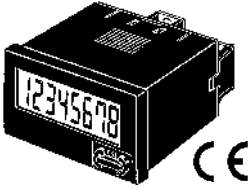
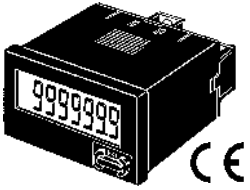
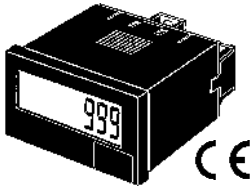
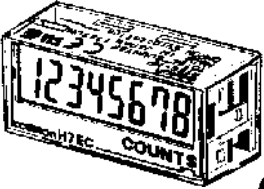
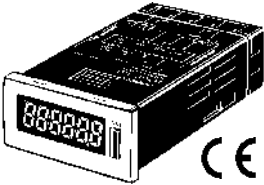
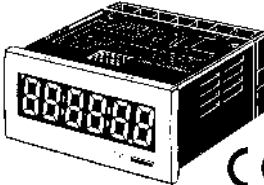


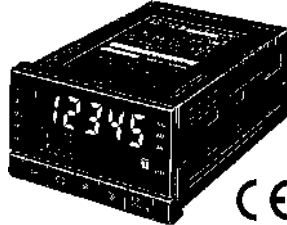
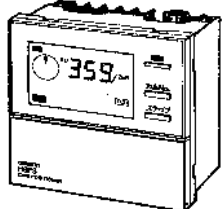


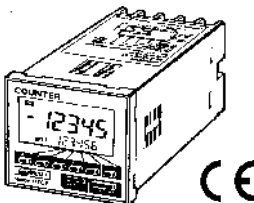
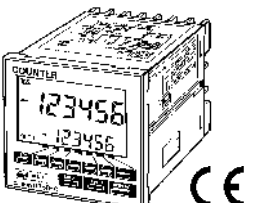
## Counters

Classification	Self-powered Total Counter	Self-powered Time Counter	Self-powered Tachometer
Model	H7EC	H7ET	H7ER
Appearance and dimensions	<ul style="list-style-type: none"> <li>• Beige</li> <li>• Black</li> </ul> 	<ul style="list-style-type: none"> <li>• Beige</li> <li>• Black</li> </ul> 	<ul style="list-style-type: none"> <li>• Beige</li> <li>• Black</li> </ul> 
Counting mode	Up type	Up type	Up type
Supply voltage	Backlight model: 24 VDC (only for backlight) No-backlight model: Self-powered	Backlight model: 24 VDC (only for backlight) No-backlight model: Self-powered	Backlight model: 24 VDC (only for backlight) No-backlight model: Self-powered
Number of digits displayed	8	7	4 or 5
Display	7-segment, LCD with or without backlight	7-segment, LCD with or without backlight	7-segment, LCD with or without backlight
Dimensions (W x H x D mm)	48 x 24 x 48.5 mm	48 x 24 x 48.5 mm	48 x 24 x 48.5 mm
Counting speed	PNP/NPN universal DC voltage input and no-voltage input: 30 Hz or 1 kHz (switchable) AC/DC multi-voltage input: 20 Hz	-	1 kHz with the 4-digit model 10 kHz with the 5-digit model
Time range	-	0.0 h..999999.9 h/ 0.0 h..3999 d 23.9 h or 0 s..999 h 59 m 59 s/ 0.0 m..9999 h 59.9 m	-
Control input	No-voltage input, voltage input (PNP/NPN universal DC voltage input, AC/DC multi-voltage input)	No-voltage input, voltage input (PNP/NPN universal DC voltage input, AC/DC multi-voltage input)	No-voltage input, voltage input (PNP/NPN universal DC voltage input)
Reset system	External (reset time: 0.02 s) and manual reset	External (reset time: 0.02 s) and manual reset	-
Power consumption	Approx. 0.3 W (backlight model)	Approx. 0.3 W (backlight model)	Approx. 0.3 W (backlight model)
Control output	-	-	-
Power source for external supply	-	-	-
Terminal connection method	Screw, optional wire-wrap	Screw, optional wire-wrap	Screw, optional wire-wrap
EMC Standards	Conforms to EN50081-1, EN50082-2	Conforms to EN50081-1, EN50082-2	Conforms to EN50081-1, EN50082-2
Weight	Backlight model: Approx. 65 g No-backlight model: Approx. 60 g	Backlight model: Approx. 65 g No-backlight model: Approx. 60 g	Backlight model: Approx. 65 g No-backlight model: Approx. 60 g
Safety standards	UL, CSA, LR, conforms to EN61010-1, conforms to VDE0106/P100, CE marking	UL, CSA, LR, conforms to EN61010-1, conforms to VDE0106/P100, CE marking	UL, CSA, LR, conforms to EN61010-1, conforms to VDE0106/P100, CE marking
Page No.	C-9	C-17	C-25

PCB-mounting Counter	Total Counter/Time Counter		Preset Counter/Timer
H7E□-N□P	H7GP	H7HP	H8GN
	<ul style="list-style-type: none"> <li>• Beige</li> <li>• Black</li> </ul> 	<ul style="list-style-type: none"> <li>• Beige</li> <li>• Black</li> </ul> 	<ul style="list-style-type: none"> <li>• Black</li> </ul> 
Up type	Up type	Reversible type	Up/Down/Reversible type
3 VDC	100..240 VAC (50/60 Hz), 12..24 VDC	100..240 VAC (50/60 Hz), 12..24 VDC	24 VDC
7 or 8	6	6 or 8	PV: 4 digits SV: 4 digits When total count value is displayed: 8 digits
7-segment, LCD	7-segment, negative transmissive LCD with red backlight	7-segment, negative transmissive LCD with red backlight	7-segment, negative transmissive LCD with backlight
44.8 x 22.4 x 17.3 mm	48 x 24 x 80 mm	72 x 36 x 65.8 mm	48 x 24 x 80 mm
30 Hz or 1 kHz	30 Hz/5 kHz	30 Hz/5 kHz	30 Hz or 5 kHz
-	0.1..99999.9 h/ 1 s..99 h 59 m 59 s	0.1..99999.9 h/ 1 s..99 h 59 m 59 s	0.001 s..9999 h
No-voltage input	No-voltage input or DC voltage input (switchable)	No-voltage input or DC voltage input (switchable)	No-voltage input
External (reset time: 0.02 s), Power-OFF (0.5 s)	External and manual resets Reset time: 0.02 s (time counter), 0.02 s or 0.001 s (total counter)	External and manual resets Reset time: 0.02 s (time counter), 0.02 s or 0.001 s (total counter)	External reset (reset time: 0.001 s, 0.02 s selectable), power-OFF (0.5 s), and manual
-	Approx. 6.5 VA Approx. 0.6 W	Approx. 6.5 VA Approx. 0.6 W	1.5 W max.
-	-	-	Contact output: SPDT 3 A at 250 VAC/30 VDC, resistive load ( $\cos\phi=1$ )
-	50 mA at 12 VDC	50 mA at 12 VDC	-
Direct mounting on PC Board or mounting on 28-pin socket	Screw	Screw	Screw
Conforms to EN61326	Conforms to EN50081-2, EN50082-2	Conforms to EN50081-2, EN50082-2	Conforms to EN61326
Approx. 20 g	Approx. 76 g	Approx. 106 g	Approx. 80 g
UL, CSA, CE marking	UL, CSA, conforms to EN61010-1, CE marking	UL, CSA, conforms to EN61010-1, CE marking	UL, CSA, LR, conforms to EN61010-1, conforms to VDE0106/P100, CE mark- ing
C-31	C-45	C-51	C-61

## Counters

Classification	Preset Counter	Up/Down Counting Meter	Cam Positioner
Model	H7CX	K3NC	H8PS
Appearance			
Counting mode	Up/Down/Reversible/Speed	Up/Down type	-
Supply voltage	100..240VAC 12..24VDC/24VAC	100..240 VAC (50/60 Hz); 12..24 VDC	24 VDC
Number of digits displayed	PV: 4 digits, SV: 4 digits or PV: 6 digits, SV: 6 digits	5	3 (0°..359°)
Display	7-segment, negative transmissive LCD with backlight	7-segment, LEDs	7-segment, LCD with backlight
Dimensions (W x H x D mm)	48 x 48 x 64 to 100 mm	96 x 48 x 130 mm	96 x 96 x 46 mm
Counting speed	30 Hz or 5 kHz Tachometer up to 10 kHz	Non-voltage contact (30 Hz max.)	330 min <sup>-1</sup> {rpm}
Time range	-		
Control input	No-voltage input, DC voltage input (NPN / PNP)	No-voltage input	Accepts input from a special absolute encoder
Reset system	External, manual and automatic reset	External reset (reset time: 0.016 s max.)	-
Power consumption	Approx. 9.2 VA at 264 VAC Approx. 7.2 VA at 26.4 VAC Approx. 3.7 W at 12 VDC	15 VA max. (max. AC load with all indicators lit) 10 W max. (max. DC load with all indicators lit)	Approx. 4 W
Control output	<u>Contact output:</u> 3 A at 250 VAC/30 VDC  <u>Transistor output:</u> NPN open collector, 100 mA at 30 VDC	<u>Contact output:</u> 5 A at 250 VAC/5 A at 30 VDC, resistive load (cosφ = 1); 1.5 A at 250 VAC/1.5 A at 30 VDC, inductive load (cosφ = 0.4, L/R = 7 ms) Min. applicable load; 10 mA at 5 VDC <u>Transistor output:</u> 12..24 VDC +10%/-15%, 50 mA max.	Solid-state output: Open collector 30 VDC max. 100 mA max.
Power source for external supply	100 mA at 12 VDC±10%	80 mA at 12 VDC±10%	(To rotary encoder)
Terminal connection method	Screw Socket (P2CF, P3G)	Screw	Screw
EMC Standards	Conforms to EN61326	Conforms to EN50081-2, EN50082-2	Conforms to EN50081-2, EN50082-2
Weight	Approx. 140 g	Approx. 400 g	Approx. 300 g
Safety standards	UL, CSA, LR, conforms to EN61010-1, conforms to VDE0106/P100, CE marking	UL, CSA, conforms to EN61010-1, CE marking	UL, CSA, CE marking
Page No.	C-87	C-131	C-155

Preset Counter	
H7CR	H7BR
	
Up/Down/Reversible type	Up/Down/Reversible type
100..240 VAC (50/60 Hz), 24 VAC 12..24 VDC	100..240 VAC (50/60 Hz), 24 VAC/12..24 VDC
6 or 4	-5..6
7-segment, LCD with backlight	7-segment, LCD with backlight
48 x 48 x 64 to 100 mm	72 x 72 x 100 mm
30 Hz/1 kHz/5 kHz	30Hz/1 kHz/5 kHz/10 kHz
-	-
No-voltage input, DC voltage input	No-voltage input, DC voltage input
External (reset time: 0.001 s, 0.02 s selectable), power-OFF (0.5 s) (H7CR-8 only), manual, and automatic resets	External (reset time 0.001 s, 0.02 s selectable), manual, and automatic resets
Approx. 6.6 VA	Approx. 10 VA at 50 Hz, 240 VAC; Approx. 6 W at 24 VDC
<u>Contact:</u> 3 A at 250 VAC, resistive load ( $\cos\phi = 1$ ); <u>Transistor output:</u> Open collector: 100 mA max. at 30 VDC max.,; residual voltage: 2 VDC max.	<u>Contact:</u> 3 A at 250 VAC, resistive load ( $\cos\phi = 1$ ); <u>Transistor output:</u> Open collector: 100 mA max. at 30 VDC max.,; residual voltage: 2 VDC max.
100 mA at 12 VDC 50 mA at 24 VDC	160 mA at 12 VDC $\pm 10\%$ ; 80 mA at 24 VDC $\pm 10\%$
Screw Socket (P2CF, P3G)	Screw
Conforms to EN50081-2, EN50082-2	Conforms to EN50081-2, EN50082-2
Approx. 120 g..230 g	Approx. 270 g
UL, CSA, conforms to EN61010-1, CE marking	UL, CSA, conforms to EN61010-1, CE marking
This product is not shown in the catalogue. For more information please contact your local Omron sales office or download the data from <a href="http://www.eu.omron.com">www.eu.omron.com</a>	