AC 24
standard	1	1	6	2 QC+Q	2T	RS-485	E5ER-QT3DB-FLK	AC100-240	
standard	max 2	2	4	2 QC+Q	2T	RS-485	**E5ER-QT3DW-FLK**	**AC100-240**	or DC/AC 24
standard	1	1	2	2 C+C	4R	-	**E5ER-C4B**	**AC100-240**	or DC/AC 24
standard	1	1	2	2 C+C	4R	RS-485	E5ER-C43B-FLK	AC100-240	
standard	1	1	6	2 C+C	2T	RS-485	E5ER-CT3DB-FLK	AC100-240	
standard	max 2	2	4	2 C+C	2T	RS-485	**E5ER-CT3DW-FLK**	**AC100-240**	or DC/AC 24
valve	1	1 + pot	4	2 R+R	2T	-	E5ER-PRTDF	AC100-240	or DC/AC 24
valve	1	1 + pot	-	4 R+R+QC+Q	4R	RS-485	E5ER-PRQ43F-FLK	AC100-240	or DC/AC 24
standard	1	1	2	2 QC+Q	2T	DeviceNet	E5ER-QTB-DRT	AC100-240	or DC/AC 24
standard	max 2	2	-	2 QC+Q	2T	DeviceNet	E5ER-QTW-DRT	AC100-240	or DC/AC 24
standard	1	1	2	2 C+C	2T	DeviceNet	E5ER-CTB-DRT	AC100-240	or DC/AC 24
standard	max 2	2	-	2 C+C	2T	DeviceNet	E5ER-CTW-DRT	AC100-240	or DC/AC 24
valve	1	1 + pot	-	2 R+R	2T	DeviceNet	E5ER-PRTF-DRT	AC100-240	or DC/AC 24
Functions	**Loops**	**Input**		**Output**		**Comms**	**96x96 mm Model**	**Voltage**	
		Analogue	**Event**	**Control**	**Alarm**				
standard	1	1	2	2 QC+Q	4R	-	**E5AR-Q4B**	**AC100-240**	or DC/AC 24
standard	1	1	2	2 QC+Q	4R	RS-485	E5AR-Q43B-FLK	AC100-240	
standard	1	1	6	2 QC+Q	4R	RS-485	E5AR-Q43DB-FLK	AC100-240	
standard	1	1	6	4 QC+Q+C+C	4R	RS-485	**E5AR-QC43DB-FLK**	**AC100-240**	or DC/AC 24
standard	max 2	2	4	2 QC+Q	4R	RS-485	E5AR-Q43DW-FLK	AC100-240	
standard	max 2	2	4	4 QC+Q+QC+Q	4R	RS-485	**E5AR-QQ43DW-FLK**	**AC100-240**	or DC/AC 24
standard	max 4	4	4	4 QC+Q+QC+Q	4R	RS-485	**E5AR-QQ43DWW-FLK**	**AC100-240**	
standard	1	1	2	2 C+C	4R	-	**E5AR-C4B**	**AC100-240**	or DC/AC 24
standard	1	1	2	2 C+C	4R	RS-485	E5AR-C43B-FLK	AC100-240	
standard	1	1	6	2 C+C	4R	RS-485	E5AR-C43DB-FLK	AC100-240	
standard	max 2	2	4	2 C+C	4R	RS-485	E5AR-C43DW-FLK	AC100-240	
standard	max 4	4	4	4 C+C+C+C	4R	RS-485	**E5AR-CC43DWW-FLK**	**AC100-240**	or DC/AC 24
valve	1	1 + pot	4	2 R+R	4R	-	E5AR-PR4DF	AC100-240	or DC/AC 24
valve	1	1 + pot	4	4 R+R+QC+Q	4R	RS-485	E5AR-PRQ43DF-FLK	AC100-240	or DC/AC 24
standard	1	1	2	2 QC+Q	4R	DeviceNet	E5AR-Q4B-DRT	AC100-240	or DC/AC 24
standard	1	1	2	4 QC+Q+C+C	4R	DeviceNet	E5AR-QC4B-DRT	AC100-240	or DC/AC 24
standard	max 2	2	-	4 QC+Q+QC+Q	4R	DeviceNet	E5AR-QQ4W-DRT	AC100-240	or DC/AC 24
standard	1	1	2	2 C+C	4R	DeviceNet	E5AR-C4B-DRT	AC100-240	or DC/AC 24
standard	max 4	4	-	4 C+C+C+C	4R	DeviceNet	E5AR-CC4WW-DRT	AC100-240	or DC/AC 24
valve	1	1 + pot	-	2 R+R	4R	DeviceNet	E5AR-PR4F-DRT	AC100-240	or DC/AC 24
valve	1	1 + pot	-	4 R+R+QC+Q	4R	DeviceNet	E5AR-PRQ4F-DRT	AC100-240	or DC/AC 24

Note: - Voltage: specify the power supply specifications (voltage) when ordering.
- standard = heat and / or cool PID control, valve = valve positioning (relay up / down) (PRR)
- max 2 = 2 loops heat and / or cool or 1 loop cascade, ratio or remote SP
- max 4 = 4 loops heat and / or cool
- 1, 2 or 4 = number of analogue universal input 1 + pot = 1 universal and 1 slide wire feedback from valve
- QC = voltage (pulse) or current (switch), Q = voltage (pulse), C = current, 4R = 4 two pole relay, 2T = two transistor output NPN

Bold = preferred stock item

Terminal cover for E5AR	**E53-COV14**
Terminal cover for E5ER	**E53-COV15**

Specifications

Thermocouple input type	K, J, T, E, L, U, N, R, S, B, W
RTD input type	Pt100
Linear input type	mA, V
Control mode	2-PID or ON / OFF control
Accuracy	±0.1% FS
Auto-tuning	yes
RS-485	optional
Event input	optional
Ambient temperature	-10 °C to 55 °C
IP rating front panel	IP66
Sampling period	50 ms
Size in mm	E5ER: 96Hx48Wx110D E5AR: 96Hx96Wx110D

OMRON's intelligent PROFIBUS-DP and Compoway/F gateway

This gateway supports all Compoway/F equipped products, including temperature controllers, digital panel indicators, etc. It can also be used for connecting MCW151-E and E5_K series.

- Cost-effectively integrates basic instruments into a PROFIBUS-DP network
- Requires no complex protocol conversion writing
- Has function blocks for drag-and-drop configuration
- Connects up to 15 instruments to a single PROFIBUS point

Ordering information

Name	Model
PROFIBUS remote terminal serial communications unit	PRT1-SCU11

Specifications

Storage temperature	-20 °C to +75 °C
Ambient temperature	0 °C to 55 °C
Ambient humidity	10 to 90% (non-condensing)
EMC compliance	EN 50081-2, EN 61131-2
Power supply	+24 VDC (+10% / -15%) Current consumption 80 mA (typical)
Weight	125 g (typical)
Communication interface	RS-485 based PROFIBUS-DP RS-422A Host link RS-485 CompoWay/F RS-232C Peripheral Port supporting connection to thermotools
Size in mm	90Hx40Wx65D

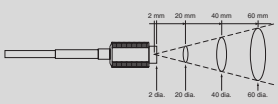
ES1B

Achieve low-cost measurements with an infrared thermosensor

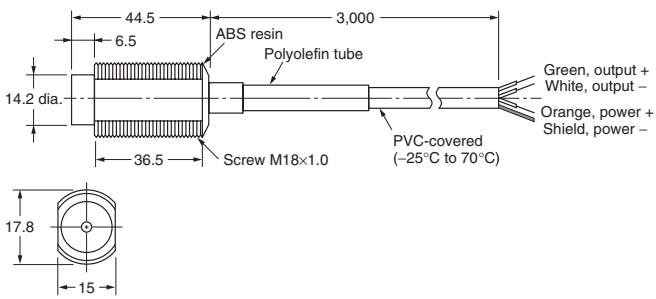
This infrared thermosensor provides an accurate, stable and cost-effective way to measure the temperature of objects. It behaves just like a standard K-type thermocouple, which enables it to operate with any temperature controller or alarm unit.

- Cost-effective infrared thermosensor
- Contactless, meaning no deterioration, unlike thermocouples
- 4 temperature ranges available: 10-70°C, 60-120°C, 115-165°C and 140-260°C
- Response speed 300 ms

Ordering information

Appearance and sensing characteristics	Specification	Model
	10 to 70 °C	ES1B 10-70C
	60 to 120 °C	ES1B 115-165C
	155 to 165 °C	ES1B 140-260C
	140 to 260 °C	ES1B 60-120C

Dimensions (unit: mm)



Specifications

Item		ES1B
Power supply voltage		12 / 24 VDC
Current consumption		20 mA max.
Accuracy	**±5 °C**	±2% PV or ±2 °C, whichever is larger
	±10 °C	±4% PV or ±4 °C, whichever is larger
	±30 °C	±6% PV or ±6 °C, whichever is larger
	±40 °C	±8% PV or ±8 °C, whichever is larger
Reproducibility		±1% PV or ±1 °C, whichever is larger
Temperature drift		0.4 °C / °C max.
Receiver element		Thermopile
Response speed		Approximately 300 ms at response rate of 63%
Operating temperature		-25 °C to 70 °C (with no icing or condensation)
Allowable ambient humidity		35% to 85%
Degree of protection		IP65
Size in mm		head: 17.8 dia. x 44.5 (screw M18 x 1.0), cable 3,000

Power supplies

With the S8VS Micro size IS everything!

Powerful performance in compact design

At just 22.5 mm wide Omron's S8VS Micro series is one of smallest power supplies around, but it delivers more power per cm^3 than almost any similar product in its class!
It provides 100% performance (no derating) right up to its maximum operating temperature. It offers flexible mounting (DIN-rail and horizontal or vertical panel-mounting) for convenient installation. And it is available in 15 W and 30 W models, each of which offers an output voltage choice of 5VDC, 12VDC and 24VDC. A powerful yet cost-effective solution for reducing cabinet space!

Features at a glance:

- Compact size
- No derating
- Easy DIN-rail mounting
- Full range to choose from

What type of network supply is it?

Single-phase

Which type of system is required?

Flexible modular power supply (output, capacity)

Standard power supply

What type is required?

Industrial standard

Preventive maintenance

High power, compact

S8TS

S8VS without display

S82K

S8VS with display

S8VM

S8PS

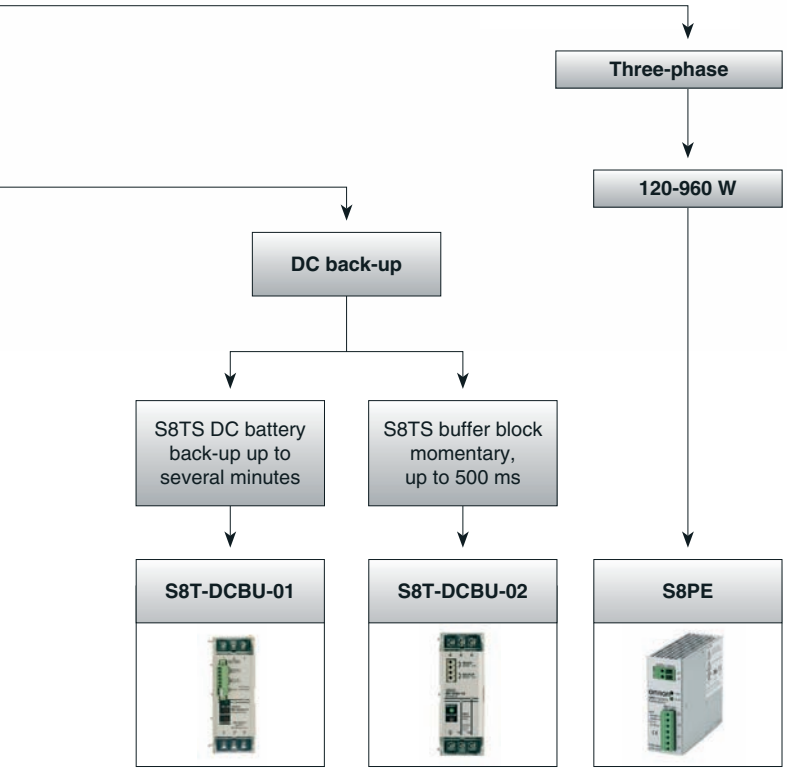
S8VM power supplies

The power supplies that alert you!

This new single-phase industrial switch mode power supply series features an undervoltage alarm that gives a warning in case of failure. The new S8VM series provide not only a clear indication that a DC output voltage drop has occurred, but also indicates the likely cause – allowing for fast, effective corrective action. The power supplies come in a broad 5 to 24 V voltage range, with output powers between 15 and 150 W. Extensions up to 1500 W will be launched in 2006.

Features at a glance

- Timely, efficient on-site troubleshooting for optimum quality management
- New ultra-compact housing supports cabinet downsizing
- Early-warning system
- Easy installation
- Broad product range of DC output voltages from 5 V up to 24 V and in powers from 15 W to 150 W



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Selection table

	Category	Industrial standard	With status monitor					Modular			Back-up
Selection criteria											
	Model	S8VS	S8VS-Bx / -Ax	S8VM				S8TS			
	Phases	Single-phase									
	Rated voltage	100 to 240 VAC									
	Voltage	24 V	24 V	5 V	12 V	15 V	24 V	5 V	12 V	24 V	24 V
Power [W]	3 W										
	7.5 W										
	10 W										
	15 W			■ 3 A	■ 1.3 A	■1 A	■ 0.65 A				
	25 W							■ 5 A			
	30 W			■ 6 A	■ 2.5 A	■ 2 A	■ 1.3 A		■ 2.5 A		
	50 W			■ 10 A	■ 4.3 A	■ 3.5 A	■ 2.2 A				
	60 W	■ 2.5 A	■ 2.5 A						■ 5 A	■ 2.5 A	■ 2.5 A
	90 W	■ 3.75 A	■ 3.75 A						■ 7.5 A		
	100 W			■ 20 A	■ 8.5 A	■ 7 A	■ 4.5 A				
	120 W	■ 5 A	■ 5 A						■ 10 A	■ 5 A	
	150 W			■ 27 A	■ 12.5 A	■ 10 A	■ 6.5 A				
	180 W	■ 7.5 A	■ 7.5 A							■ 7.5 A	
	240 W	■ 10 A	■ 10 A							■ 10 A	
	300 W										
	480 W										
	600 W										
	960 W										
Features	Conforms to EN61000-3-2 A14	■ with PFC	■ with PFC	■ with PFC	■ with PFC	■ with PFC	■ with PFC	■ with PFC	■ with PFC	■ with PFC	
	DC back-up							□	□	□	
	Capacitor back-up	□	□							□	■
	Undervoltage alarm	■	■				■	■	■	■	
	Overvoltage protection	■	■	■	■	■	■	■	■	■	■
	Overload protection	■	■	■	■	■	■	■	■	■	■
	DIN-rail mounting	■	■	■	■	■	■	■	■	■	■
	Screw mounting (with bracket)			■	■	■	■				
	EMI Class B			■	■	■	■	■	■	■	■
	UL Class 2	■ only 60 W	■ only 60 W					■	■	■	■
	N+1 redundancy							■	■	■	
	Parallel operation							■	■	■	■
	Series operation	■	■	■	■	■	■	■	■	■	
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	Category	Industrial standard				High power
Selection criteria						
	Model	S82K				S8PE
	Phases	Single-phase				3-phase
	Rated voltage	100 / 200 VAC or 100 to 240 VAC				400 - 480 VAC or 200 - 230 VAC
	Voltage	5 V	12 V	15 V	24 V	24 V
Power [W]	3 W	■ 0.6 A	■ 0.25 A	■ 0.2 A	■ 0.13 A	
	7.5 W	■ 1.5 A	■ 0.6 A	■ 0.5 A	■ 0.3 A	
	10 W					
	15 W	■ 2.5 A	■ 1.2 A		■ 0.6 A	
	25 W					
	30 W	■ 5 A	■ 2.5 A		■ 1.3 A	
	50 W				■ 2.1 A	
	60 W					
	90 W				■ 3.75 A	
	100 W				■ 4.2 A	
	120 W					■ 5 A
	150 W					
	180 W					
	240 W					■ 10 A
	300 W					
	480 W					■ 20 A
	600 W					
	960 W					■ 40 A
Features	Conforms to EN61000-3-2 A14	□	□	□	□	■
	DC back-up					
	Capacitor back-up				□	□
	Undervoltage alarm	■	■	■	□	
	Overvoltage protection					■ except 40 A
	Overload protection	■	■	■	■	■
	DIN-rail mounting	■	■	■	■	■ except 40 A
	Screw mounting (with bracket)	■	■	■	■	■ only 40 A
	EMI Class B	■	■	■		
	UL Class 2	■	■	■	■ except dual output	
	N+1 redundancy					
	Parallel operation				■ only 100 W	■
	Series operation				■ only 90 / 100 W	■
	Page	242				243

■ Standard □ Available No / not available

Compact power supply with diagnostics and output monitor function

S8VS contributes to higher productivity and preventative maintenance of your equipment or machine due to its unique diagnostics feature. Where production stop is critical, such as in the automotive and semiconductor industry, the S8VS with display is ideal (60 to 240 W at 24 VDC).

- Provides a replacement indication (maintenance forecast monitor)
- Provides operation time measurement (total run-time monitor)
- Display shows output values: voltage, current or peak current
- Non-display models available from 15 to 240 W at 5, 12 and 24 VDC
- UL Class 2 (15 - 60 W) and UL Class I div. 2 (15, 30 W); SEMI-F47-0200

Ordering information

Power	Output voltage	Output current	Diagnostics function	Diagnostic alarm output	Size in mm (HxWxD)	Type	
15 W	5 VDC	2 A (10 W)	Undervoltage alarm indicator	no	85x22.5x96.4	**S8VS-01505**	
	12 VDC	1.2 A		no		**S8VS-01512**	
	24 VDC	0.65 A		no		**S8VS-01524**	
30 W	5 VDC	4 A (20 W)		no		**S8VS-03005**	
	12 VDC	2.5 A		no		**S8VS-03012**	
	24 VDC	1.3 A		no		**S8VS-03024**	
60 W	24 VDC	2.5 A	no	no	95x40x108.3	**S8VS-06024**	
90 W	24 VDC	3.75 A		no	115x50x121.3	**S8VS-09024**	
120 W	24 VDC	5 A		no		**S8VS-12024**	
180 W	24 VDC	7.5 A		no	115x75x125.3	**S8VS-18024**	
240 W	24 VDC	10 A		no	115x100x125.3	**S8VS-24024**	
60 W	24 VDC	2.5 A	Maintenance *1	no	95x40x108.3	**S8VS-06024A**	
			Total run-time	no		**S8VS-06024B**	
						Alarm output sinking (NPN)	**Alarm output sourcing (PNP)**
90 W	24 VDC	3.75 A	Maintenance *1	yes	115x50x121.3	**S8VS-09024A**	**S8VS-09024AP**
			Total run-time			**S8VS-09024B**	**S8VS-09024BP**
120 W	24 VDC	5 A	Maintenance *1			**S8VS-12024A**	**S8VS-12024AP**
			Total run-time			**S8VS-12024B**	**S8VS-12024BP**
180 W	24 VDC	7.5 A	Maintenance *1		115x75x125.3	**S8VS-18024A**	**S8VS-18024AP**
			Total run-time			**S8VS-18024B**	**S8VS-18024BP**
240 W	24 VDC	10 A	Maintenance *1		115x100x125.3	**S8VS-24024A**	**S8VS-24024AP**
			Total run-time			**S8VS-24024B**	**S8VS-24024BP**

*1 Maintenance indicates maintenance forecast monitor

Bold = preferred stock item

Specifications

Specification		15 W	30 W	60 W	90 W	120 W	180 W	240 W
Efficiency		77% min. (24 V)	80% min. (24 V)	78% min.	80% min.	80% min.	80% min.	80% min.
Power factor						0.95 min.	0.95 min.	0.95 min.
Input voltage		100 to 240 VAC (85 to 264 VAC), single-phase						
Output voltage	**Voltage adjustment**	±10% to ±15% (with V. ADJ) min.						
	Ripple	2% p-p max. (at rated input / output voltage)						
	Input variation	0.5% max. (at 85 to 264 VAC input, 100% load)						
	Temperature influence	0.05% / °C max.						
Overload protection		105% to 160% of rated load current, voltage drop, automatic reset						
Overvoltage protection		yes	yes	yes	yes	yes	yes	yes
Input current	**100 V**	0.45 A m Ax.	0.9 A m Ax.	1.7 A m Ax.	2.3 A m Ax.	1.9 A m Ax.	2.7 A m Ax.	3.8 A m Ax.
	200 V	0.25 A m Ax.	0.6 A m Ax.	1.0 A m Ax.	1.4 A m Ax.	1.1 A m Ax	1.6 A m Ax.	2.0 A m Ax.
	230 V	0.19 A (5 V: 0.14 A)	0.37 A (5 V: 0.27 A)	0.7 A typ.	0.9 A typ.	0.6 A typ.	0.9 A typ.	1.2 A typ.
Output indicator		yes (green)	yes (green)	yes (green)	yes (green)	yes (green)	yes (green)	yes (green)
Weight		160 g	180 g	330 g	490 g	550 g	850 g	1,150 g
Operating temperature		-10 °C to 60 °C	-10 °C to 60 °C *1	-10 °C to 60 °C, derating beyond 40 °C, no icing or condensation				
Series operation		yes (24 V only)	yes	yes	yes	yes	yes	yes

*1 For 30 W model 24 V: no derating, 12 & 5 V: derating beyond 50 °C.

General-purpose, slim power supply with DC output status monitor

The S8VM is available in a slim housing from 15 to 150 W at 5, 12, 15 and 24 VDC in various configurations. S8VM gives a warning when abnormalities occur, such as input power failure, overload and under-voltage, by watching the DC output behaviour to help you to quickly determine the cause of failure.

- Indicates abnormalities on the load side (undervoltage alarm)
- Indicates input power failure (undervoltage alarm)
- Consistent height in the family for easy cabinet design
- 300 to 1,500 W models to be released soon (see S8PS / S82J until then)
- EMI Class B, UL Class 1 division 2, SEMI-F47-0200 (pending)

Ordering information

Power ratings	Output voltage	Output current	Size in mm (HxWxD)	Open-frame type	Covered type					
				DIN-rail mounting *1	Front-mounting			DIN-rail mounting		
				Standard type	Standard type	Undervoltage alarm type		Standard type	Undervoltage alarm type	
						Sinking (NPN)	Sourcing (PNP)		Sinking (NPN)	Sourcing (PNP)
15 W	5 V	3 A	84.5x35.1x94.4	S8VM-01505D	S8VM-01505C			S8VM-01505CD		
	12 V	1.3 A		S8VM-01512D	S8VM-01512C			S8VM-01512CD		
	15 V	1 A		S8VM-01515D	S8VM-01515C			S8VM-01515CD		
	24 V	0.65 A		S8VM-01524D	S8VM-01524C	S8VM-01524A *2		S8VM-01524CD	**S8VM-01524AD** *2	
30 W	5 V	6 A	84.5x35.1x109.4	S8VM-03005D	S8VM-03005C			**S8VM-03005CD**		
	12 V	2.5 A		S8VM-03012D	S8VM-03012C			**S8VM-03012CD**		
	15 V	2 A		S8VM-03015D	S8VM-03015C			S8VM-03015CD		
	24 V	1.3 A		S8VM-03024D	S8VM-03024C	S8VM-03024A *2		**S8VM-03024CD**	**S8VM-03024AD** *2	
50 W	5 V	10 A	84.5x35.1x124.5	S8VM-05005D	S8VM-05005C			**S8VM-05005CD**		
	12 V	4.3 A		S8VM-05012D	S8VM-05012C			**S8VM-05012CD**		
	15 V	3.5 A		S8VM-05015D	S8VM-05015C			S8VM-05015CD		
	24 V	2.2 A		S8VM-05024D	S8VM-05024C	S8VM-05024A	S8VM-05024P	**S8VM-05024CD**	S8VM-05024AD	**S8VM-05024PD**
100 W	5 V	20 A	84.5x36.6x164.5	S8VM-10005D	S8VM-10005C			**S8VM-10005CD**		
	12 V	8.5 A		S8VM-10012D	S8VM-10012C			**S8VM-10012CD**		
	15 V	7 A		S8VM-10015D	S8VM-10015C			S8VM-10015CD		
	24 V	4.5 A		S8VM-10024D	S8VM-10024C	S8VM-10024A	S8VM-10024P	**S8VM-10024CD**	S8VM-10024AD	**S8VM-10024PD**
150 W	5 V	27 A (135 W)	84.5x45.6x164.5	S8VM-15005D	S8VM-15005C			**S8VM-15005CD**		
	12 V	12.5 A		S8VM-15012D	S8VM-15012C			**S8VM-15012CD**		
	15 V	10 A		S8VM-15015D	S8VM-15015C			S8VM-15015CD		
	24 V	6.5 A		S8VM-15024D	S8VM-15024C	S8VM-15024A	S8VM-15024P	**S8VM-15024CD**	S8VM-15024AD	**S8VM-15024PD**

*1 For open-frame type with front-mounting, remove the 'D' from the ordering number..
*2 No output built-in.

Bold = preferred stock item

Note: The indicated sizes are for DIN-rail mounting covered types. Other types will have slightly different dimensions.

Specifications

			15 W	30 W	50 W	100 W	150 W
Efficiency		**5 V models**	75% min.	75% min.	80% min.	81% min.	81% min.
		12 V models	78% min.	79% min.	79% min.	81% min.	81% min.
		15 V models	78% min.	79% min.	79% min.	81% min.	81% min.
		24 V models	80% min.	81% min.	80% min.	82% min.	83% min.
Input voltage			100 to 240 VAC, (85 to 264 VAC), single phase				
Output	**Voltage adjustment**		±20% with V. ADJ min. (S8VM-□□□24A□ / P□: -10% to 20%)				
	Ripple	**5 V models**	3.2% (p-p) max.		3.2% (p-p) max.		
		12 V models	1.5% (p-p) max.		1.5% (p-p) max.		
		15 V models	1.2% (p-p) max.		1.2% (p-p) max.		
		24 V models	1.0% (p-p) max.		0.75% (p-p) max.		
	Input variation		0.4% max.				
	Temperature influence		0.02% / °C max.				
Overload protection			105% to 160% of rated load current, voltage drop, automatic reset				
Overvoltage protection			yes				
Output indicator			yes (green)				
Weight			180 g max.	220 g max.	290 g max.	460 g max.	530 g max.
Series operation			yes				
Remote sensing function			no	no	no	yes	yes

For full specifications and additional models please refer to the (attached) CD or www.europe.omron.com

Industrial-use, modular power supply for multiple configurations

The S8TS is an expandable power supply; standard units can easily be snapped together in parallel to provide you with ultimate flexibility. Expandable up to 4 units, it can deliver a total power of 240 W at 24 VDC or a multi-output configuration.

- Improves system reliability by building up N+1 redundancy
- Standard unit; 60 W at 24 VDC, 30 W at 12 VDC and 25 W at 5 VDC
- Battery back-up unit protects against power outage (see accessories)
- Buffer unit protects against power glitches and outage (see accessories)
- EMI class B, UL class 2, UL class 1 division 2

Ordering information

Basic block					
Output voltage	**Output current**	**Screw terminal type**		**Connector terminal type**[*1]	
		With bus line connectors[*2]	**Without bus line connectors**[*3]	**With bus line connectors**[*2]	**Without bus line connectors**[*3]
24 V	2.5 A	**S8TS-06024-E1**[*4]	S8TS-06024	S8TS-06024F-E1	S8TS-06024F
12 V	2.5 A	**S8TS-03012-E1**	S8TS-03012	S8TS-03012F-E1	S8TS-03012F
5 V	5 A		**S8TS-02505**		S8TS-02505F

*1 Attached connectors: 2ESDPLM-05P (for output terminal) and 3ESDPLM-03P (for input terminal) made by DINKLE ENTERPRISE. **Bold** = preferred stock item
*2 One S8T-BUS01 connector and one S8T-BUS02 connector are included as accessories.
*3 Bus line connectors can be ordered separately if necessary.
*4 Conforms to EMI class B with DC minus terminal ground.

Accessories

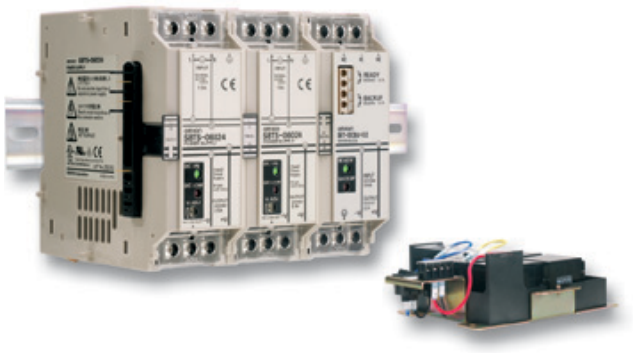
Bus line connector		
Type	**Number of connectors**	**Model number**
AC line + DC line bus (For parallel operation)	1 connector	**S8T-BUS01**
	10 connectors[*1]	**S8T-BUS11**
AC line bus (For series operation or isolated operation)	1 connector	**S8T-BUS02**
	10 connectors[*2]	S8T-BUS12

*1 One package contains 10 S8T-BUS01 connectors.
*2 One package contains 10 S8T-BUS02 connectors.

Bold = preferred stock item

Specifications

		5 V models	24 / 12 V models	
		Single operation	**Single operation**	**Parallel operation**
Efficiency		62% min.	24 V models: 75%, 12 V models: 70% min.	
Power factor		0.8 min.	24 V models: 0.9 min., 12 V models: 0.8 min.	
Input voltage		100 to 240 VAC, (85 to 264 VAC), single-phase		
Output voltage	**Voltage adjustment**	5 V ±10% min.	24 V models: 22 to 28 V, 12 V models: 12 V ±10% min.	
	Ripple	2% (p-p) max.	2% (p-p) max.	2% (p-p) max.
	Input variation	0.5% max.		
	Temperature influence	0.05% / °C max. (with rated input, 10% to 100% load)		
Overcurrent protection		105% to 125% of rated load current, inverted L drop, automatic reset		
Overvoltage protection		yes	yes	yes
Output indicator		yes (green)	yes (green)	yes (green)
Weight		450 g max.	450 g max.	450 g max.
Series operation		yes	yes	yes
Parallel operation		no	yes	yes
Size in mm		120Hx43Wx120D		



S8T-DCBU-01

The S8T-DCBU-01 battery backup block supplies 24 VDC for a fixed period of time during AC input outages to considerably improve system reliability.

Ordering information

Product	Input voltage	Output voltage	Output current			Model number
DC back-up block	24 to 28 VDC	24 V	3.7 A / 8 A			**S8T-DCBU-01**
Battery holder						**S82Y-TS01**
Product	**Input voltage**	**Output voltage**	**Output current**	**Type**		**Model number**
Basic block (use together with the DC back-up block)	100 to 240 VAC	24 V	2.5 A	Screw terminal type	With bus line connectors	**S8TS-06024-E1**
					Without bus line connectors	S8TS-06024
				Connector terminal type	With bus line connectors	S8TS-06024F-E1
					Without bus line connectors	S8TS-06024F
Product	**Back-up time**	**Overcurrent protection operating point selector**				**Model number**
Battery	8 min. / 3.7 A	5.7 A (typ.)				LC-R122R2PG
	4 min. / 8.0 A	5.7 A (typ.)	11.7 A (typ.)			**LC-R123R4PG**

Note: The S8TS DC back-up block is for S8TS power supplies only.

Bold = preferred stock item

Specifications

	Size in mm
S8TS-DCBU-01	120Hx43Wx130D
Battery holder	82Hx185.7Wx222.25D

S8T-DCBU-02

Prevents equipment stoppage, data loss and other problems resulting from momentary power failures. One S8TS-DCBU-02 buffer block provides a back-up time of 500 ms at an output current of 2.5 A. Can be wired to the 24 VDC output from any switch mode power supply.

Ordering information

Input voltage	Output voltage (during back-up operation)	Output current	Model number
24 VDC (24 to 28 VDC)	22.5 V	2.5 A	**S8T-DCBU-02**

Accessories

Type	Number of connectors	Model number
DC bus line connector (for use with S8TS only)	1 connector	S8T-BUS03
	10 connectors	S8T-BUS13

Specifications

	Size in mm
S8TS-DCBU-02	120Hx43Wx120D

All-purpose, industrial use power supply

The S82K has set an industrial standard in power supply history. Available from 3 to 100 W at 5, 12, 15 and 24 VDC.

- Indicates abnormalities on the load side (undervoltage alarm)
- Parallel operation (100 W models)
- ±12 and ±15 VDC output with 7.5 W available
- UL Class 2 (90 W), EMI class B

Ordering information

Power ratings	Output voltage	Output current	Function configuration			Size in mm (HxWxD)	Models
			Output	Undervoltage alarm indicator	Undervoltage alarm output		
3 W	5 V	0.6 A	Single output	yes	no	75x37.5x65	**S82K-00305**
	12 V	0.25 A					**S82K-00312**
	15 V	0.2 A					S82K-00315
	24 V	0.13 A					**S82K-00324**
7.5 W	5 V	1.5 A	Single output	yes	no		**S82K-00705**
	12 V	0.6 A					**S82K-00712**
	15 V	0.5 A					S82K-00715
	24 V	0.3 A					**S82K-00724**
	+V12 / -V12	0.3 A / 0.2 A	Dual output				S82K-00727
	+V15 / -V15	0.2 A / 0.2 A					**S82K-00728**
15 W	5 V	2.5 A	Single output	yes	no	75x45x91	**S82K-01505**
	12 V	1.2 A					**S82K-01512**
	24 V	0.6 A					**S82K-01524**
30 W	5 V	5.0 A (25 W)	Single output	yes	no	75x90x91	**S82K-03005**
	12 V	2.5 A					**S82K-03012**
	24 V	1.3 A					**S82K-03024**
50 W	24 V	2.1 A	Single output	yes	no	75x145x91	**S82K-05024**
90 W	24 V	3.75 A			yes		**S82K-09024**
							S82K-09024-500 *1
100 W		4.2 A *2					**S82K-10024**

*1 Conforms to EMI class B with DC minus terminal ground
*2 The output current during parallel operation is 3.78 A.

Note: Complies to EN61000-3-2 A14 for all models

Bold = preferred stock item

Models with PFC
S82K-P09024
S82K-P10024

Specifications

Specification		Models without PFC								Models with PFC	
		Single output		Dual output	Single output					Single output	
		3 W	7.5 W	7.5 W	15 W	30 W	50 W	90 W	100 W	90 W	100 W
Efficiency		60% to 80% (varies depending on specification)									
Power factor	100 V										0.95 min.
	200 V									0.7 min.	0.95 min.
Input voltage		100 to 240 VAC, single-phase									
Output voltage	Voltage adjustment	±10% (V. ADJ)		not applicable	±10% (V.ADJ), -10% to 15% for S82K-030012 / -03024 / -05024						
	Ripple	2% (p-p max.)									
	Input variation	0.5% max.									
	Temperature influence	0.5% / °C max.									
Overload protection		105% to 160% of rated load current, inverted L drop, automatic reset *1									
Input current max.	100 V	0.15 A	0.25 A		0.45 A	0.9 A	1.3 A	2.5 A		2.5 A	
	200 V				0.25 A	0.6 A	0.8 A	1.5 A		1.0 A	
Output indicator		Yes (green)									
Weight		150 g	260 g		260 g	380 g	400 g	600 g		1,000 g	
Operating temperature		-10 °C to 60 °C with derating from 50 °C, 100 W models: -10 °C to 50 °C, 90 W model derating from 30 °C									
Series operation								yes	yes	yes	yes
Parallel operation									yes		yes

*1 For 7.5 W Dual output 105% to 250% and for 90 W models 101% to 111%

Slim, 3-phase input power supply

S8PE provides all you need for control panel design. From 5 to 40 A available.

- 3-phase input (340 - 576 VAC)
- 5, 10, 20 and 40 A; 24 VDC output
- 50 mm wide with 240 W model
- UL60950 (CSA22.2-60950), UL508 listing (CSA22.2-14) and CE
- Conforms to EN61000-3-2

Ordering information

Power ratings	Output voltage	Output current	Size in mm (HxWxD)	With front-mounting bracket	With DIN-rail mounting bracket
120 W	24 V	5 A	125x50x140		**S8PE-F12024CD**
240 W	24 V	10 A	170x50x140		**S8PE-F24024CD**
480 W	24 V	20 A	133x256x80		**S8PE-F48024CD**
960 W	24 V	40 A	275x246x80	**S8PE-F96024C**	

Bold = preferred stock item

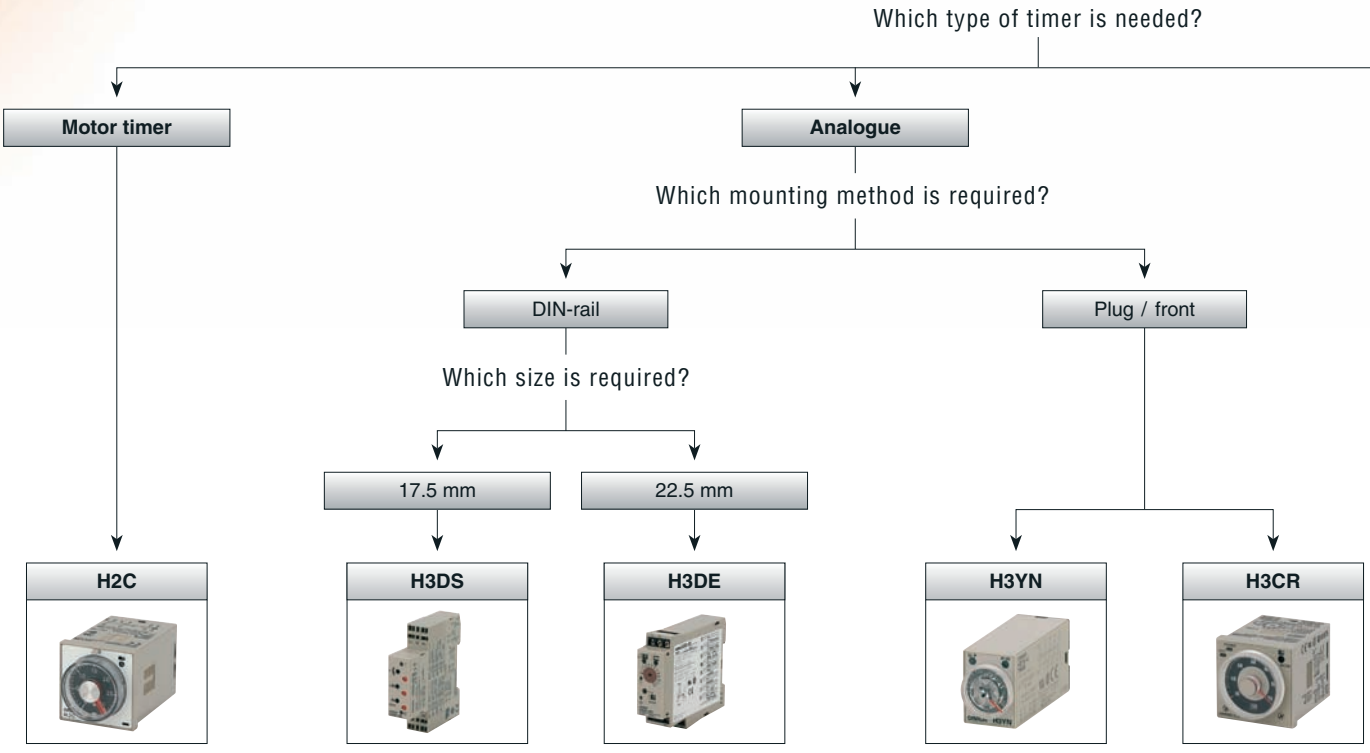
Specifications

		5 A	10 A	20 A	40 A
Efficiency	**V_{in}= 400 VAC**	85 %	88 %	87 %	90 %
	V_{in}= 480 VAC	84 %	88 %	87 %	90 %
Voltage range		340 to 766 VAC, 3-phase			
Output voltage	**Voltage adjustment**	22.5 to 26.4 VDC min.			
	Ripple	200 mV max.			
	Input variation	±0.5% max.			
	Temperature influence	±0.01% / °C			
Overload protection		yes			
Overvoltage protection		yes			
Output indicator		yes (green)	yes (green)	yes (green)	yes (green)
Weight		750 g	1.0 kg	2.65 kg	4.75 kg
Series operation		yes (for 2 units)			
Parallel operation		yes (for 2 units)			

Timers

With over 70 years experience in timers, Omron knows exactly how to satisfy every timer function need. Our range includes motor timers, electronic timers, standard and digital timers, all available in a wide variety of housing and mounting methods to suit any customer requirement.

- An extensive range of motor timers, electronic timers and digital timers
- A wide range of timer function modes
- Conformance to all safety standards
- A wide range of housing varieties to suit every application
- Timer range from 0.001 seconds to 9999 hours
- Relay outputs, contact and transistor outputs

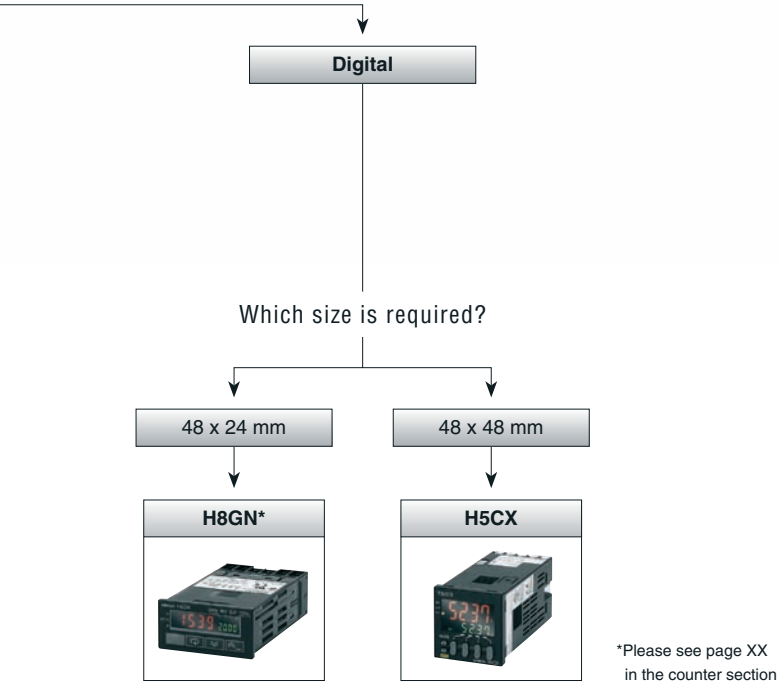


H5CX series – designed to your specifications

The H5CX series is a complete range of digital timers offering multiple time ranges and covering basically all timing functions, including real twin-timer function, memory function, an intuitive way of programming, and a two-colour, back-lit negative transmissive LCD display.

Every model features a crystal-clear display for excellent visibility in all lighting conditions, dust- and water-proof front casing (IP66) that guarantees top performance under adverse conditions, and extensive functionality in its class.

In addition, each unit in this series has the same “look and feel” with its uniform display design, the same front-panel rocker-keys for easy set-up and operation, and the same intuitive way of programming.



*Please see page XX in the counter section

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Selection table

	Category		Analogue solid state timer										
Selection criteria													
	Model		H3DS-M	H3DS-S	H3DS-A	H3DS-F	H3DS-G	H3DS-X	H3DE-M	H3DE-S	H3DE-F	H3DE-G	H3DE-H
	Mounting		DIN-rail										
	Size		17.5 mm						22.5 mm				
	Type		Multi-functional			Twin timer	Star-delta	Two-wired	Multi-functional		Twin timer	Star-delta	Power OFF-delay
Contact configuration	Time limit		■	■	■	■	■	■	■	■	■	■	■
	Instantaneous								■	■			
	Programmable contacts								■	■			
	14 pins												
	11 pins												
	8 pins												
	Screw terminals		■	■	■	■	■	■	■	■	■	■	■
	Screw-less clamp terminals		□	□	□	□	□	□					
	Screw-less clamp sockets												
Inputs	Voltage input		□	□	□				□	□			
Outputs	Transistor												
	Relay		■	■	■	■	■		■	■	■	■	■
	SCR							■					
	Relay output type	SPDT	■	■	■	■			□	■	■	■ (2X)	■
		SPST-NO					■ (2X)						
		DPDT							□	■			
		4PDT											
Features	Time range	Total time range	0.1 s to 120 h	1 s to 120 h	2 s to 120 h	0.1 s to 120 h	1 s to 120 h	0.1 s to 120 h	0.1 s to 120 h	0.1 s to 120 h	0.1 s to 120 h	1 s to 120 h	0.1 s to 120 h
		Number of sub ranges	7	7	7	6	2	7	8	8	8	2	2 (model dependent)
	Supply voltage		24 to 230 VAC or 24 to 48 VDC	24 to 230 VAC or 24 to 48 VDC	24 to 230 VAC or 24 to 48 VDC	24 to 230 VAC or 24 to 48 VDC	24 to 230 VAC or 24 to 48 VDC	24 to 230 VAC or 24 to 48 VDC	24 to 230 VAC or 12 VDC	24 to 230 VAC / DC or 12 VDC	24 to 230 VAC / DC	24 to 230 VAC / DC	100 to 120 VAC, 200 to 230 VAC, 24 VAC / DC, 48 VAC / DC
	Number of operating modes		8	4	1	2	1	1	8	4	1	1	1
Functions	ON-delay		■	■				■	■	■			
	Flicker OFF start		■			■			■		■		
	Flicker ON start		■	■		■			■	■	■		
	Signal ON- / OFF-delay		■						■				
	Signal OFF-delay		■						■				■
	Interval (signal or power start)		■	■					■	■			
	One-shot output (ON-delay)		■	■					■	■			
	ON-delay (fixed)				■							■	
	Independent ON / OFF time												
	Star-delta						■						
Re-marks	Transistor							■					
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Selection criteria	Category		Analogue solid state timer					Digital timer		Motor timer
										
	Model		H3YN	H3CR-A	H3CR-F	H3CR-G	H3CR-H	H5CX	H8GN	H2C
	Mounting		Socket / on panel							
	Size		21.5 mm	1/16 DIN					1/32 DIN	1/16 DIN
	Type		Miniature	Multi-functional	Twin timer	Star-delta	Power OFF-delay	Multi-functional	Preset counter / timer	Motor timer
Contact configuration	Time limit		■	■	■	■	■	■	■	■
	Instantaneous			■		■	■			■
	Programmable contacts							■	■	
	14 pins		■							
	11 pins			□	□	□	□	□		□
	8 pins		■	□	□	□	□	□		□
	Screw terminals							□	■	□
	Screw-less clamp terminals									
	Screw-less clamp sockets		□							
Inputs	Voltage input			□						
Outputs	Transistor			□				□		
	Relay		■	□	■	■	■	□	■	■
	SCR									
	Relay output type	SPDT		□			□	□	■	■
		SPST-NO				■ (2X)				
		DPDT	□	□	■		□			
		4PDT	□							
Features	Time range	Total time range	0.1 s to 10 h (model dependent)	0.05 s to 300 h, 0.1 s to 600 h (model dependent)	0.05 s to 30 h or 1.2 s to 300 h (model dependent)	0.5 s to 120 s	0.05 s to 12 s, 1.2 s to 12 min	0.001 s to 9999 h (configurable)	0.000 s to 9999 h (configurable)	0.2 s to 30 h
		Number of sub ranges	2	9	14	4	4	10	9	15
	Supply voltage		24, 100 to 120, 200 to 230 VAC, 12, 23, 48, 100 to 110, 125 VDC	100 to 240 VAC, 100 to 125 VDC, 24 to 48 VAC, 12 to 48 VDC	100 to 240 VAC, 12 VDC, 24 VAC / DC, 48 to 125 VDC	100 to 120 VAC, 200 to 240 VAC	100 to 120 VAC, 200 to 240 VAC, 24 VAC / DC, 48 VDC, 100 to 125 VDC	100 to 240 VAC, 24 VAC, 12 to 24 VDC	24 VDC	24, 48, 100, 110, 115, 120, 200, 220, 240 VAC
	Number of operating modes		4	6 (model dependent)		2	1	12	6	2
Functions	ON-delay		■	□				■	■	■
	Flicker OFF start		■	□	■			■	■	
	Flicker ON start		■	□	■			■		
	Signal ON- / OFF-delay			□				■		
	Signal OFF-delay			□				■	■	■
	Interval (signal or power start)		■	□				■	■	
	One-shot output (ON-delay)			□				■		
	ON-delay (fixed)							■		
	Independent ON / OFF time							■	■	
	Star-delta					■				
Re-marks	Transistor			□				■		
	Page		250	251				252	261	253

■ Standard □ Available No / not available

DIN-rail mounted, standard 17.5 mm width solid state timer range

This broad range of timers includes many functionalities and has a wide AC / DC power supply range. Models with screwless clamp connection available.

- 17.5 mm width, modular 45 mm
- DIN-rail mounting
- 24 - 48 VDC and 24 - 230 VAC
- 0.1 s to 120 h, 7 ranges

Ordering information

Type	Supply voltage	Control output	Time setting range	Operating modes	Model	
					Screw terminal type	Screw-less clamp type
Multi-functional timer	24 to 230 VAC (50 / 60 Hz) / 24 to 48 VDC	SPDT	0.1 s -120 h	ON-delay, flicker OFF start, flicker ON start, signal ON / OFF-delay, signal OFF-delay, interval, signal ON / OFF-delay, one-shot	**H3DS-ML**	**H3DS-MLC**
Standard timer				ON-delay, flicker ON start, interval, one-shot	**H3DS-SL**	H3DS-SLC
Single function timer				ON-delay	**H3DS-AL**	**H3DS-ALC**
Twin timer		Relay SPDT	0.1 s - 12 h	Flicker OFF start, flicker ON start	**H3DS-FL**	H3DS-FLC
Star-delta timer		2x Relay SPST-NO	1 s - 120 s	Star-delta	**H3DS-GL**	H3DS-GLC
Two-wired timer	24 to 230 VAC / VDC (50 / 60 Hz)	SCR output	0.1 s - 120 h	ON-delay	**H3DS-XL**	H3DS-XLC

Bold = preferred stock item

Specifications

Terminal block	Screw terminal type: clamps two 2.5 mm^2 max. bar terminals without sleeves Screw-less clamp type: clamps two 1.5 mm^2 max. bar terminals without sleeves
Mounting method	DIN-rail mounting
Operating voltage range	85% to 110% of rated supply voltage
Power reset	Minimum power-off time: 0.1 s, 0.5 s for H3DS-G
Reset voltage	2.4 VAC / VDC max., 1.0 VAC / VDC max. for H3DS-X
Voltage input	Max. permissible capacitance between input lines (terminals B1 and A2): 2,000 pF
	Load connectable in parallel with inputs (terminals B1 and A1)
	H-level: 20.4 to 253 VAC / 20.4 to 52.8 VDC
	L-level: 0 to 2.4 VAC / VDC
Control output	Contact output: 5 A at 250 VAC with resistive load ($\cos\phi$= 1)
	5 A at 30 VDC with resistive load ($\cos\phi$= 1)
Ambient temperature	Operating: -10 °C to 55 °C (with no icing)
	Storage: -25 °C to 65 °C (with no icing)
Accuracy of operating time	±1% max. of FS (±1% ±10 ms max. at 1.2 s range)
Setting error	±10% ±50 ms max. of FS
Influence of voltage	±0.7% max. of FS (±0.7% ±10 ms max. at 1.2 s range)
Influence of temperature	±5% max. of FS (±5% ±10 ms max. at 1.2 s range)
Life expectancy (not H3DS-X)	Mechanical: 10 million operations min. (under no load at 1,800 operations / h)
	Electrical: 100,000 operations min. (5 A at 250 VAC, resistive load at 360 operations / h)
Size in mm	80Hx17.5Wx73D

DIN-rail mounted, standard 22.5 mm width solid state timer range

The H3DE series of timers provides a wide AC / DC power supply and time range to reduce the number of items.

- 79Hx22.5Wx100D mm
- DIN-rail mounting
- 24 - 230 VAC / VDC (except -H)
- Wide time setting range: 0.10 s - 120 h (except -H and -G), 8 ranges

Ordering information

Type	Supply voltage	Control output	Time setting range	Operating modes	Model
Multi-functional standard timers	12 VDC	DPDT	0.1 s - 120 h	ON-delay, flicker OFF start, flicker ON start, signal ON / OFF-delay, signal OFF-delay, interval, signal ON / OFF-delay, one-shot	**H3DE-M2 DC12** *1
	24 to 230 VAC / VDC	SPDT			**H3DE-M1 AC/DC24-230**
		DPDT			**H3DE-M2 AC/DC24-230** *1
		SPDT		ON-delay, flicker ON start, interval, one-shot	**H3DE-S1 AC/DC24-230**
		DPDT			**H3DE-S2 AC/DC24-230** *1
Twin timer		SPDT	0.1 s - 12 h	Flicker OFF start, flicker ON start	**H3DE-F AC/DC24-230**
Star-delta timer		2x SPDT	1 - 20 m	Star-delta	**H3DE-G AC/DC24-230**
Power OFF-delay timer	24 VAC / VDC	SPDT	1 - 120 s	Signal OFF-delay	**H3DE-H AC/DC24 L**
			0.1 - 12 s		**H3DE-H AC/DC24 S**
	48 VAC / VDC		1 - 120 s		H3DE-H AC/DC48 L
			0.1 - 12 s		H3DE-H AC/DC48 S
	100 to 120 VAC		1 - 120 s		**H3DE-H AC100-120 L**
			0.1 - 12 s		**H3DE-H AC100-120 S**
	200 to 230 VAC		1 - 120 s		**H3DE-H AC200-230 L**
			0.1 - 12 s		**H3DE-H AC200-230 S**

*1 One output can be set to instantaneous.

Bold = preferred stock item

Specifications

Terminal block	Clamps two 2.5 mm^2 max. bar terminals without sleeves
Mounting method	DIN-rail mounting
Operating voltage range	85% to 110% of rated supply voltage
Power reset	Minimum power-off time: H3DE-M/S, H3DE-F: 0.1 s, H3DE-G: 0.5 s
Reset voltage	2.4 VAC / VDC max. (not for H3DE-H)
Voltage input (H3DE-M / -S)	Max. permissible capacitance between input lines (terminals B1 and A2): 2,000 pF
	Load connectable in parallel with inputs (terminals B1 and A2)
	H-level: 20.4 to 253 VAC / VDC, L-level: 0 to 2.4 VAC / VDC
Control output	Contact output: 5 A at 250 VAC with resistive load ($\cos\phi$= 1), 5 A at 30 VDC with resistive load ($\cos\phi$= 1)
Ambient temperature	Operating: -10 °C to 55 °C (with no icing), storage: -25 °C to 65 °C (with no icing)
Accuracy of operating time	±1% max. of FS (±1% ±10 ms max. at 1.2 s range)
Setting error	±10% ±0.05 s max. of FS
Signal input time	50 ms min.
Influence of voltage	±0.5% max. of FS
Influence of temperature	±2% max. of FS
Contact material	AGNi+gold plating
Life expectancy	Mechanical: 10 million operations min. (under no load at 1,800 operations / h)
	Electrical: 100,000 operations min. (5 A at 250 VAC, resistive load at 360 operations / h)
Degree of protection	IP30 (terminal block: IP20)
Size in mm	79Hx22.5Wx100D

Miniature timer with multiple time ranges and multiple operating modes

H3YN features 4 multi-operating modes: ON-delay, interval, flicker ON start and flicker OFF start.

- 28Hx21.5Wx52.6D mm
- Plug-in
- All supply voltages available
- 0.1 s to 10 h
- DPDT (5 A) or 4PDT (3 A)

Ordering information

Supply voltage	Functions	Time-limit contact	Short-time range model (0.1 s to 10 min)	Long-time range model (0.1 min to 10 h)
12 VDC	ON-delay Interval Flicker ON Flicker OFF	DPDT	**H3YN-2 12DC**	**H3YN-21 12DC**
24 VAC			**H3YN-2 24AC**	**H3YN-21 24AC**
24 VDC			**H3YN-2 24DC**	**H3YN-21 24DC**
100 - 120 VAC			**H3YN-2 100-120AC**	**H3YN-21 100-120AC**
200 - 230 VAC			**H3YN-2 200-230AC**	**H3YN-21 200-230AC**
12 VDC		4PDT	**H3YN-4 12DC**	**H3YN-41 12DC**
24 VAC			**H3YN-4 24AC**	**H3YN-41 24AC**
24 VDC			**H3YN-4 24DC**	**H3YN-41 24DC**
100 - 120 VAC			**H3YN-4 100-120AC**	**H3YN-41 100-120AC**
200 - 230 VAC			**H3YN-4 200-230AC**	**H3YN-41 200-230AC**

Bold = preferred stock item

Accessories

Connecting socket

Timer	DIN-rail mounting / front-connecting socket	Back-connecting socket
		PCB terminal
H3YN-2 / -21	PYF08A, PYF08A-N, PYF08A-E	**PY08-02**
H3YN-4 / -41	PYF14A, PYF14A-N, PYF14A-E	**PY14-02**

Hold-down clips

Applicable socket	Model
PYF08A, PYF08A-N, PYF08A-E, PYF14A, PYF14A-N, PYF14A-E	**Y92H-3 (pair)**
PY08, PY08-02, PY14-02	Y92H-4

Bold = preferred stock item

Specifications

Item	H3YN-2 / -4	H3YN-21 / -41
Time ranges	0.1 s to 10 min (1 s, 10 s, 1 min, or 10 min max. selectable)	0.1 min to 10 h (1 min, 10 min, 1 h, or 10 h max. selectable)
Rated supply voltage	24, 100 to 120, 200 to 230 VAC (50 / 60 Hz) 12, 24, 48, 100 to 110, 125 VDC	
Pin type	Plug-in	
Operating mode	ON-delay, interval, flicker OFF start, or flicker ON start (selectable with DIP switch)	
Operating voltage range	85% to 110% of rated supply voltage (12 VDC: 90% to 110% of rated supply voltage)	
Reset voltage	10% min. of rated supply voltage	
Control outputs	DPDT: 5 A at 250 VAC, resistive load ($\cos\phi = 1$), 4PDT: 3 A at 250 VAC, resistive load ($\cos\phi = 1$)	
Accuracy of operating time	±1% FS max. (1 s range: ±1% ±10 ms max.)	
Setting error	±10% ±50 ms FS max.	
Reset time	Min. power-opening time: 0.1 s max. (including halfway reset)	
Influence of voltage	±2% FS max.	
Influence of temperature	±2% FS max.	
Ambient temperature	Operating: -10 °C to 50 °C (with no icing), storage: -25 °C to 65 °C (with no icing)	
Degree of protection	IP40	
Size in mm	28Hx21.5Wx52.6D	

DIN 48x48 mm multi-functional timer series

This elaborate range of solid state timers provides you with a multi-functional timer, twin timer, star-delta timer and a power OFF-delay timer.

- 48x48 mm front-panel / plug-in
- High- / low-voltage models (except -H and -G)
- 0.05 s to 300 h (except -H and -G)
- DPDT, 5 A at 250 VAC
- Transistor 100 mA at 30 VDC

Ordering information

Output	Number of pins	Supply voltage	Time range	Operating mode	Model
Relay DPDT	11	100 to 240 VAC / 100 to 125 VDC	0.05 s to 300 h	ON-delay, flicker OFF start, flicker ON start, signal ON / OFF-delay, signal OFF-delay, interval	**H3CR-A 100-240AC/100-125DC**
		24 to 48 VAC / 12 to 48 VDC			**H3CR-A 24-48AC/12-48DC**
Transistor		24 to 48 VAC / 12 to 48 VDC	0.05 s to 300 h		H3CR-AS 24-48AC/12-48DC
Relay DPDT	8	100 to 240 VAC / 100 to 125 VDC	0.05 s to 300 h	ON-delay, flicker ON start, interval, one-shot	**H3CR-A8 100-240AC/100-125DC**
		24 to 48 VAC / 12 to 48 VDC			**H3CR-A8 24-48AC/12-48DC**
Transistor		24 to 48 VAC / 12 to 48 VDC	0.05 s to 300 h		H3CR-A8S 24-48AC/12-48DC
Relay SPDT		100 to 240 VAC / 100 to 125 VDC			**H3CR-A8E 100-240AC/100-125DC**
		24 to 48 VAC / 12 to 48 VDC			**H3CR-A8E 24-48AC/DC**
Relay DPDT	11	100 to 240 VAC	0.05 s to 30 h	Flicker OFF start	**H3CR-F 100-240AC**
		24 VAC / VDC			H3CR-F 24AC/DC
	8	100 to 240 VAC			**H3CR-F8 100-240AC**
		24 VAC / VDC			**H3CR-F8 24AC/DC**
	11	100 to 240 VAC	0.05 s to 30 h	Flicker ON start	**H3CR-FN 100-240AC**
		24 VAC / VDC			H3CR-FN 24AC/DC
	8	100 to 240 VAC			**H3CR-F8N 100-240AC**
		24 VAC / VDC			**H3CR-F8N 24AC/DC**
Time-limit contact and instantaneous contact		100 to 120 VAC			H3CR-G8EL 100-120AC
		200 to 240 VAC			H3CR-G8EL 200-240AC
DPDT	8	100 to 120 VAC	0.05 to 12 s	Signal OFF-delay	**H3CR-H8LS 100-120AC**
		200 to 240 VAC			H3CR-H8LS 200-240AC
		24 VAC / VDC			**H3CR-H8LS 24AC/DC**
		100 to 120 VAC	0.05 to 12 m		**H3CR-H8LM 100-120AC**
		200 to 240 VAC			**H3CR-H8LM 200-240AC**
		24 VAC / VDC			**H3CR-H8LM 24AC/DC**

Bold = preferred stock item

Accessories

Name / specifications		Model
Flush-mounting adapter		**Y92F-30**
Protective cover		**Y92A-48B**
Front connecting socket	8-pin, finger-safe type, DIN-rail	**P2CF-08-E**
11-pin, finger-safe type		**P2CF-11-E**
Back connecting socket	8-pin	**P3G-08**
	11-pin	**P3GA-11**

Name / specifications		Model
Time setting ring	Setting a specific time	**Y92S-27**
	Limiting the setting range	**Y92S-28**
Panel cover	Light grey (5Y7/1)	**Y92P-48GL**
	Black (N1.5)	**Y92P-48GB**

Bold = preferred stock item

Specifications

Accuracy of operating time		±0.2% FS max. (±0.2% ±10 ms max. in a range of 1.2 s)
Influence of voltage		±0.2% FS max. (±0.2% ±10 ms max. in a range of 1.2 s)
Influence of temperature		±1% FS max. (±1% ±10 ms max. in a range of 1.2 s)
Ambient temperature		Operating: -10 °C to 55 °C (with no icing), storage: -25 °C to 65 °C (with no icing)
Life expectancy	**Mechanical:**	20,000,000 operations min. (under no load at 1,800 operations / h)
	Electrical:	100,000 operations min. (5 A at 250 VAC, resistive load at 1,800 operations / h)
Size in mm		48Hx48Wx66.6D (H3CR-A, -F), 48Hx48Wx78D (H3CR-G, -H)

Setting error	±5% FS ±50 ms
Degree of protection	IP40 (panel surface)
Weight	Approx. 90 g

The most complete digital standard timer on the market

H5CX offers you the most complete series of products on the market today. Based on extensive customer research, these new timers have been designed with added-value features that users both need and appreciate.

- 48Hx48Wx64D to 100 mm
- Two-colour display value, red or green
- Front-mounting/plug-in
- 0.001 s to 9999 h, 10 ranges
- Input NPN, PNP and contact

Ordering information

Output type	Supply voltage	Functions	External connection	Size in mm (HxWxD)	Socket depth (mm)	Model
Contact output	100 to 240 VAC	A: Signal ON-delay	Screw terminals	48x48x100	0	**H5CX-A**
	12 to 24 VDC / 24 VAC	A-1: Signal ON-delay 2		48x48x64		**H5CX-AD**
Transistor output	100 to 240 VAC	A-2: Power ON-delay 1		48x48x100		**H5CX-AS**
	12 to 24 VDC / 24 VAC	A-3: Power ON-delay 2		48x48x64		**H5CX-ASD**
Contact output	100 to 240 VAC	b: Repeat cycle 1	11-pin socket	48x48x72.5	14.4	**H5CX-A11**
	12 to 24 VDC / 24 VAC	b-1: Repeat cycle 2		48x48x63.7		**H5CX-A11D**
Transistor output	100 to 240 VAC	d: Signal OFF-delay		48x48x72.5		**H5CX-A11S**
	12 to 24 VDC / 24 VAC	E: Interval		48x48x63.7		H5CX-A11SD
Contact output	100 to 240 VAC	F: Cumulative	8-pin socket	48x48x63.7	14.3	**H5CX-L8**
	12 to 24 VDC / 24 VAC	Z: ON / OFF-duty adjustable flicker				**H5CX-L8D**
Transistor output	100 to 240 VAC	toff: Twin timer OFF start				H5CX-L8S
	12 to 24 VDC / 24 VAC	ton: Twin timer ON start				**H5CX-L8SD**

Bold = preferred stock item

Accessories

Name		Model
Flush-mounting adapter		**Y92F-30**
Waterproof packing		Y92S-29
Front-connecting socket	8-pin, finger safe type	**P2CF-08-E**
11-pin, finger safe type		**P2CF-11-E**
Back-connecting socket	8-pin	**P3G-08**
	11-pin	**P3GA-11**
Hard cover		**Y92A-48**
Soft cover		Y92A-48F1

Bold = preferred stock item

Specifications

Item	H5CX-A□	H5CX-A11□	H5CX-L8□
Display	7-segment, negative transmissive LCD		
	Present value: 11.5 mm-high characters		
	red or green (programmable)	red	
	Set value: 6-mm-high characters, green		
Digits	4 digits		
Total time range	0.001 s to 9,999 h (configurable)		
Timer mode	Elapsed time (Up), remaining time (Down) (selectable)		
Input signals	Signal, reset, gate		Signal, reset
Key protection	Yes		
Memory backup	EEPROM (overwrites: 100,000 times min.) that can store data for 10 years min.		
Ambient temperature	Operating: -10 °C to 55 °C (no icing or condensation), side-by-side mounting: -10 °C to 50 °C		
Case color	Black (N1.5)		

DIN-sized (48x48 mm) motor timer with variable time ranges

This motor timer series provides you with many features, such as ON-delay, time indicator, moving pointer and synchronous motor. Moreover, the LED indicator shows the time operation, time range and the rated voltage.

- DIN-sized 48x48 mm
- Front-panel / plug-in / DIN-rail
- All supply voltages available
- 0.2 s to 30 h
- SPDT, 6A at 250 VAC

Ordering information

Operation / resetting system	Internal connection	Terminal	Time-limit contact	Instantaneous contact	Time range code	Model
Time-limit operation / electric resetting	Separate motor and clutch connection	11-pin socket	SPDT	SPDT	1.25 s - 30 h in 5 ranges	**H2C-RSA 110AC**
						H2C-RSA 220AC
						H2C-RSA 24AC
					0.2 s - 6 h in 5 ranges	**H2C-RSB 110AC**
						H2C-RSB 220AC
						H2C-RSB 24AC
					0.5 s - 12 h in 5 ranges	**H2C-RSC 110AC**
						H2C-RSC 220AC
						H2C-RSC 24AC
Time-limit operation / self-resetting	Separate motor and clutch connection	11-pin socket	SPDT	SPDT	1.25 s - 30 h in 5 ranges	**H2C-SA 110AC**
						H2C-SA 220AC
						H2C-SA 24AC
					0.2 s - 6 h in 5 ranges	**H2C-SB 110AC**
						H2C-SB 220AC
						H2C-SB 24AC
					0.5 s - 12 h in 5 ranges	**H2C-SC 110AC**
						H2C-SC 220AC
						H2C-SC 24AC

Note: Other voltages available on request

Bold = preferred stock item

Accessories

Name / specifications		Model
DIN-rail mounting / front-connecting socket	8-pin, finger safe type	**P2CF-08-E**
	11-pin, finger safe type	**P2CF-11-E**
Back-connecting socket	8-pin, screw terminal	**P3G-08**
	11-pin	**P3GA-11**

Name / specifications		Model
Hold-down clip (pair)	For PL08 and PL11 sockets	Y92H-1
	For PF085A socket	Y92H-2
Flush mounting adapter		**Y92F-30**
Time setting ring		Y92A-Y1

Bold = preferred stock item

Specifications

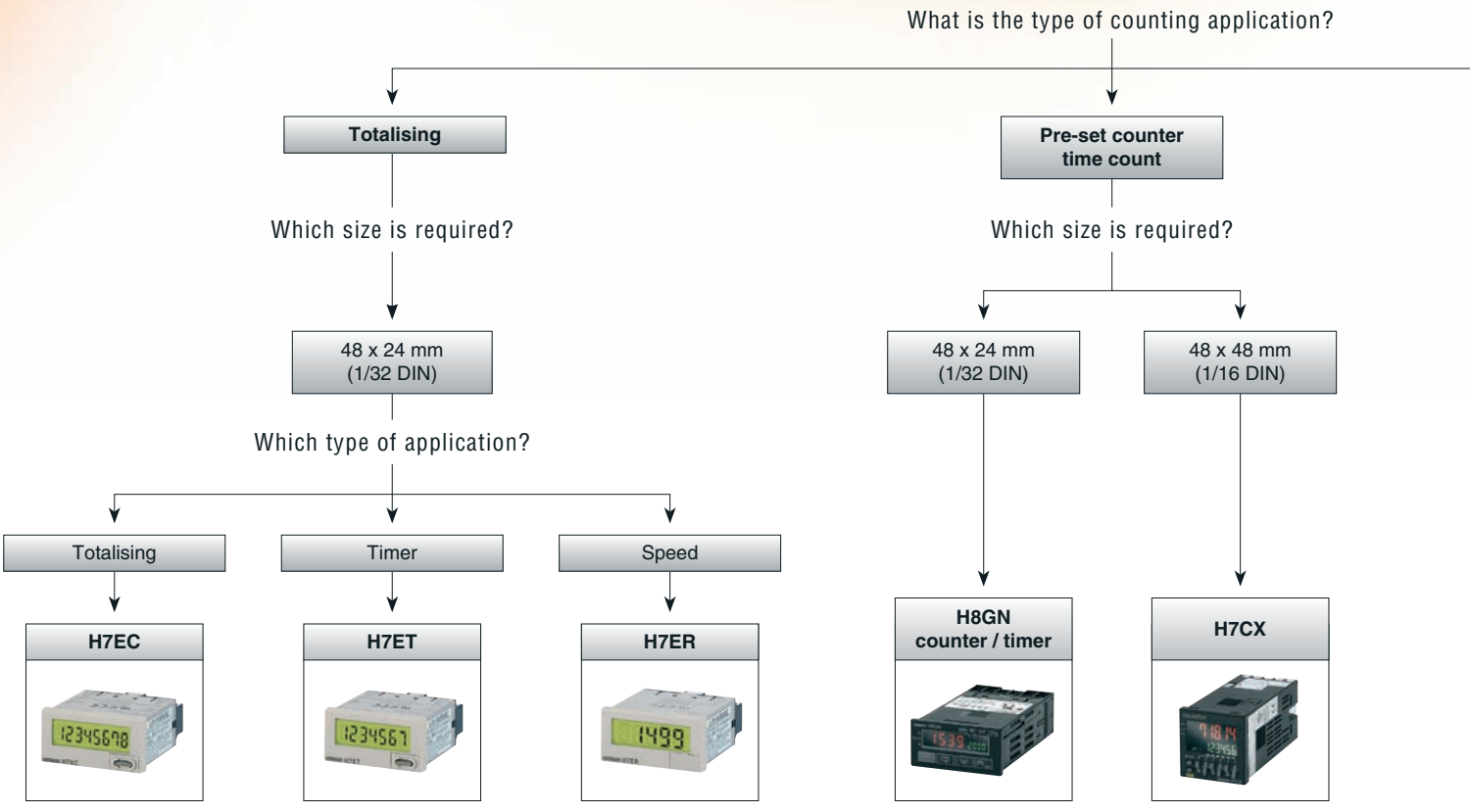
Operating voltage range	85% to 110% of rated supply voltage
Reset voltage	10% max. of rated supply voltage
Reset time	Min. power-opening time: 0.5 s, min. pulse width: 0.5 s
Control outputs	6 A at 250 VAC, resistive load ($\cos\phi = 1$)
Mounting method	Flush mounting (except for H2C-F / -FR models), surface-mounting, DIN-rail mounting
Life expectancy	Mechanical: 10,000,000 operations min.
	Electrical: 500,000 operations min.
Motor life expectancy	20,000 h
Accuracy of operating time	±0.5% FS max. (±1% max. at 0.2 to 6 s for the time range code B or at 0.5 to 12 s for the time range code C)

Setting error	±2% FS max.
Reset time	0.5 s max.
Influence of voltage	±1% FS max.
Influence of temperature	±2% FS max.
Ambient temperature	Operating: -10 °C to 50 °C
Case color	Light grey (Munsell 5Y7/1)
Degree of protection	IP40 (panel surface)
Size in mm	48Hx48Wx77.5D

Counters

With over three decades in the counter market, Omron can provide a solution to every measurement process requirement, including total counting, timing, pre-set counting and specific cam positioning applications.

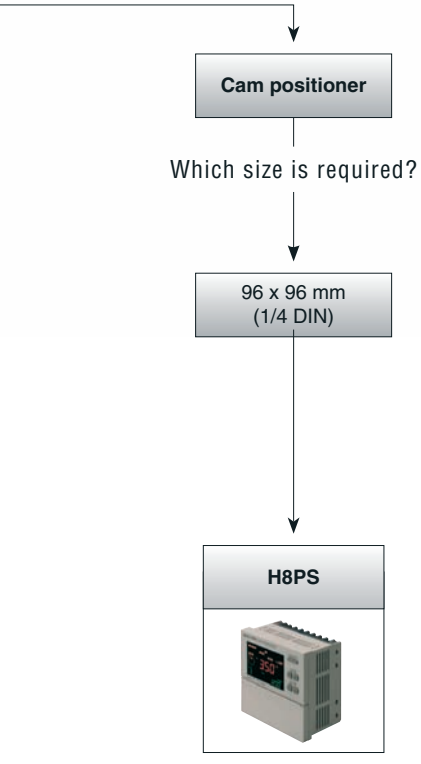
- Full range of battery-powered counters for total-, timing- and speed counting
- Pre-set version has highly visible colour-change feature
- Relay output and transistor output for pre-set counters
- Models available with communication capability
- Conform to all relevant safety standards
- LCD negative transmission back-lit display in most models



H7CX series – multi-functional pre-set counter

The H7CX series offers the ultimate in versatility and intuitive programming. With a display choice of up to six digits the H7CX offers many added-value features, making it ideal for multiple uses.

Every model features a crystal-clear display for excellent visibility in all lighting conditions, dust- and water-proof front casing (IP66) that guarantees top performance under adverse conditions, and extensive functionality in its class. In addition, each unit in this series has the same “look and feel” with its uniform display design, the same front-panel rocker-keys for easy set-up and operation, and the same intuitive way of programming.



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Selection table

	Category	Self-powered total	Self-powered timer	Self-powered tachometer
Selection criteria				
	Model	H7EC	H7ET	H7ER
	Display	LCD		
	Size	1/32 DIN		
Outputs	Control outputs			
	2 stage			
	Total	■	■	
	Time		■	
	Preset			
	Batch			
	Dual			
	Tachometer	■		■
Inputs	Control inputs	No-voltage, PNP / NPN, DC-voltage, AC / DC multi-voltage	No-voltage, PNP / NPN, DC-voltage, AC / DC multi-voltage	No-voltage, PNP / NPN
Features	Dual operation			
	Number of digits	8	7	4 or 5
	NPN / PNP switch	■	■	■
	Back-lit	□	□	□
	External reset	■	■	
	Manual reset	■	■	
	Number of banks			
	Built-in sensor power supply			
	IP rating	IP66	IP66	IP66
Terminals	Screw terminals	■	■	■
	PCB terminals			
	11-pin socket			
Supply voltage	100 to 240 VAC			
	12 to 24 VDC			
	24 VDC	□	□	□
	Comms			
Functions	Up	■	■	
	Down			
	Up / down			
	Reversible			
	Speed	0 to 30 Hz or 0 to 1 kHz		1 or 10 kHz
	Counting range	0 to 99999999	0.0 h to 999999.9 h <--> 0.0 h to 3999 d 23.9 h or 0 s to 999 h 59 min 59 s <--> 0.0 min to 9999 h 59.9 min	1000 s^{-1} or 1000 min^{-1}; 1000 s^{-1} or 1000 min^{-1} <--> 10000 min^{-1}
Colour	Beige	■	■	■
	Black	■	■	■
	Page	258	259	260

	Counter type	Pre-set counter / timer	Pre-set counter	Cam positioner
Selection criteria				
	Model	H8GN	H7CX	H8PS
	Display	LCD negative transmissive		LCD
	Size	1/32 DIN	1/16 DIN	1/4 DIN
Outputs	Control outputs	1 relay (SPDT)	1 relay (SPDT), transistor	NPN or PNP, cam outputs (8 lines), run out, tachometer
	5 stage	■	□	
	Total	■	□	
	Time	■		
	Preset	■	□	
	Batch	■	□	
	Dual	■	□	
	Tachometer		□	
Inputs	Control inputs	No-voltage	No-voltage, PNP / NPN	Encoder
Features	Dual operation	■	■	□
	Number of digits	PV: 4, SV: 4	PV: 4, SV: 4 or PV: 6, SV: 6	7
	NPN / PNP switch		■	
	Back-lit		■	
	External reset	■	■	
	Manual reset	■	■	
	Number of banks	4		
	Built-in sensor power supply		■	
	IP rating	IP66	IP66	IP50
Terminals	Screw terminals	■	■	■
	PCB terminals			■
	11-pin socket		□	
Supply voltage	100 to 240 VAC		■	
	12 to 24 VDC		■	
	24 VDC	■		■
	Comms	□		
Functions	Up	■	■	
	Down	■	■	
	Up / down		■	
	Reversible	■	■	
	Speed	0 to 30 Hz or 0 to 5 kHz	0 to 30 Hz or 0 to 5 kHz	
	Counting range	-1999 to 9999	-999 to 9999 or -99999 to 999999	
Colour	Beige			■
	Black	■	■	
	Page	261	262	263

■ Standard □ Available No / not available

Self-powered LCD totaliser

The H7E series is available with large display with 8.6 mm character height. It includes models with backlight for improved visibility in dimly lit places. The H7E family includes total counters, time counters, tachometers and PCB-mounted counters.

- 24Hx48Wx48.5D mm
- 8 digits, 8.6 mm character height
- Black or light-grey housing
- Dual input speed: 30 Hz <-> 1 kHz
- Short body: all models have a depth of 48.5 mm

Ordering information

Count input	Max. counting speed	Display	Model	
			Light grey body	Black body
No-voltage	30 Hz <-> 1 kHz (switchable)	7-segment LCD	**H7EC-N**	**H7EC-N-B**
PNP / NPN universal DC voltage input	30 Hz <-> 1 kHz (switchable)	7-segment LCD	**H7EC-NV**	**H7EC-NV-B**
		7-segment LCD with backlight	**H7EC-NV-H**	**H7EC-NV-BH**
AC / DC multi-voltage input	20 Hz	7-segment LCD	**H7EC-NFV**	**H7EC-NFV-B**

Bold = preferred stock item

Specifications

Item	H7EC-NV-□ / H7EC-NV-□H	H7EC-NFV-□	H7EC-N-□
Operating mode	Up type		
Mounting method	Flush mounting		
External connections	Screw terminals, optional wire-wrap terminals		
Number of digits	8		
Display	7-segment LCD with or without backlight, zero suppression (character height: 8.6 mm)		
Max. counting speed	30 Hz / 1 kHz	20 Hz	30 Hz / 1 kHz
Case color	Light grey or black (-B models)		
Attachment	Waterproof packing, flush mounting bracket		
Supply voltage	Backlight model: 24 VDC (0.3 W max.) (only for backlight) No-backlight model: not required (powered by built-in battery)	Not required (powered by built-in battery)	
Count input	High (logic) level: 4.5 to 30 VDC Low (logic) level: 0 to 2 VDC (input impedance: approx. 4.7 kΩ)	High (logic) level: 24 to 240 VAC / VDC, 50 / 60 Hz Low (logic) level: 0 to 2.4 VAC / VDC, 50 / 60 Hz	No voltage input Maximum short-circuit impedance: 10 kΩ max. Short-circuit residual voltage: 0.5 V max. Minimum open impedance: 750 kΩ min.
Reset input		No voltage input Maximum short-circuit impedance: 10 kΩ max. Short-circuit residual voltage: 0.5 V max. Minimum open impedance: 750 kΩ min.	
Minimum signal width	20 Hz: 25 ms, 30 Hz: 16.7 ms, 1 KHz: 0.5 ms		
Reset system	External reset and manual reset: minimum signal width of 20 ms		
Ambient temperature	Operating: -10 °C to 55 °C (with no condensation or icing), storage: -25 °C to 65 °C (with no condensation or icing)		
Degree of protection	Front-panel: IP66, NEMA4, terminal block: IP20		
Battery life (reference)	7 years min. with continuous input at 25 °C (lithium battery)		
Size in mm	24Hx48Wx48.5D		

Self-powered time counter

The H7E series is available with large display with 8.6 mm character height. It includes models with backlight for improved visibility in dimly lit places. The H7E family includes total counters, time counters, tachometers and PCB-mounted counters.

- 24Hx48Wx48.5D mm
- 7 digits, 8.6 mm character height
- Black or light-grey housing
- Dual time range 999999.9h <-> 3999d23.9h or 999h59m59s <-> 9999h59.9m

Ordering information

Timer input	Display	Time range			
		999999.9h <-> 3999d23.9h (switchable)		999999.9h <-> 3999d23.9h (switchable)	
		Light grey body	Black body	Light grey body	Black body
No-voltage input	7-segment LCD	**H7ET-N**	**H7ET-N-B**	**H7ET-N1**	**H7ET-N1-B**
PNP / NPN universal DC voltage input	7-segment LCD	**H7ET-NV**	H7ET-NV-B	**H7ET-NV1**	H7ET-NV1-B
	7-segment LCD with backlight	**H7ET-NV-H**	H7ET-NV-BH	H7ET-NV1-H	H7ET-NV1-BH
AC / DC multi-voltage input	7-segment LCD	**H7ET-NFV**	**H7ET-NFV-B**	**H7ET-NFV1**	H7ET-NFV1-B

Bold = preferred stock item

Specifications

Item	H7ET-NV□-□ / H7ET-NV□-□H	H7ET-NFV□-□	H7ET-N□-□
Operating mode	Accumulating		
Mounting method	Flush mounting		
External connections	Screw terminals		
Display	7-segment LCD with or without backlight, zero suppression (character height: 8.6 mm)		
Number of digits	7		
Case color	Light grey or black (-B models)		
Attachment	Waterproof packing, flush mounting bracket, time unit labels		
Supply voltage	Backlight model: 24 VDC (0.3 W max.) (for backlight) No-backlight model: not required (powered by built-in battery)	Not required (powered by built-in battery)	
Timer input	High (logic) level: 4.5 to 30 VDC Low (logic) level: 0 to 2 VDC (Input impedance: approx. 4.7 kΩ)	High (logic) level: 24 to 240 VAC / VDC, 50 / 60 Hz Low (logic) level: 0 to 2.4 VAC / VDC, 50 / 60 Hz	No voltage input Maximum short-circuit impedance: 10 kΩ max. Short-circuit residual voltage: 0.5 V max. Minimum open impedance: 750 kΩ min.
Reset input		No voltage input Maximum short-circuit impedance: 10 kΩ max. Short-circuit residual voltage: 0.5 V max. Minimum open impedance: 750 kΩ min.	
Minimum pulse width	1 s		
Reset system	External reset and manual reset: minimum signal width of 20 ms		
Ambient temperature	Operating: -10 °C to 55 °C (with no condensation or icing), storage: -25 °C to 65 °C (with no condensation or icing)		
Time accuracy	±100 ppm (25 °C)		
Degree of protection	Front-panel: IP66, NEMA4 with waterproof packing, terminal block: IP20		
Battery life (reference)	10 years min. with continuous input at 25 °C (lithium battery)		
Size in mm	24Hx48Wx48.5D		

Self-powered tachometer

The H7E series is available with large display with 8.6 mm character height. It includes models with backlight for improved visibility in dimly lit places. The H7E family includes total counters, time counters, tachometers and PCB-mounted counters.

- 24Hx48Wx48.5D mm
- 5 digits, 8.6 mm character height
- Black or light-grey housing
- Dual revolution display

Ordering information

Count input	Display	Max. revolutions displayed (applicable encoder resolution)			
		1,000 s^{-1} (1 pulse / rev.) 1,000 min^{-1} (60 pulse / rev.)		**1,000.0 s^{-1} (10 pulse / rev) 1,000.0 min^{-1} (600 pulse / rev) <-> 10,000 min^{-1} (60 pulse / rev) (switchable)**	
		Light grey body	**Black body**	**Light grey body**	**Black body**
No-voltage input	7-segment LCD	**H7ER-N**	H7ER-N-B		
PNP / NPN universal DC voltage input	7-segment LCD	**H7ER-NV**	H7ER-NV-B	**H7ER-NV1**	H7ER-NV1-B
	7-segment LCD with backlight	H7ER-NV-H	H7ER-NV-BH	H7ER-NV1-H	H7ER-NV1-BH

Bold = preferred stock item

Specifications

Item	H7ER-NV1-□ / H7ER-NV1-□H	H7ER-NV-□ H7ER-NV-□H	H7ER-N-□
Operating mode	Up type		
Mounting method	Flush mounting		
External connections	Screw terminals, wire-wrap terminals		
Display	7-segment LCD with or without backlight, zero suppression (character height: 8.6 mm)		
Number of digits	5	4	
Max. revolutions displayed	1,000.0 s^{-1} (when encoder resolution of 10 pulse / rev is used) 1,000.0 min^{-1} (when encoder resolution of 600 pulse / rev is used) <-> 10,000 min^{-1} (when encoder resolution of 60 pulse / rev is used) (switchable with switch)	1,000 s^{-1} (when encoder resolution of 1 pulse / rev is used) 1,000 min^{-1} (when encoder resolution of 60 pulse / rev is used)	
Attachment	Waterproof packing, flush mounting bracket, revolution unit labels		
Supply voltage	Backlight model: 24 VDC (0.3 W max.) (for backlight lit) No-backlight model: not required (powered by built-in battery)		Not required (powered by built-in battery)
Count input	High (logic) level: 4.5 to 30 VDC Low (logic) level: 0 to 2 VDC (Input impedance: approx. 4.7 kΩ)		No voltage input Maximum short-circuit impedance: 10 kΩ max. Short-circuit residual voltage: 0.5 V max. Minimum open impedance: 750 kΩ min.
Max. counting speed	10 kHz	1 kHz	
Minimum signal width	10 kHz: 0.05 ms, 1 kHz: 0.5 ms		
Ambient temperature	Operating: -10 °C to 55 °C (with no condensation or icing), storage: -25 °C to 65 °C (with no condensation or icing)		
Degree of protection	Front-panel: IP66, NEMA4 with waterproof packing, terminal block: IP20		
Battery life (reference)	7 years min. with continuous input at 25 °C (lithium battery)		
Size in mm	24Hx48Wx48.5D		

World's smallest compact preset counter / timer

The H8GN is a 1/32 DIN timer and counter in one. It is simple to switch between the timer and counter functions. During operation it is also possible to switch the display to monitor the totalising count value in 8 digits. Many sophisticated functions come standard with H8GN.

- 24Hx48Wx83D mm
- 8-digit display, 4 value and 4 set value
- Front mounting
- 0.001 s to 9999 h (configurable)
- 24 VDC

Ordering information

Functions		Supply voltage	Output	Communications	
Counter	**Timer**			**No communications**	**RS-485**
Counter: up / down / reversible, 4 digits, N, F, C or K output modes Total counter: 8 digits	A: ON-delay B: Flicker D: Signal OFF-delay E: Interval F: Accumulative Z: ON / OFF-duty adjustable flicker	24 VDC	Contact output (SPDT)	**H8GN-AD**	**H8GN-AD-FLK**

Bold = preferred stock item

Specifications

Rated supply voltage		24 VDC
Operating voltage range		85% to 110% of rated supply voltage
Power consumption		1.5 W max. (for max. DC load) (inrush current: 15 A max.)
Mounting method		Flush-mounting
External connections		Screw terminals (M3 screws)
Terminal screw tightening torque		0.5 Nm max.
Attachment		Waterproof packing, flush-mounting bracket
Display		7-segment, negative transmissive LCD; time display (h, min, s); CMW, OUT, RST, TOTAL Present value (red, 7 mm high characters); set value (green, 3.4 mm high characters)
Digits		PV: 4 digits, SV: 4 digits, when total count value is displayed: 8 digits (zeros suppressed)
Memory backup		EEPROM (non-volatile memory) (number of writes: 100,000 times)
Counter	**Maximum counting speed**	30 Hz or 5 kHz
	Counting range	-999 to 9,999
	Input modes	Increment, decrement, individual, quadrature inputs
Timer	**Timer modes**	Elapsed time (up), remaining time (down)
Inputs	**Input signals**	For counter: CP1, CP2, and reset For timer: start, gate, and reset
	Input method	No-voltage input (contact short-circuit and open input) Short-circuit (ON) impedance: 1 kΩ max. (approx. 2 mA runoff current at 0 Ω) Short-circuit (ON) residual voltage: 2 VDC max. Open (OFF) impedance: 100 kΩ min. Applied voltage: 30 VDC max.
	Start, reset, gate	Minimum input signal width: 1 or 20 ms (selectable)
	Power reset	Minimum power-opening time: 0.5 s
Control output		SPDT contact output: 3 A at 250 VAC / 30 VDC, resistive load ($\cos\phi = 1$)
Minimum applied load		10 mA at 5 VDC (failure level: P, reference value)
Reset system		External, manual, and power supply resets (for timer in A, B, D, E, or Z modes)
Sensor waiting time		260 ms max. (inputs cannot be received during sensor wait time if control outputs are turned OFF)
Timer function	**Accuracy of operating time and setting error (including temperature and voltage effects)**	Signal start: ±0.03% ±30 ms max. Power-ON start: ±0.03% ±50 ms max.
Ambient temperature	**Operating storage**	-10 °C to 55 °C (with no icing or condensation)
		-25 °C to 65 °C (with no icing or condensation)
Case color		Rear section: grey smoke; front section: N1.5 (black)
Degree of protection		Panel surface: IP66 and NEMA Type 4X (indoors); rear case: IP20, terminal block: IP20
Size in mm		24Hx48Wx83D

The most complete digital standard timer on the market

H7CX offers you the most complete series of products on the market today. Based on extensive customer research, these new counters have been designed with added-value features that users both need and appreciate.

- 48Hx48Wx64D to 100 mm
- Two-colour display value, red or green
- Front-mounting / plug-in
- 6-digit model -99999 to 999999, set value -99999 to 999999
- Input contact, NPN or PNP

Ordering information

Type	External connection	Sensor power supply	Supply voltage	Output type	Digits	Size in mm (HxWxD)	Model
1-stage counter 1-stage counter with total counter 2-stage counter 1-stage counter with batch counter Dual counter (addition/subtraction) Tachometer	Screw terminal	12 VDC	100 to 240 VAC	Contact and transistor output	6	48x48x100	**H7CX-AU**
			12 to 24 VDC / 24 VAC				**H7CX-AUD1**
				Transistor output (2x)			**H7CX-AUSD1**
			100 to 240 VAC	Contact output (2x)			**H7CX-AW**
			12 to 24 VDC / 24 VAC				**H7CX-AWD1**
1-stage counter 1-stage counter with total counter	11-pin socket	12 VDC	100 to 240 VAC	Contact output		48x48x72.5	**H7CX-A11**
			12 to 24 VDC / 24 VAC				**H7CX-A11D1**
			100 to 240 VAC	Transistor output			H7CX-A11S
			12 to 24 VDC / 24 VAC				H7CX-A11SD1
	Screw terminal		100 to 240 VAC	Contact output		48x48x100	H7CX-A
			100 to 240 VAC	Transistor output			H7CX-AS

Bold = preferred stock item

Accessories

Name		Model
Flush-mounting adapter		**Y92F-30**
Waterproof packing		Y92S-29
DIN-rail mounting / front-connecting socket	**11-pin, finger safe type**	**P2CF-11-E**
Back-connecting socket	**11-pin**	**P3GA-11**
	Finger safe terminal cover for P3GA-11	**Y92A-48G**
Hard cover		**Y92A-48**
Soft cover		Y92A-48F1

Bold = preferred stock item

Specifications

Display	7-segment, negative transmissive LCD
Digits	6-digits: -99,999 to 999,999, SV range: 0 to 9,999
Max. counting speed	30 Hz or 5 kHz (selectable, ON / OFF ratio 1:1)
Input modes	Increment, decrement, command, individual, and quadrature
Control output	Contact output: 3 A at 250 VAC / 30 VDC, resistive load ($\cos\phi = 1$) Minimum applied load: 10 mA at 5 VDC Transistor output: NPN open collector, 100 mA at 30 VDC Residual voltage: 1.5 VDC max. (approx. 1V) Leakage current: 0.1 mA max.
	NEMA B300 Pilot Duty, 1/4 HP 3 A resistive load at 120 VAC, 1/3 HP 3 A resistive load at 240 VAC
Key protection	Yes
Decimal point adjustment	Yes (rightmost 3 digits)
Sensor waiting time	250 ms max.
Memory backup	EEPROM (overwrites: 100,000 times min.) stores data 10 years min.
Ambient temperature	Operating: -10 to 55 °C (-10 to 50 °C when mounted side by side)
Case color	Black (N1.5), light grey (Munsell 5Y7/1, produced upon request)
Life expectancy	Mechanical: 10,000,000 operations min.
	Electrical: 100,000 operations min. (3 A at 250 VAC, resistive load)
Degree of protection	Panel surface: IP66, NEMA 4 (indoors)

Compact, easy-to-use cam positioner

The H8PS provides high-speed operation at 1,600 r/min and high-precision settings to 0.5° ensuring widespread application. H8PS features a highly visible display with back-lit negative transmissive LCD. Advance angle compensation function compensates for output delays.

- 96Hx96Wx65D mm
- Front-panel/DIN-rail
- 24 VDC
- 8-, 16- and 32-outputs
- NPN / PNP 100 mA at 30 VDC

Ordering information

Number of outputs	Mounting method	Output configuration	Bank function	Size in mm (HxWxD)	Model
8-outputs	Flush-mounting	NPN transistor output	No	96x96x67.5	**H8PS-8B**
		PNP transistor output			**H8PS-8BP**
	Surface-mounting / DIN-rail mounting	NPN transistor output		96x96x60.6	H8PS-8BF
		PNP transistor output			**H8PS-8BFP**
16-outputs	Flush-mounting	NPN transistor output	Yes	96x96x67.5	**H8PS-16B**
		PNP transistor output			**H8PS-16BP**
	Surface-mounting / DIN-rail mounting	NPN transistor output		96x96x60.6	**H8PS-16BF**
		PNP transistor output			**H8PS-16BFP**
32-outputs	Flush-mounting	NPN transistor output		96x96x67.5	**H8PS-32B**
		PNP transistor output			**H8PS-32BP**
	Surface-mounting / DIN-rail mounting	NPN transistor output		96x96x60.6	**H8PS-32BF**
		PNP transistor output			**H8PS-32BFP**

Bold = preferred stock item

Accessories

Type	Resolution	Cable length	Model
Economy	256	2 m	**E6CP-AG5C-C 256 2M**
Standard	256	1 m	E6C3-AG5C-C 256 1M
		2 m	E6C3-AG5C-C 256 2M
	360		**E6C3-AG5C-C 360 2M**
	720		E6C3-AG5C-C 720 2M
Rigid	256	2 m	E6F-AG5C-C 256 2M
	360		E6F-AG5C-C 360 2M
	720		E6F-AG5C-C 720 2M

Bold = preferred stock item

Name	Specification	Model
Discrete wire output cable	2 m	**Y92S-41-200**
Connector-type output cable	2 m	E5ZE-CBL200
Support software	CD-ROM	**H8PS-SOFT-V1**
USB cable	A miniB, 2 m	**Y92S-40**
Parallel input adapter	Two units can operate in parallel	**Y92C-30**
Protective cover		**Y92A-96B**
Watertight cover		**Y92A-96N**
DIN-rail mounting base		**Y92F-91**

Encoder accessories

Name	Specification	Model
Shaft coupling for the E6CP	Axis: 6 mm dia.	**E69-C06B**
Shaft coupling for the E6C3	Axis: 8 mm dia.	**E69-C08B**
Shaft coupling for the E6F	Axis: 10 mm dia.	**E69-C10B**
Extension cable	5 m (same for E6CP, E6C3, and E6F)	**E69-DF5**

Bold = preferred stock item

Specifications

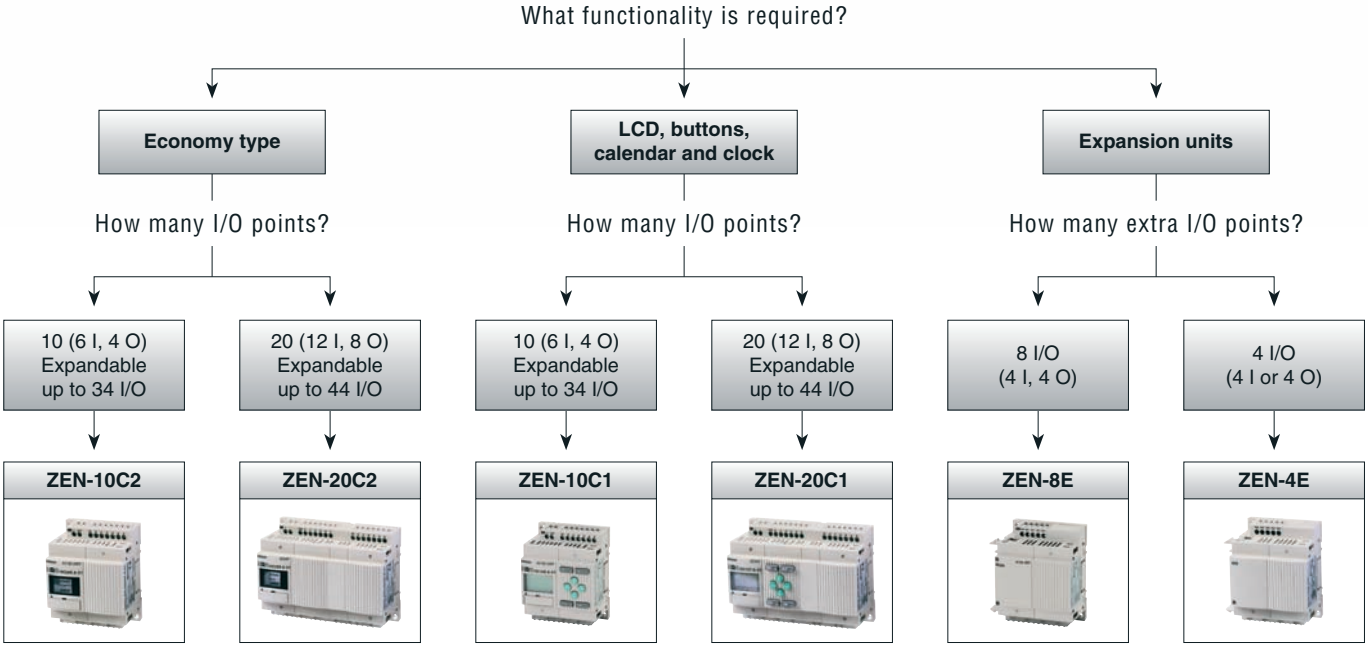
Rated supply voltage			24 VDC
Inputs	**Encoder input**		8-output models: none; 16-/32-output models: bank inputs 1/2/4, origin input, start input
	External inputs	**Input signals**	8-output models: none; 16-/32-output models: bank inputs 1/2/4, origin input, start input
		Input type	No voltage inputs: ON impedance: 1 kΩ max. (leakage current: approx. 2 mA at 0 Ω) ON residual voltage: 2 V max., OFF impedance: 100 kΩ min., applied voltage: 30 VDC max. Minimum input signal width: 20 ms
Number of banks			8 banks (for 16-/32-output models only)
Display method			7-segment, negative transmissive LCD (main display: 11 mm (red), sub-display: 5.5 mm (green))
Memory backup method			EEPROM (overwrites: 100,000 times min.) that can store data for 10 years min.
Ambient operating temperature			-10 °C to 55 °C (with no icing or condensation)
Storage temperature			-25 °C to 65 °C (with no icing or condensation)
Ambient humidity			25% to 85%
Degree of protection			Panel surface: IP40, rear case: IP20
Case color			Light grey (Munsell 5Y7/1)

For full specifications and additional models please refer to the (attached) CD or www.europe.omron.com

ZEN – the logical automatic tools for small-scale flexible control

The ZEN is a modular, expandable, programmable relay that is designed to provide flexible, automatic control for small-scale machines and facilities. The ZEN combines all the functionality of timers, counters and relays to control multiple input and output signals, while being easy to install and program. It enables any daily routine that involves switching and control to be easily automated, which saves time and effort. And it is the perfect solution for building automation applications where multiple timer control is very important.

- 10 I/O models with 6 inputs and 4 outputs, expandable up to 34 I/Os
- 20 I/O models with 12 inputs and 8 outputs, expandable up to 44 I/Os
- With LCD screen, including calendar and clock function or LED indicator
- DC power supply units have analogue input
- Expansion units for 10 & 20 I/O versions with relay output or transistor



	Category	CPU units											
Selection criteria													
	Model	ZEN-10C1AR-A-V1	ZEN-10C2AR-A-V1	ZEN-10C1DR-D-V1	ZEN-10C2DR-D-V1	ZEN-10C1DT-D-V1	ZEN-10C2DT-D-V1	ZEN-20C1AR-A-V1	ZEN-20C2AR-A-V1	ZEN-20C1DR-D-V1	ZEN-20C2DR-D-V1	ZEN-20C1DT-D-V1	ZEN-20C2DT-D-V1
	Type	LCD	LED	LCD	LED	LCD	LED	LCD	LED	LCD	LED	LCD	LED
	Number of I/O points	10 expandable up to 34 I/O						20 expandable up to 44 I/O					
	Inputs	6		6		6		12		12		12	
	Inputs / power supply	100 to 240 VAC		24 VDC		24 VDC		100 to 240 VAC		24 VDC		24 VDC	
	Outputs	4		4		4		8		8		8	
		Relays		Relays		Transistors		Relays		Relays		Transistors	
Features	LCD, buttons, calendar and clock	■		■		■		■		■		■	
	Analogue input (PNP)			■	■	■	■			■	■	■	■
	Timers	16											
	Holding timers	8											
	Counters	16											
	Weekly timers	16		16		16		16		16		16	
	Calendar timers	16		16		16		16		16		16	
	Displays	16		16		16		16		16		16	
	Work bits	16											
	Holding bits	16											
	Analogue comparators (PNP)			4						4			
	Comparators	16											
	Page	267											

Accessories and options			
	EEPROM (for data security and copying)	ZEN-ME01	Enables programs and parameter settings to be saved or copied to another ZEN
	Battery (keeps time, date and bit values for 10 years at 25 °C)	ZEN-BAT01	10 year min. battery life (at 25 °C)
	Connecting cable for the programming software, RS-232C cable, 9-way 'D' connector for PC	ZEN-CIF01	2 m RS-232C (9-pin D-sub connector)
	Support software for Windows	ZEN-SOFT01-V3	Runs on Windows 95, 98, 2000, ME, XP, or NT 4.0
	PS unit 24 VDC, 1.3 A (30 W)	ZEN-PA03024	ZEN power supply unit
	ZEN kit - with LCD display AC version	ZEN-KIT01-EV3	Set containing CPU unit (ZEN-10C1AR-A-V1), support software connecting cable, ZEN support software and manual
	ZEN kit - with LCD Display DC version	ZEN-KIT02-EV3	Set containing CPU unit (ZEN-10C1DR-D-V1), support software connecting cable, ZEN support software and manual

■ Standard □ Available No / not available

Category		Expansion I/O units					
Selection criteria							
	Model	ZEN-8EAR	ZEN-8EDR	ZEN-8EDT	ZEN-4EA	ZEN-4ED	ZEN-4ER
	Type						
	Number of I/O points	8			4		
	Inputs	4	4	4	4	4	
	Inputs / power supply	100 to 240 VAC	24 VDC	24 VDC	100 to 240 VAC	24 VDC	24 VDC
	Outputs	4	4	4			4
		Relays	Relays	Transistors			Relays
Features	LCD, buttons, calendar and clock						
	Analogue input (PNP)						
	Timers						
	Holding timers						
	Counters						
	Weekly timers						
	Calendar timers						
	Displays						
	Work bits						
	Holding bits						
	Analogue comparators (PNP)						
	Comparators						
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■ Standard □ Available No / not available

Flexible automation

Within OMRON's ZEN range there are up to 44 I/O to control. Our basic unit is either a 10 I/O or a 20 I/O version. These basic units are available with a realtime clock, an LCD screen and buttons, or with LED indication and no buttons. Each CPU can be handle up to 3 expansion units

- 10 I/O models with 6 inputs and 4 outputs, expandable up to 34 I/O
- 20 I/O models with 12 inputs and 8 outputs, expandable up to 44 I/O
- With LCD screen, including calendar & clock function or LED indicator
- DC power supply units have analogue input
- Expansion units for 10 & 20 I/O versions with relay output or transistor

Ordering information

Name	Number of I/O points	Inputs	Inputs / power supply	Outputs		Type	LCD, buttons, calendar and clock	Ana-logue input	Timers, counters, weekly timers, calendar timers, displays, work bits, hol-ding bits, comparators	Analogue compara-tors	Holding timers	Size in mm (HxWxD)	Model number
CPU units	10 Expand-able up to 34 I/O	6	100 to 240 VAC	4	Relays	LCD	yes		16	4	8	90x70x56	**ZEN-10C1AR-A-V1**
						LED							**ZEN-10C2AR-A-V1**
		6	24 VDC	4	Relays	LCD	yes	yes					**ZEN-10C1DR-D-V1**
						LED		yes					**ZEN-10C2DR-D-V1**
		6	24 VDC	4	Transistors	LCD	yes	yes					**ZEN-10C1DT-D-V1**
						LED		yes					**ZEN-10C2DT-D-V1**
	20 Expand-able up to 44 I/O	12	100 to 240 VAC	8	Relays	LCD	yes					90x122.5x56	**ZEN-20C1AR-A-V1**
						LED							**ZEN-20C2AR-A-V1**
		12	24 VDC	8	Relays	LCD	yes	yes					**ZEN-20C1DR-D-V1**
						LED		yes					**ZEN-20C2DR-D-V1**
		12	24 VDC	8	Transistors	LCD	yes	yes					**ZEN-20C1DT-D-V1**
						LED		yes					**ZEN-20C2DT-D-V1**
Expan-sion I/O units	8	4	100 to 240 VAC	4	Relays							90x70x56	**ZEN-8EAR**
		4	24 VDC	4	Relays								**ZEN-8EDR**
		4	24 VDC	4	Transistors								**ZEN-8EDT**
	4	4	100 to 240 VAC										**ZEN-4EA**
		4	24 VDC										**ZEN-4ED**
				4	Relays								**ZEN-4ER**

Bold = preferred stock item

Accessories and options

EEPROM (for data security and copying)	**ZEN-ME01**
Battery (keeps time, date and bit values for 10 years at 25 °C)	**ZEN-BAT01**
For the programming software, RS-232C cable, 9-way 'D' connector for PC	**ZEN-CIF01**
Support software for Windows	**ZEN-SOFT01-V3**
PS unit 24 VDC, 1.3 A (30 W)	**ZEN-PA03024**
ZEN kit - CPU unit ZEN-10C1AR-A-V1, support software and RS-232C cable	**ZEN-KIT01-EV3**
ZEN kit - CPU unit ZEN-10C1DR-D-V1, support software and RS-232C cable	**ZEN-KIT02-EV3**

Bold = preferred stock item

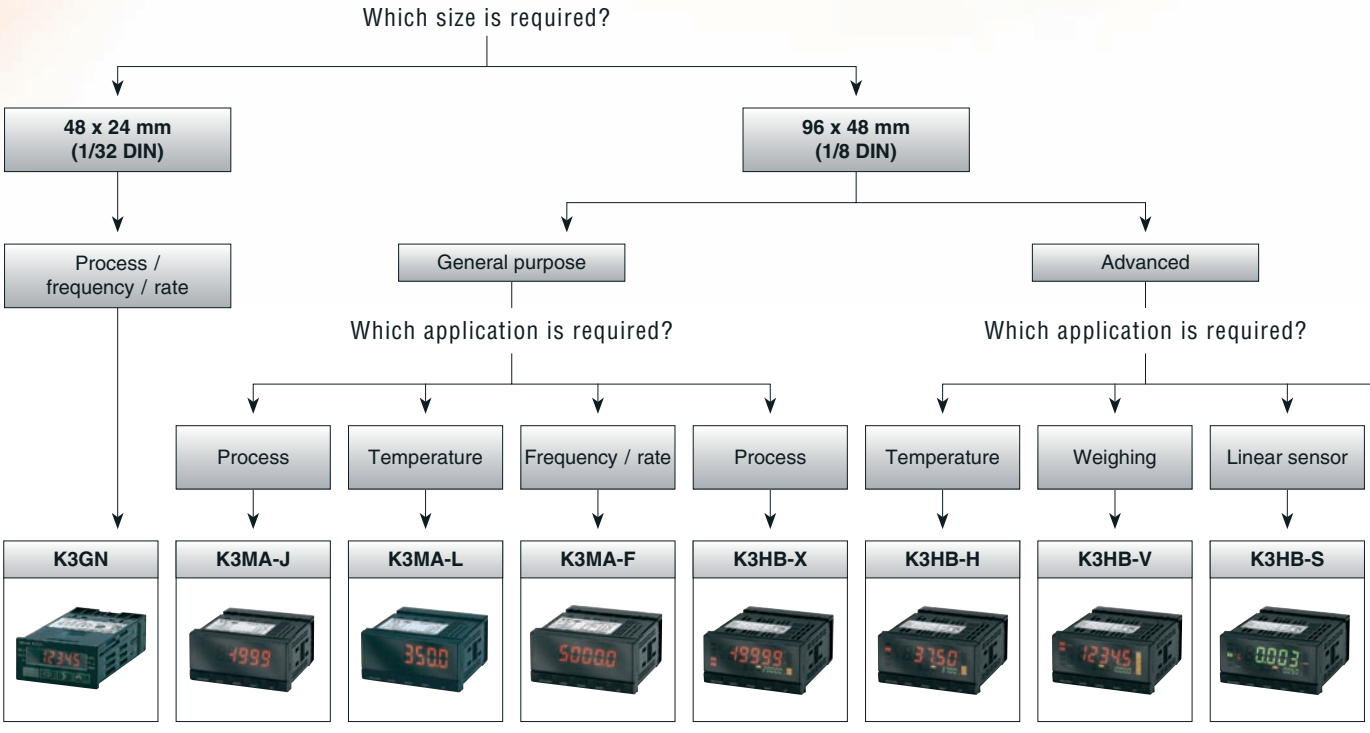
Specifications

Item	Specification	
	ZEN-□0C□AR-A-V1	**ZEN-□0C□D□-D-V1**
Power supply voltage	100 to 240 VAC	24 VDC
Rated power supply voltage	85 to 264 VAC	20.4 to 26.4 VDC
Power consumption	30 V max. (with 3 expansion units connected)	6.5 W max. (with 3 expansion units connected)
Ambient temperature	LCD-type CPU unit (operation panel and calendar / clock function): 0 °C to 55 °C	
	LED-type CPU unit (no operation panel or calendar / clock function): -25 °C to 55 °C	
Ambient storage temperature	LCD-type CPU unit: -20 °C to 75 °C, LED-type CPU unit: -40 °C to 75 °C	
Control method	Stored program control	
I/O control method	Cyclic scan	
Programming language	Ladder diagram	
Program capacity	96 lines (3 input conditions and 1 output per line)	
LCD display	12 characters x 4 lines, with backlight (LCD-type CPU unit only)	
Operation keys	8 (4 cursor keys and 4 operation keys) (LCD-type CPU unit only)	
Super-capacitor holding time	2 days min. (25 °C)	
Battery life (ZEN-BAT01)	10 years min. (25 °C)	
Time function (RTC)	ZEN□0C1□□-□□-□ only, accuracy: 1 to 2 min / month (at 25 °C)	

Digital panel indicators

Omron's digital panel indicator series accepts a wide range of input signals (process, temperature, pulse/impulse, weight, etc.), that can be displayed in any required value. The series also includes a green / red colour change display feature, which clearly visualises the status of a process.

- Multiple inputs, including process, temperature, frequency and many more!
- Highly visible display provides a clear, highly stable read-out of values
- Large, front-panel keys for unambiguous, user-friendly programming
- Dust-proof and waterproof front case that complies with NEMA4X (IP66 equivalent) standards
- Wide range of models with communication capability including DeviceNet

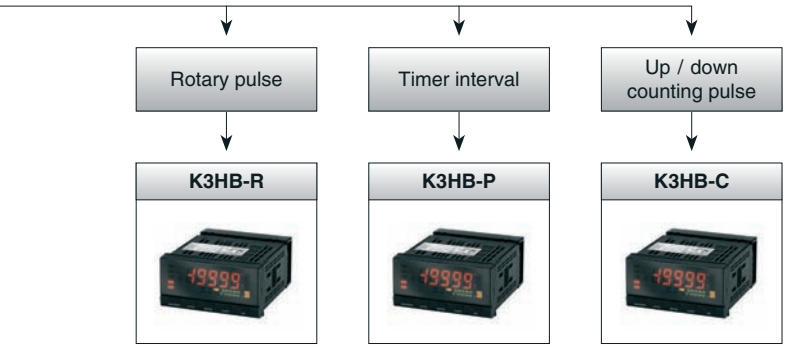


K3HB – Omron's new panel indicator

The K3HB indicators provide a bar-graph position indication, which is unique in 1/8 DIN horizontal housing panel indicators. The sampling speed of this range has been increased to 50 times per second, or 2,000 times per second for the linear sensor indicator version.

Furthermore, users can specify DeviceNet communications, with the option of a DeviceNet output module delivering high-speed data communication with PLCs, without the need for special programming.

The full range of K3HB analogue input panel indicators includes a process indicator (K3HB-X), a temperature indicator (K3HB-H), a weighing indicator (K3HB-V) and a linear sensor indicator (K3HB-S). These indicators provide convenient, high performance solutions in a broad spectrum of applications in the process industry, as well as in machinery applications such as binding, soldering, semiconductor manufacture, moulding and mixing machines. The K3HB indicators are modular in design, which enables users to select exactly the functionality they require.



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Selection table

	Panel indicator type	Multifunctional digital panel indicator	Process indicator	Temperature indicator	Frequency / rate indicator	Process indicator
Selection criteria						
	Model	K3GN	K3MA-J	K3MA-L	K3MA-F	K3HB-X
	Size	1/32 DIN	1/8 DIN			
Features	Colour change display	■	■	■	■	■
	Number of digits	5	5	4	5	5
	Leading zero suppression	■	■	■	■	■
	Forced zero function	■	■	■	■	■
	Min. / max. hold function	■	■	■	■	■
	Average processing	■	■	■	■	■
	User selectable inputs	■	■	■	■	■
	Start-up compensating time	■			■	
	Key protection	■	■	■	■	■
	Decimal point position setting	■	■	■	■	■
	Accuracy	±0.1% of full scale	±0.1% of full scale	±0.1% of full scale	±0.1% of full scale	±0.1% of full scale (DC voltage & DC current), ±0.5% of full scale (AC voltage & AC current)
	Input range	0 to 20 mA, 4 to 20 mA or 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V or 0 to 30 Hz or 0 to 5 kHz	0 to 20 mA, 4 to 20 mA or 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V	Pt100, JPt100 or thermocouple K, J, T, E, L, U, N, R, S, B	0 to 30 Hz or 0 to 5 kHz	0.000 to 10.000 A, 0.0000 to 19.999 mA, -199.99 to 199.99 mA, 4.000 to 20.000 mA, 0.0 to 400.0 V, 0.0000
	Sample rate	4 Hz	4 Hz	0 to 30 Hz or 0 to 5 kHz	0 to 30 Hz or 0 to 5 kHz	50 Hz
	Features	Remote / local processing, parameter initialisation, programmable output configuration, process value hold	Teaching, comparative output pattern selection, parameter initialisation, programmable output configuration, process value hold	Programmable output configuration, process value hold	Teaching, comparative output pattern selection, programmable output configuration, process value hold	Scaling, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output
	Sensor power supply				■	□
Front protection	IP rating	IP66	IP66	IP66	IP66	IP66
	Supply voltage	24 VDC	24 VAC / VDC or 100 to 240 VAC	24 VAC / VDC or 100 to 240 VAC	24 VAC / VDC or 100 to 240 VAC	100 to 240 VAC or 24 VAC / VDC
Inputs	NPN	■		■	■	□
	PNP	■		■	■	□
	Temperature					
	Contact				■	
	Voltage pulse				■	
	Load cell					
	DC voltage	■	■	■		□
	DC current	■	■			□
	AC voltage					□
	AC current					□
Outputs	Relay	■	■	■	■	□
	NPN	■				□
	PNP	■				□
	Linear					□
	BCD					
	Comms	■				□
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Temperature indicator	Weighing indicator	Linear sensor indicator	Rotary pulse indicator	Time interval indicator	Up / down counting pulse indicator
					
K3HB-H	**K3HB-V**	**K3HB-S**	**K3HB-R**	**K3HB-P**	**K3HB-C**
1/8 DIN					
■	■	■	■	■	■
5	5	5	5	5	5
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
■	■	■	■	■	■
			■		
■	■	■	■	■	■
■	■	■	■	■	■
Thermocouple: ±0.3% of full scale, Pt-100: ±0.2% of full scale	±0.1% of full scale	One input: ±0.1% of full scale, two inputs: ±0.2% of full scale	±0.006% rgd ±1 digit ±0.02% rgd ±1 digit	±0.08% rgd ±1 digit	
Pt100, thermocouple K, J, T, E, L, U, N, R, S, B, W	0.00 to 199.99 mV, 0.000 to 19.999 mV, 100.00 mV, 199.99 mV	0 to 20 mA, 4 to 20 mA, 0 to 5 V, -5 to 5 V, -10 to 10 V	No voltage contact: 30 Hz, voltage pulse: 50 kHz, open collector: 50 kHz	No voltage contact: 30 Hz, voltage pulse: 50 kHz, open collector: 50 kHz	No voltage contact: 30 Hz, voltage pulse: 50 kHz, open collector: 50 kHz
50 Hz	50 Hz	2000 Hz	50 Hz	50 Hz	50 Hz
Scaling, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output	Scaling, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output	Scaling, 2-input calculation, teaching, averaging, output hysteresis, output OFF-delay, output test, bank selection, reset, comparative output	Scaling, measurement operation selection, averaging, previous average value comparison, output hysteresis, output OFF-delay, output test, teaching, display value selection, display colour selection, key protection, bank selection, display refresh period, maximum / minimum hold, reset	Scaling, measurement operation selection, output hysteresis, output OFF-delay, output test, teaching, display value selection, display colour selection, key protection, bank selection, display refresh period, maximum / minimum hold, reset	Scaling, measurement operation selection, output hysteresis, output OFF-delay, output test, display value selection, display colour selection, key protection, bank selection, display refresh period, maximum / minimum hold, reset
□	□	□	□	□	□
IP66	IP66	IP66	IP66	IP66	IP66
100 to 240 VAC or 24 VAC / VDC	100 to 240 VAC or 24 VAC / VDC	100 to 240 VAC or 24 VAC / VDC	100 to 240 VAC or 24 VAC / VDC	100 to 240 VAC or 24 VAC / VDC	100 to 240 VAC or 24 VAC / VDC
□	□	□	■	■	■
□	□	□	■	■	■
■					
			■	■	■
	■				
		■			
		■			
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□	□	□	□	□	□
□	□	□	□	□	□
			□	□	□
□	□	□	□	□	□
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■ Standard □ Available No / not available

Compact and intelligent digital panel meter

The K3GN is able to cover a wide variety of applications with its 3 main functions: process meter, RPM processor/tachometer and digital data display for PC / PLC. Configuration is easy and the design is advanced and compact.

- Process indicator DC voltage / current
- RPM process / tachometer
- Digital data display for PC / PLC
- Very compact 1/32 DIN housing: 24Hx48Wx83D mm
- 5-digit display with programmable display colour, in red or green

Ordering information

Input type	Supply voltage	Output	Model	
			No communications	RS-485
DC voltage / current, NPN	24 VDC	Dual relays (SPST-NO)	**K3GN-NDC 24 DC**	**K3GN-NDC-FLK 24 DC**
		Three NPN open collector	**K3GN-NDT1 24 DC**	K3GN-NDT1-FLK 24 DC
DC voltage / current, PNP		Dual relays (SPST-NO)	**K3GN-PDC 24 DC**	**K3GN-PDC-FLK 24 DC**
		Three PNP open collector	**K3GN-PDT2 24 DC**	K3GN-PDT2-FLK 24 DC

Bold = preferred stock item

Specifications

Supply voltage	24 VDC
Operating voltage range	85% to 110% of the rated supply voltage
Power consumption	2.5 W max. (at max. DC load with all indicators lit)
Ambient temperature	Operating: -10 °C to 55 °C (with no condensation or icing) Storage: -25 °C to 65 °C (with no condensation or icing)
Display refresh period	Sampling period (sampling times multiplied by number of averaging times if average processing is selected)
Max. displayed digits	5 digits (-19999 to 99999)
Display	7-segment digital display, character height: 7.0 mm
Polarity display	"-" is displayed automatically with a negative input signal
Zero display	Leading zeros are not displayed
Scaling function	Programmable with front-panel key inputs (range of display: -19999 to 99999). The decimal point position can be set as desired.
External controls	HOLD: (measurement value held)
	ZERO: (forced-zero)
Hysteresis setting	Programmable with front-panel key inputs (0001 to 9999)
Other functions	Programmable colour display Selectable output operating action Teaching set values Average processing (simple average) Lockout configuration Communications writing control (communications output models only)
Output	Relays: 2 SPST-NO Transistors: 3 NPN open collector 3 PNP open collector
	Combinations: Communications output (RS-485) + relay outputs Communications output (RS-485) + transistor outputs Communications output (RS-485) + transistor outputs (3 PNP open collector)
Communications	Communications function: RS-485
Delay in comparative outputs (transistor outputs)	750 ms max.
Degree of protection	Front-panel: NEMA4X for indoor use (equivalent to IP66) Rear case: IEC standard IP20 Terminals: IEC standard IP20
Memory protection	Non-volatile memory (EEPROM) (possible to rewrite 100,000 times)
Size in mm	24Hx48Wx80D

Highly visible LCD display with 2-colour (red and green) LEDs

The K3MA series comes with a process meter, a frequency / rate meter and a temperature meter of either 100 to 240 VAC or 24 VAC / VDC. All are equipped with the same quality display and have the same short depth of 80 mm.

- DIN-size of 48Hx96W mm
- Highly visible, negative transmissive backlit LCD display
- 14.2 mm high characters
- 5 digits (-19,999 to 99,999), K3MA-L: 4 digits
- Front-panel IP66

Ordering information

Indicator	Input type & ranges	Supply voltage	Output	Model
Process meter	DC voltage: 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V DC current: 0 to 20 mA, 4 to 20 mA	100 to 240 VAC	2 relay contact outputs (SPST-NO)	**K3MA-J-A2 100-240VAC**
		24 VAC / VDC	2 relay contact outputs (SPST-NO)	**K3MA-J-A2 24VAC/VDC**
Temperature meter	Platinum-resistance thermometer: Pt100, JPt100 or thermocouple K, J, T, E, L, U, N, R, S, B	100 to 240 VAC	1 relay contact output (SPDT)	**K3MA-L-C 100-240VAC**
		24 VAC / VDC	1 relay contact output (SPDT)	**K3MA-L-C 24VAC/VDC**
Frequency / rate meter	Rotary pulse: no voltage: 0.05 to 30.00 Hz; open collector: 0.1 to 5000.0 Hz	100 to 240 VAC	2 relay contact outputs (SPST-NO)	**K3MA-F-A2 100-240VAC**
		24 VAC / VDC	2 relay contact outputs (SPST-NO)	**K3MA-F-A2 24VAC/VDC**

Bold = preferred stock item

Accessories

Name	Model
Splash-proof soft cover	**K32-49SC**
Hard cover	K32-49HC

Bold = preferred stock item

Specifications

Item	100-240 VAC models	24 VAC / VDC models
Supply voltage	100 to 240 VAC	24 VAC (50 / 60 Hz), 24 VDC
Operating voltage range	85% to 110% of the rated supply voltage	
Power consumption (under maximum load)	6 VA max.	4.5 VA max. (24 VAC) 4.5 W max. (24 VDC)
Ambient temperature	Operating: -10 °C to 55 °C (with no condensation or icing) Storage: -25 °C to 65 °C (with no condensation or icing)	
Weight	Approx. 200 g	
Display	7-segment digital display, character height: 14.2 mm	
Polarity display	"-" is displayed automatically with a negative input signal	
Zero display	Leading zeros are not displayed	
Hold function	Max. hold (maximum value), min. hold (minimum value)	
Hysteresis setting	Programmable with front-panel key inputs (0001 to 9,999)	
Delay in comparative outputs	1 s max.	
Degree of protection	Front-panel: NEMA4X for indoor use (equivalent to IP66) Rear case: IEC standard IP20 Terminals: IEC standard IP00 + finger protection (VDE 0106 / 100)	
Memory protection	Non-volatile memory (EEPROM) (possible to rewrite 100,000 times)	
Size in mm	48Hx96Wx80D	

Process, temperature, weighing and linear sensor indicators

These indicators with analogue input feature a clear and easy-to-use colour change display. All models are equipped with an IP66 housing. K3HB series is high-speed, with a sample rate of 50 Hz, and even 2,000 Hz for K3HB-S

- Position meter indication for easy monitoring
- Optional DeviceNet, RS-232C, RS-485
- Double display, with 5 digits, in two colours
- Dimensions: 48Hx96Wx100D mm

Ordering information

Type of indicator	Input sensor type and range	Supply voltage	Base unit model
Process indicator K3HB-X	AC current input, from 0.000 to 10.000 A, 0.0000 to 19.999 mA	100 - 240 VAC	**K3HB-XAA 100-240VAC**
		24 VAC / VDC	**K3HB-XAA 24VAC/VDC**
	DC current input, from ±199.99 mA, to 4.000 to 20.000 mA	100 - 240 VAC	**K3HB-XAD 100-240VAC**
		24 VAC / VDC	**K3HB-XAD 24VAC/VDC**
	AC voltage input, from 0.0 to 400.0 V to 0.0000 to 1.999 V	100 - 240 VAC	**K3HB-XVA 100-240VAC**
		24 VAC / VDC	**K3HB-XVA 24VAC/VDC**
	DC voltage input, from ±199.99 V to 1.0000 to 5.0000 V	100 - 240 VAC	**K3HB-XVD 100-240VAC**
		24 VAC / VDC	**K3HB-XVD 24VAC/VDC**
Temperature indicator K3HB-H	Temperature input Pt100, thermocouple K, J, T, E, L, U, N, R, S, B, W	100 - 240 VAC	**K3HB-HTA 100-240VAC**
		24 VAC / VDC	**K3HB-HTA 24VAC/VDC**
Weighing indicator K3HB-V	Load cell input (DC low voltage input), 0.00 to 199.99 mV, 0.000 to 19.999 mV, 100.00 mV, 199.999 mV	100 - 240 VAC	**K3HB-VLC 100-240 VAC**
		24 VAC / VDC	**K3HB-VLC 24VAC/VDC**
Linear sensor indicator K3HB-S	DC process input, 0 to 5 V, 1 to 5 V, -5 to 5 V, -10 to 10 V, 0 to 20 mA, 4 to 20 mA	24 VAC / VDC	**K3HB-SSD AC/DC24**
		100 - 240 VAC	**K3HB-SSD AC100-240**

Bold = preferred stock item

Option boards

Sensor power supply / output boards

Slot	Output		Sensor power supply	Communications	Model	Applicable indicator types
B	Relay	PASS: SPDT	12 VDC ±10%, 80 mA		**K33-CPA** *1	K3HB-X, -H, -S
	Linear current	DC0(4) - 20 mA			**K33-L1 A** *2	K3HB-X, -H, -S
	Linear voltage	DC0(1) - 5 V, 0 to 10 V			**K33-L2A** *2	K3HB-X, -H, -S
					K33-A *2	K3HB-X, -H, -S
				RS-232C	**K33-FLK1 A** *2	K3HB-X, -H, -S
				RS-485	**K33-FLK3A** *2	K3HB-X, -H, -S
	Relay	PASS: SPDT	10 VDC ±5%, 100 mA		**K33-CPB** *1	K3HB-V
	Linear current	DC0(4) - 20 mA			**K33-L1B** *2	K3HB-V
	Linear voltage	DC0(1) - 5 V, 0 to 10 V			K33-L2B *2	K3HB-V
					K33-B *2	K3HB-V
				RS-232C	**K33-FLK1B** *2	K3HB-V
				RS-485	**K33-FLK3B** *2	K3HB-V

Relay / transistor output boards

Slot	Output		Communications	Model
C	Relay	H / L: SPDT each		**K34-C1**
		HH / H / LL / L: SPST-NO each		**K34-C2**
	Transistor	NPN open collector: HH / H / PASS / L / LL		**K34-T1**
		PNP open collector: HH / H / PASS / L / LL		**K34-T2**
			DeviceNet	**K34-DRT** *2

Event input boards

Slot	Input type	Number of points	Communications	Model
D	NPN open collector	5	M3 terminal blocks	**K35-1**
		8	10-pin MIL connector	**K35-2**
	PNP open collector	5	M3 terminal blocks	**K35-3**
		8	10-pin MIL connector	**K35-4**

*1 CPA / CPB can be combined with relay outputs only.

*2 Only one of the following can be used by each digital indicator: RS-232C / RS-485 communications, a linear output, or DeviceNet communications. K3HB has got three slots for option boards: slot B, slot C and slot D.

Bold = preferred stock item

Accessories

Special cable (for event inputs with 8-pin connector)	**K32-DICN**

Bold = preferred stock item

Specifications

Power supply voltage			100 to 240 VAC (50 / 60 Hz), 24 VAC / VDC, DeviceNet power supply: 24 VDC
Allowable power supply voltage range			85% to 110% of the rated power supply voltage, DeviceNet power supply: 11 to 25 VDC
Power consumption			100 to 240 V: 18 VA max. (max. load), 24 VAC / DC: 11 VA / 7 W max. (max. load)
Display method			Negative LCD (backlit LED) display 7-segment digital display (character height: PV: 14.2 mm (green / red); SV: 4.9 mm (green))
Ambient operating temperature			-10 °C to 55 °C (with no icing or condensation)
Display range			-19,999 to 99,999
Weight			Approx. 300 g (base unit only)
Degree of protection		**Front-panel**	Conforms to NEMA 4X for indoor use (equivalent to IP66)
		Rear case	IP20
		Terminals	IP00 + finger protection (VDE0106 / 100)
Memory protection			EEPROM (non-volatile memory), number of rewrites: 100,000
Event input ratings		**Contact**	ON: 1 kΩ max., OFF: 100 kΩ min.
		No-contact	ON residual voltage: 2 V max., OFF leakage current: 0.1 mA max., load current: 4 mA max. Maximum applied voltage: 30 VDC max.
Output ratings	**Transistor output**	**Maximum load voltage**	24 VDC
		Maximum load current	50 mA
		Leakage current	100 μA max.
	Contact output (resistive load)	**Rated load**	5 A at 250 VAC, 5 A at 30 VDC
		Rated through current	5 A
		Mechanical life expectancy	5,000,000 operations
		Electrical life expectancy	100,000 operations
	Linear output	**Allowable load impedance**	500 Ω max. (mA); 5 kΩ min. (V)
		Resolution	Approx. 10,000
		Output error	±0.5% FS
Size in mm			48Hx96Wx100D

Rotary pulse, timer interval and up- / down-counting pulse indicators

These indicators with analogue input feature a clear and easy-to-use colour change display. All models are equipped with an IP66 housing. K3HB-R and -C are high-speed, with a sample rate up to 50 kHz.

- Position meter indication for easy monitoring
- Optional DeviceNet, RS-232C, RS-485
- Double display, with 5 digits, in two colours
- Dimensions: 48Hx96Wx100D mm

Ordering information

Type of indicator	Input ranges	Supply voltage	Input sensor	Base unit model
Rotary pulse indicator K3HB-R	No voltage contact: 30 Hz max. Voltage pulse: 50 kHz max. Open collector: 50 kHz max.	100 - 240 VAC	NPN input / voltage pulse	**K3HB-RNB 100-240VAC**
		24 VAC / VDC		**K3HB-RNB 24VAC/VDC**
		100 - 240 VAC	PNP input	**K3HB-RPB 100-240VAC**
		24 VAC / VDC		**K3HB-RPB 24VAC/VDC**
		100 - 240 VAC		**K3HB-PNB 100-240VAC**
		100 - 240 VAC		**K3HB-PPB 100-240VAC**
Timer interval indicator K3HB-P		24 VAC / VDC		**K3HB-PPB 24VAC/VDC**
		100 - 240 VAC		**K3HB-CNB 100-240VAC**
Up / down counting pulse indicator K3HB-C		24 VAC / VDC		**K3HB-CNB 24VAC/VDC**
		24 VAC / VDC		**K3HB-CPB 24VAC/VDC**

Bold = preferred stock item

Option boards

Sensor power supply / output boards

Slot	Output		Sensor power supply	Communications	Model
B	Relay	PASS: SPDT	12 VDC ±10%, 80 mA		**K33-CPA** *1
	Linear current	DC0(4) - 20 mA			**K33-L1 A** *2
	Linear voltage	DC0(1) - 5 V, 0 to 10 V			**K33-L2A** *2
					K33-A *2
				RS-232C	**K33-FLK1 A** *2
				RS-485	**K33-FLK3A** *2

Relay / transistor output boards

Slot	Output		Communications	Model
C	Relay	H / L: SPDT each		**K34-C1**
		HH / H / LL / L: SPST-NO each		**K34-C2**
	Transistor	NPN open collector: HH / H / PASS / L / LL		**K34-T1**
		PNP open collector: HH / H / PASS / L / LL		**K34-T2**
			DeviceNet	**K34-DRT** *2
	BCD + transistor	NPN open collector: HH / H / PASS / L / LL		**K34-BCD**

Bold = preferred stock item

Event input boards

Slot	Input type	Number of points	Communications	Model
D	NPN open collector	5	M3 terminal blocks	**K35-1**
		8	10-pin MIL connector	**K35-2**
	PNP open collector	5	M3 terminal blocks	**K35-3**
		8	10-pin MIL connector	**K35-4**

*1 CPA can be combined with relay outputs only.
*2 Only one of the following can be used by each digital indicator: RS-232C / RS-485 communications, a linear output, or DeviceNet communications. K3HB has got three slots for option boards: slot B, slot C and slot D.

Bold = preferred stock item

Accessories

Special cable (for event inputs with 8-pin connector)	**K32-DICN**
Special BCD output cable	**K32-BCD**

Bold = preferred stock item

Specifications

Power supply voltage			100 to 240 VAC (50 / 60 Hz), 24 VAC / VDC, DeviceNet power supply: 24 VDC
Allowable power supply voltage range			85% to 110% of the rated power supply voltage, DeviceNet power supply: 11 to 25 VDC
Power consumption			100 to 240 V: 18 VA max. (max. load), 24 VAC / DC: 11 VA / 7 W max. (max. load)
Display method			Negative LCD (backlit LED) display 7-segment digital display (character height: PV: 14.2 mm (green / red); SV: 4.9 mm (green))
Ambient operating temperature			-10 °C to 55 °C (with no icing or condensation)
Display range			-19,999 to 99,999
Weight			Approx. 300 g (base unit only)
Degree of protection		**Front-panel**	Conforms to NEMA 4X for indoor use (equivalent to IP66)
		Rear case	IP20
		Terminals	IP00 + finger protection (VDE0106 / 100)
Memory protection			EEPROM (non-volatile memory), number of rewrites: 100,000
Event input ratings		**Contact**	ON: 1 kΩ max., OFF: 100 kΩ min.
		No-contact	ON residual voltage: 2 V max., OFF leakage current: 0.1 mA max., load current: 4 mA max. Maximum applied voltage: 30 VDC max.
Output ratings	**Transistor output**	**Maximum load voltage**	24 VDC
		Maximum load current	50 mA
		Leakage current	100 μA max.
	Contact output (resistive load)	**Rated load**	5 A at 250 VAC, 5 A at 30 VDC
		Rated through current	5 A
		Mechanical life expectancy	5,000,000 operations
		Electrical life expectancy	100,000 operations
	Linear output	**Allowable load impedance**	500 Ω max. (mA); 5 kΩ min. (V)
		Resolution	Approx. 10,000
		Output error	±0.5% FS
Size in mm			48Hx96Wx100D