

Hour meters / timers, electronic

LCD hour meters	Max. time range 99999 h 59 min or 99999.99 h (battery)	Codix 134
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The Codix 134 is a simple battery-powered hour meter for PNP, NPN and high voltage applications.

Its 7-digit LCD display with optional backlighting can display various time ranges.



Battery powered	Timer	Pulse counter/Totaliser	DC 4 ... 30 V	AC 10 ... 260 V	Temperature range - 10° + 60°	High protection level IP65	DIN front bezel DIN 48 x 24	LCD display 7 LCDs	Lockable reset

Powerful

- High quality LCD display with 8 mm high figures – optional display backlighting
- Time range hours with minutes or industry minutes
1 pulse = 36 sec programmable via control input
- Battery lifetime 8 years
- High voltage versions for 10 ... 260 V AC/DC voltage pulses, thus to be connected directly via contactors, relays and motors
- Very high accuracy: 100 ppm

Simple

- Screw terminals, RM 5 mm
- Reset key lockable via the input 'Reset Enable'
- According to version for PNP, NPN switching level or high voltage version for 10 ... 260 V AC/DC switching voltage
- Accumulated time is always readable thanks to battery powering
- High protection level IP65

Order code

6.134 . 012 . 8XX
a b

a Backlighting
 5 = without ¹⁾
 6 = with

b Count input

Mode	INP A:		INP B	
0 = Timer ¹⁾	–		0 ... 0.7 V DC	NPN
1 = Timer ¹⁾	–		4 ... 30 V DC	PNP
3 = Timer ¹⁾	10 ... 260 V AC/DC	AC/DC	10 ... 260 V AC/DC	AC/DC

Delivery specification

- Timer
- Mounting clip
- Front bezel for screw mounting (T008181)
56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Front bezel for clip mounting (T008180)
53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Gasket
- Instruction manual, multilingual

1) Stock types

Hour meters / timers, electronic

LCD hour meters	Max. time range 99999 h 59 min or 99999.99 h (battery)	Codix 134
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Accessories	Dimensions in mm [inch]	Order-No.
Adapter front bezel, 72 x 36 [2.83 x 1.42]	For cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set black and silver anodised	162704 Set
Adapter front bezel, 48 x 48 [1.89 x 1.89]	For cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94] black	T008883
Adapter front bezel, 60 x 50 [2.36 x 1.97]	For cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94] black	N003001
Transparent cover, lockable, IP65	For cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	N003002
Sealing cover type K1, IP65	Suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	G008301
Mounting frame with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94] chromated	G300004

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.

Technical data

General technical data	
Display	LCD, 7 digits, 8 mm [0.32"] high
Backlighting	external electrical source 24 V DC $\pm 20\%$, 50 mA
Modes	adding
Display range	see next page
Reset	manual and electrical
Working temperature	-10°C ... +55°C [+14°F ... +131°F] (non-condensing)
Operating temperature	-10°C ... +60°C [+14°F ... +140°F] (non-condensing)
Storage temperature	-20°C ... +70°C [-4°F ... +158°F]
Altitude	up to 2000 m [6562']

Electrical characteristics	
Power supply	internal lithium battery approx. 8 years at 20°C [68°F]
EMC	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2
Device safety	Designed to EN 61010 part 1 Protection class 2 Application area Pollution level 2
UL approval	File-No.: E128604
Measuring error	per Start/Stop cycle a maximum error in the order of the smallest measuring time selected can occur

Mechanical characteristics	
Housing	dark grey RAL 7021
Protection	IP65 (front side)
Weight	approx. 50 g [1.76 oz]

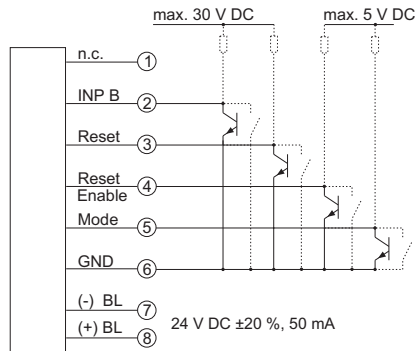
Count input	
A. Timer inputs DC versions (max. 30 V DC) INP B	
Timer input	NPN or PNP depending on the type (see table)
Switching level	NPN LOW: 0 ... 0.7 V DC HIGH: 3 ... 30 V DC PNP LOW: 0 ... 0.7 V DC HIGH: 4 ... 30 V DC
Counting start	NPN for LOW signal at the timer input PNP for HIGH signal at the timer input
B. Timer inputs high voltage versions (10 ... 260 V DC/V AC) INP A	
Timer input	optocoupler input
Min. pulse time	16 ms
Switching level	LOW: 0 ... 2 V DC/V AC HIGH: 10 ... 260 V DC/V AC
Counting start	for HIGH signal at the timer input
C. Time range change (Mode)	
Contact input	NPN open collector (switching at 0 V) LOW 0 ... 0.7 V DC HIGH 3 ... 5 V DC
Time range	depending on the circuit (s. order inform.)
D. Reset input for DC (reset) and High voltage (INPB)	
Min. pulse time	DC 50 ms High voltage 16 ms
Contact input DC	NPN LOW 0 ... 0.7 V DC HIGH 3 ... 30 V DC
High voltage input	10 ... 260 V AC/DC
E. Reset locking input (for DC and AC)	
Electrical reset key locking	
Input not active	reset key locked
Contact input	open collector NPN (switching at 0 V)
Switching level	NPN LOW 0 ... 0.7 V DC HIGH 3 ... 5 V DC

Hour meters / timers, electronic

LCD hour meters	Max. time range 99999 h 59 min or 99999.99 h (battery)	Codix 134
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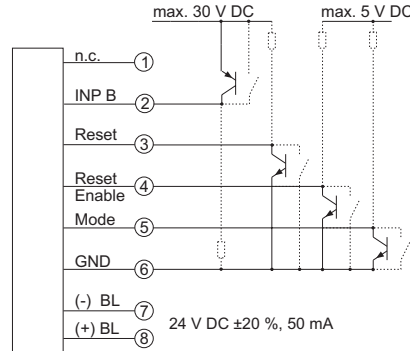
Terminal assignment

DC type: 6.134.012.8x0

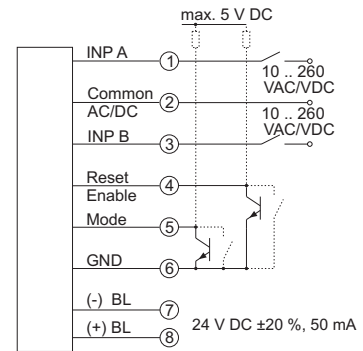


BL = backlighting

DC type: 6.134.012.8x1



AC type: 6.134.012.8x3

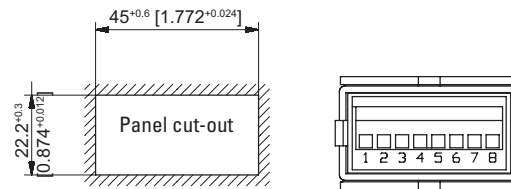
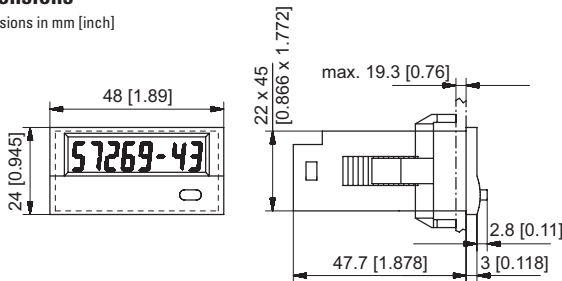


Display and time ranges

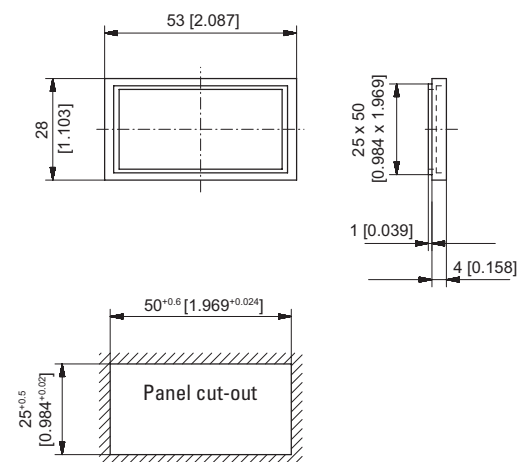
time range	display
99999 h 59 m	99999 - 59
99999.99 h	99999 - 99

Dimensions

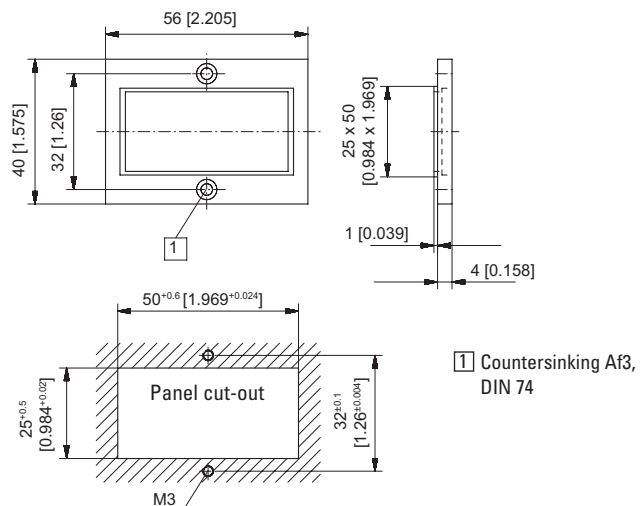
Dimensions in mm [inch]



Front bezel for clip mounting (included in delivery)



Front bezel for screw mounting (included in delivery)



Hour meters / timers, electronic

LCD hour meters **Max. time range 9999 h 59 min 59 sec or 9999999.9 sec (battery)** **Codix 135**



The Codix 135 is a simple battery-powered hour meter for PNP, NPN and high-voltage applications.

Its 8-digit LCD display with optional backlighting can display various time ranges.



Battery powered	Timer	PNP/NPN Pulse counter/ Totaliser	DC 4 ... 30 V	AC 10 ... 260 V	Temperature range - 10° + 60°	High protection level IP65	DIN front bezel DIN 48 x 24	8 LCDs	Lockable reset

Powerful

- High quality LCD display with 8 mm high figures - optional display backlighting
- Time range up to 9999999.9 seconds or 9999h99m99s programmable via control input
- Battery lifetime 8 years
- High voltage versions for 10 ... 260 V AC/DC voltage pulses, thus to be connected directly via contactors, relays and motors
- Very high accuracy: 100 ppm

Simple

- Screw terminals, RM 5 mm
- Reset key lockable via the input 'Reset Enable'
- According to version for PNP, NPN switching level or high voltage version for 10 ... 260 V AC/DC switching voltage
- Accumulated time is always readable thanks to battery powering
- High protection level IP65

Order code

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b Count input

Mode	INP A:		INP B	
0 = Timer ¹⁾	–	–	0 ... 0.7 V DC	NPN
1 = Timer ¹⁾	–	–	4 ... 30 V DC	PNP
3 = Timer ¹⁾	10 ... 260 V AC/DC	AC/DC	10 ... 260 V AC/DC	AC/DC

Delivery specification

- Timer
- Mounting clip
- Front bezel for screw mounting (T008181)
56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Front bezel for clip mounting (T008180)
53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Gasket
- Instruction manual, multilingual

1) Stock types

Hour meters / timers, electronic

LCD hour meters Max. time range 9999 h 59 min 59 sec or 9999999.9 sec (battery) Codix 135

Accessories	Dimensions in mm [inch]	Order-No.
Adapter front bezel, 72 x 36 [2.83 x 1.42]	For cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set black and silver anodised	162704 Set
Adapter front bezel, 48 x 48 [1.89 x 1.89]	For cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94] black	T008883
Adapter front bezel, 60 x 50 [2.36 x 1.97]	For cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94] black	N003001
Transparent cover, lockable, IP65	For cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	N003002
Sealing cover type K1, IP65	Suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	G008301
Mounting frame with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94] chromated	G300004

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.

Technical data

General technical data		
Display	LCD, 8-digits, 8 mm [0.31"]high	
Backlighting	external electrical source 24 V DC $\pm 20\%$, 50 mA	
Counting direction	adding	
Display range	see next page	
Reset	manual and electrical	
Working temperature	-10°C ... +55°C [+14°F ... +131°F] (non-condensing)	
Operating temperature	-10°C ... +60°C [+14°F ... +140°F] (non-condensing)	
Storage temperature	-20°C ... +70°C [-4°F ... +158°F]	
Altitude	up to 2000 m	

Electrical characteristics		
Power supply	internal lithium battery approx. 8 years at 20°C [68°F]	
EMC	Emitted interference	EN 55011 class B
	Immunity to interference	EN 61000-6-2
Device safety	Designed to	EN 61010 part 1
	Protection class	2
	Application area	Pollution level 2
UL approval	File-No.: E128604	

Mechanical characteristics	
Housing	dark grey RAL 7021
Protection	IP65 (front side)
Weight	approx. 50 g [1.76 oz]

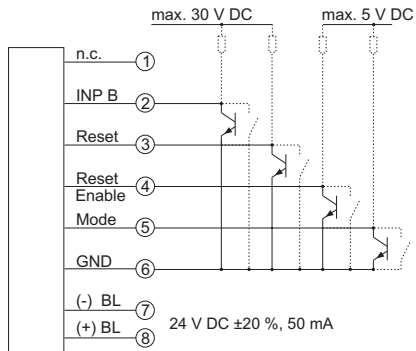
Count input		
A. Timer inputs DC versions (max. 30 V DC) INP B		
Timer input	NPN or PNP	depending on the type (see table)
Switching level	NPN	LOW: 0 ... 0.7 V DC HIGH: 3 ... 30 V DC
	PNP	LOW: 0 ... 0.7 V DC HIGH: 4 ... 30 V DC
Counting start	NPN	for LOW signal at the timer input
	PNP	for HIGH signal at the timer input
B. Timer inputs high voltage versions (10 ... 260 V DC/V AC) INP A		
Timer input	optocoupler input	
Min. pulse time	16 ms	
Switching level	LOW: 0 ... 2 V DC/V AC HIGH: 10 ... 260 V DC/V AC	
Counting start	for HIGH signal at the timer input	
C. Time range change (Mode)		
Contact input	NPN	open collector (switching at 0 V) LOW 0 ... 0.7 V DC HIGH 3 ... 5 V DC
Time range	depending on the circuit (s. order inform.)	
D. Reset input for DC and high voltage		
Min. pulse time	DC	50 ms
	High voltage	16 ms
Contact input DC	NPN	LOW 0 ... 0.7 V DC HIGH 3 ... 30 V DC
High voltage input	10 ... 260 V AC/DC	
E. Reset locking input (for DC and AC)		
Electrical reset key locking		
Input not active	reset key locked	
Contact input	open collector NPN (switching at 0 V)	
Switching level	NPN	LOW 0 ... 0.7 V DC HIGH 3 ... 5 V DC

Hour meters / timers, electronic

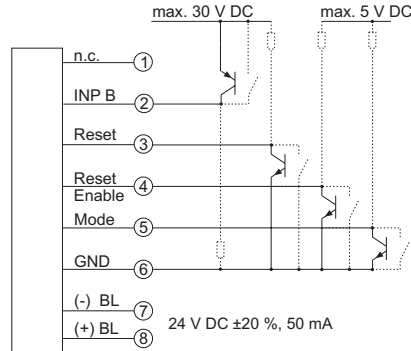
LCD hour meters **Max. time range 9999 h 59 min 59 sec or 9999999.9 sec (battery)** **Codix 135**

Terminal assignment

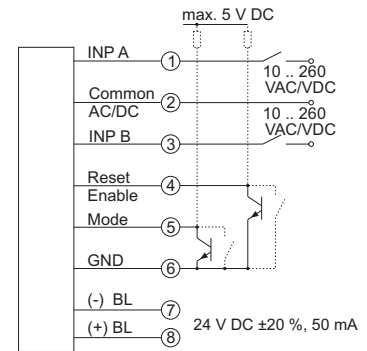
DC type: 6.135.012.8x0



DC type: 6.135.012.8x1

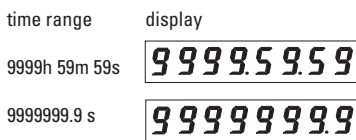


AC type: 6.135.012.8x3



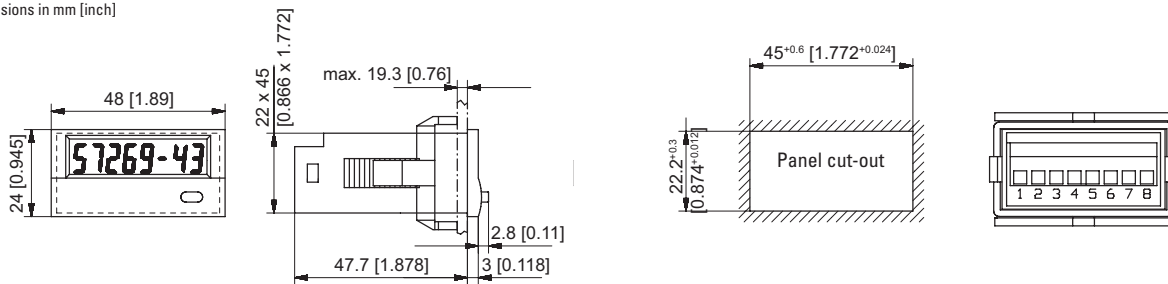
BL = backlighting

Display and time ranges

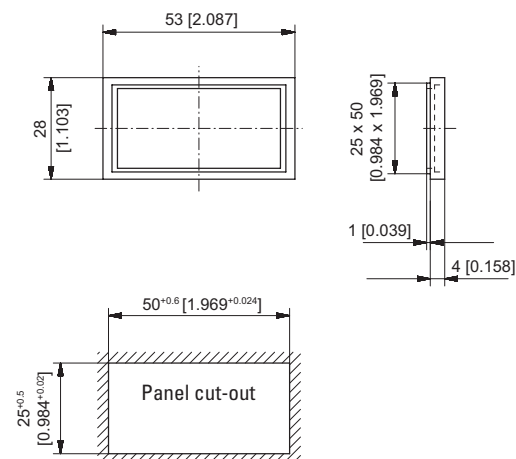


Dimensions

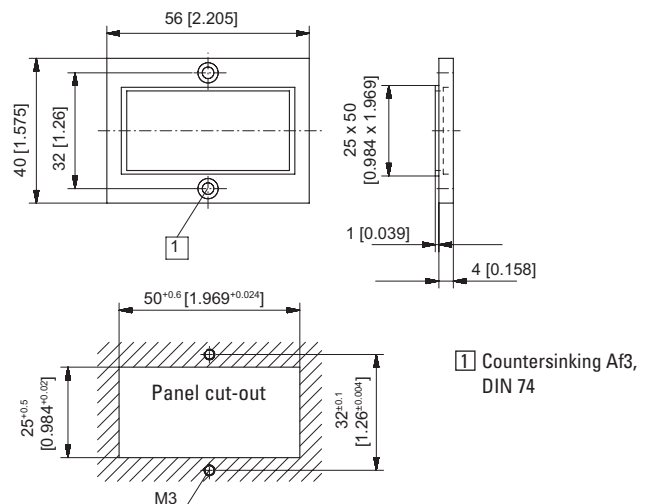
Dimensions in mm [inch]



Front bezel for clip mounting (included in delivery)



Front bezel for screw mounting (included in delivery)



Hour meters / timers, electronic

LCD hour meters

Adding counter / service timer, 99999.99 h (DC)

Codix 141 / 143



The Codix 141 / 143 is a simple externally powered hour meter with 7-digit LCD display for PNP, NPN input signals, optionally factory-programmable.

Codix 141: Standard timer

Codix 143: Service timer



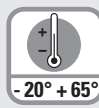
Power supply



Pulse counter/
Totaliser



Timer



Temperature
range



High protection
level



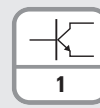
DIN front bezel



LCD display



Lockable
reset



Transistor
output (143)

Functional

- Direct display of the total time
- Pressing the key displays the preset service value and its pre-signal
- Preset value output as a text on the display and on the transistor output
- Pre-signal for the service intervals as a text on the display
- Manual or electrical reset of the display or of the service intervals
- Fast PNP or damped NPN control via separate inputs

User-friendly

- Power supply 10 ... 30 V DC
- Values stored in EEPROM
- Fixed pre-programmed service intervals, e.g.: service at 5000.00 h (service), pre-signal at 4900.00 h (pre-service), blinking text message on the display (service or pre-service)
- Multifunction reset key, lockable via a separate input
- Can also be reset to its delivery condition
- Factory programmable

Order code
Standard timer

6.141 . 012 . 300

Stock types:
6.141.012.300

Order code
Service timer

6.143 . 011 . 300 . XXXX . XX
a b

Stock types:
6.143.011.300.005K.00

a Option 2¹⁾
005K = Service range 5000.00 h

b Option 1¹⁾
00 = Pre-warning at 100.00 before the preset service value
Display shows text PrESerV with pre-warning and text SErViCE with preset service value

Delivery specification Codix 141 and 143

- Counter
- Mounting clip
- Gasket
- Instruction manual, multilingual

1) Options 1 and 2 can be individually programmed at the factory according to customer's requirements. Please note: The min. order quantity for custom versions is 10 pcs. with an extra charge, or 200+ pcs. with no extra charge.

Hour meters / timers, electronic

LCD hour meters	Adding counter / service timer, 99999.99 h (DC)		Codix 141 / 143
Accessories	Dimensions in mm [inch]		Order-No.
Adapter front bezel, 53 x 28 [2.09 x 1.10]	For cut-out 50 x 25 [1.97 x 0.98] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94]	anthracite	T008180
Adapter front bezel, 56 x 40 [2.20 x 1.57]	For cut-out 50 x 25 [1.97 x 0.98] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting for counters 48 x 24 [1.89 x 0.94]	anthracite	T008181
Adapter front bezel, 72 x 36 [2.83 x 1.42]	For cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set	black and silver anodised	162704 Set
Adapter front bezel, 48 x 48 [1.89 x 1.89]	For cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94]	black	T008883
Adapter front bezel, 60 x 50 [2.36 x 1.97]	For cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94]	black	N003001
Transparent cover, lockable, IP65	For cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]		N003002
Sealing cover type K1, IP65	Suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]		G008301
Mounting frame with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94]	chromated	G300004

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Technical data	
General technical data	
Display	LCD, 7 digits, 8 mm [0.32"] high
Undervoltage	display for $U_B < 8$ V: PO-FAIL and data backup
Counting range	0 ... 99999.99 h decimal point 0.00
Data backup	EEPROM
Operating temperature	-20°C ... +65°C [-4°F ... +149°F] (non-condensing)
Storage temperature	-25°C ... +75°C [-13°F ... +167°F]
Mechanical characteristics	
Housing	front panel mount DIN 43700, 48 x 24 mm [1.89 x 0.94"] dark grey Ral 7021
Connections	8-pole screw terminals, pitch 5.08 mm [2.00"]
Cleaning	the front side should be cleaned using only a soft cloth moistened with water
Weight	40 g [1.41 oz]
Protection	IP65 (front side) IP20 (rear side)
Connections	8-pole screw terminals, pitch 5.08 mm [2.00"]
Vibration resistance	acc. to EN 60068-2-6 10 - 55 Hz / 1 mm / 30 min
Shock resistance	acc. to EN 60068-2-27 100G acc. to EN 60068-2-29 10G
Electrical characteristics	
Power supply	10 ... 30 V DC, max. 25 mA
Start delay	500 ms
EMC	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2
Inputs	
Input A	static PNP input
Input B	static NPN input
Reset key enable input	static NPN input
Reset	edge-triggered NPN input (min. 20 ms)
Input resistance	10 kOhm
Switching level	LOW 0 ... 2 V DC HIGH 3.5 ... 30 V DC
Switching threshold	approx. 2.7 V DC
Additional data for Codix 143 (service timer)	
Output	NPN transistor output, open collector
Output voltage	max. 30 V DC
Output current	max. 50 mA

Hour meters / timers, electronic

LCD hour meters **Adding counter / service timer, 99999.99 h (DC)** **Codix 141 / 143**

Display and inquiry mode service timer

If the reset key is not released by means of the activation input of pin 6, pressing the key makes the following functions available to the user.

Press 1x: The text "SERVICE" is displayed

Press 2x: The following service value is displayed

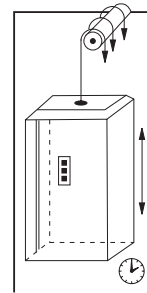
Press 3x: The text „PrESerV" is displayed

Press 4x: The following preservice value is displayed

Press 5x: The current value is displayed

For the service timers, the values counted remain stored, the service values are incremented by the stored preset value when resetting. E.g. service value 5000.00 h, counter count when resetting 5100.00 h, new service value 10100.00 h.

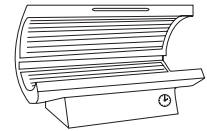
Applications



Operating time and service interval



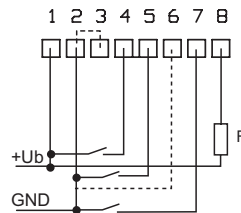
Total time and service interval



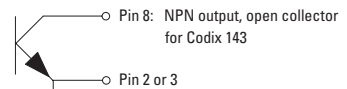
Service interval and total time of the UV lamps

Terminal assignment

PIN	Description	Standard timer	Service timer
Power supply			
1	+U _B	10 ... 30 V DC	10 ... 30 V DC
2	0 V DC, GND	GND	GND
Inputs			
3	0 V DC, GND	GND	GND
4	Fast counting input	INP PNP	INP PNP
5	Slow counting input	INP NPN	INP NPN
6	Reset enable input	RESET MANUAL ENABLE	RESET MANUAL ENABLE
7	Reset input	RESET	RESET
Output			
8	NPN output	n.c.	OUT

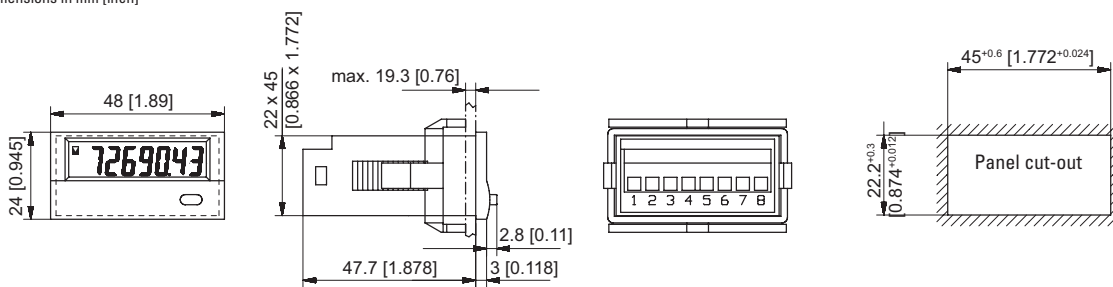


Output 8 is only used with Codix 143 as a NPN output



Dimensions

Dimensions in mm [inch]



Hour meters / timers, electronic

LED timers	h, min, sec or hh.mm.ss (DC)	Codix 523
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The Codix 523 is an externally powered timer, hour meter or short-time meter with 4 start input types and individually adjustable time base.

The 6-digit LED display shows the NPN, PNP input signals used for pulse width or time interval measurement.



Hour meters / Timers

DC 10 ... 30 V Power supply	 DIN 48 x 24 DIN front bezel	 -20° + 65° Temperature range	 IP65 High protection level	 Menu-driven programming	 Timer	 ≥ 1 ms Resolution
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Powerful

- High accuracy thanks to quartz time base
- Robust housing – IP65 protected
- Very bright LED display, 8 mm high
- Time base can be set individually
 - hours, minutes or seconds, the decimal point allows setting it even more accurately, up to max. 3 decimal places
 - smallest achievable resolution: milliseconds
 - time base hours (minutes and seconds as real-time display)
- Short start-up time – detects incoming pulses already 16 ms after having been switched on => no loss of pulses in case of a simultaneous motor start
- Individually adjustable Start/Stop function
2 Start/Stop inputs allow achieving 4 different measuring principles such as, for example, active or passive pulse width measurement, time interval measurement with one single input or with separate inputs.

User-friendly and universal

- Large keys – pressing either of the keys switches between displays (can also be operated wearing gloves)
- Programming
 - simple uniform menu-driven programming and operation
 - possibility to enter the programming mode also during operation with an authentication query
- Manual or electrical reset
Tamper-proof thanks to lockable reset function
- Freely programmable setpoint
Start time at which time counting begins
- As an alternative to the HTL inputs, devices with a 4 ... 30 V DC input level are available, for use as parallel displays for PLCs
- Optional output: 1 Hz clock pulse in case of active time measurement

Order code	6.523 . 01 X . 3 X 0
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a Output 1 = Optocoupler 2 = No output ¹⁾	b Input switch level 0 = Standard (HTL) ¹⁾ A = 4 ... 30 V DC	Delivery specification – Timer – Mounting clip – Gasket – Instruction manual, multilingual	– Front bezel for screw mounting (T008181) 56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"] – Front bezel for clip mounting (T008180) 53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
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1) Stock types

Hour meters / timers, electronic

LED timers	h, min, sec or hh.mm.ss (DC)	Codix 523
Accessories	Dimensions in mm [inch]	Order-No.
Adapter front bezel, 72 x 36 [2.83 x 1.42]	For cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set black and silver anodised	162704 Set
Adapter front bezel, 48 x 48 [1.89 x 1.89]	For cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94]	black T008883
Adapter front bezel, 60 x 50 [2.36 x 1.97]	For cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94]	black N003001
Transparent cover, lockable, IP65	For cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	N003002
Sealing cover type K1, IP65	Suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	G008301
Mounting frame with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	For snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94]	chromated G300004

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.

Technical data

General technical data	
Display	6 digits, red 7 segment LED display; 8 mm [0.32"] high
Data backup	EEPROM
Operating temperature	10 ... 26 V DC -20°C ... +65°C [-4°F ... +149°F] > 26 ... 30 V DC -20°C ... +55°C [-4°F ... +131°F] (non-condensing)
Storage temperature	-25°C ... +70°C [-13°F ... +158°F]

Electrical characteristics	
Power supply	10 ... 30 V DC, with integrated reverse polarity protection
Current consumption	max. 45 mA
EMC	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2

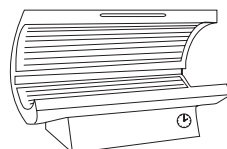
Mechanical characteristics	
Housing	front panel mount 48x24mm [1.89 x 0.94"] acc. to DIN 43700; RAL 7021, dark grey
Protection	IP65 (front side)
Weight	approx. 50 g [1.76 oz]

Inputs	
Polarity of inputs	programmable, NPN or PNP for all inputs
Input resistance	approx. 5 kΩ
Resolution	up to 0.001 s
Minimum pulse duration of the reset input	5 ms
Input switching level standard version (HTL)	LOW 0 ... 0.2 x U _B [V DC] HIGH 0.6 x U _B ... 30 V DC
Input switching level at 4 ... 30 V DC	LOW 0 ... 2 V DC HIGH 4 ... 30 V DC
Accuracy	<50 ppm

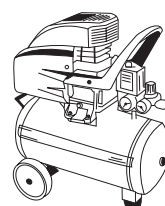
Outputs (optional)	
Output power optocoupler	max. 30 V, 10 mA

Applications for time and hour meters, short-time meters

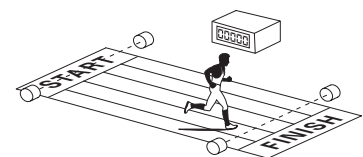
- Time measurements such as hours run recording on all machines and plant, e.g. compressors, solariums, special lights and lamps
- Accessories, OEM equipment or retrofitting to production machine
- Measurement of short times on processes and procedures, time recording (stopwatch function) at sporting events
- Hours run recording for motor vehicles and time monitoring for rally vehicles



Hours run of UV lamps



Operating hours

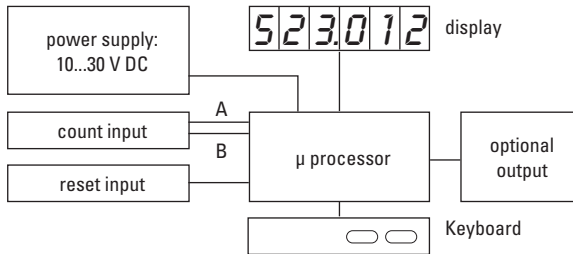


Short time measurement > 1 ms

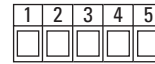
Hour meters / timers, electronic

LED timers	h, min, sec or hh.mm.ss (DC)	Codix 523
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Block diagram



Terminal assignment



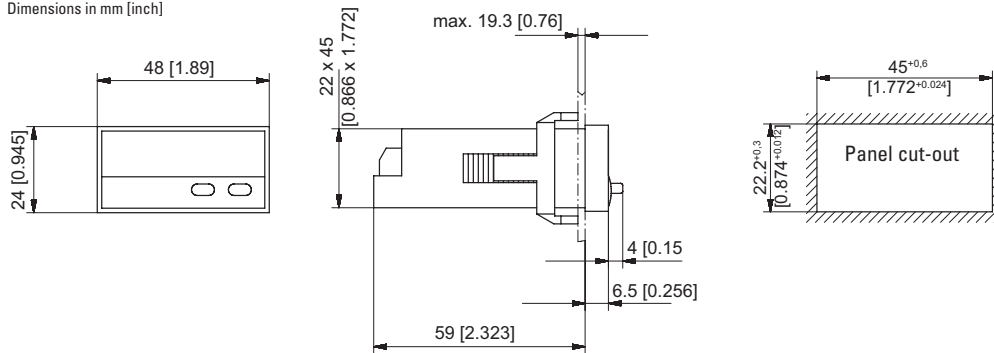
PIN	without optocoupler
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	reset



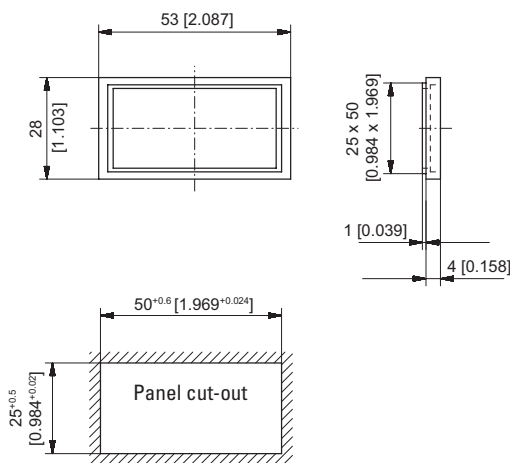
PIN	with optocoupler (NPN)
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	reset
6	emitter
7	collector

Dimensions

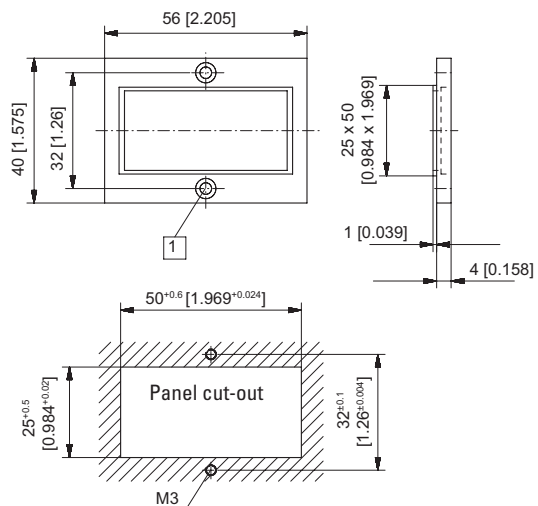
Dimensions in mm [inch]



Front bezel for clip mounting (included in delivery)



Front bezel for screw mounting (included in delivery)



1 Countersinking Af3, DIN 74

Hour meters / timers, electronic

LED timers

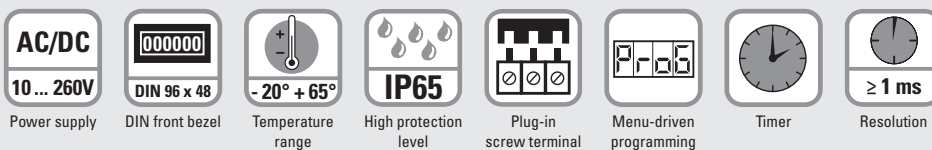
h, min, sec or hh.mm.ss (AC+DC)

Codix 543



The Codix 543 is an externally powered timer, hour meter or short-time meter with 4 start input types and individually adjustable time base.

The 6-digit LED display shows the NPN, PNP input signals used for pulse width or time interval measurement.



Powerful

- High accuracy thanks to quartz time base
- Robust housing – IP65 protection
- Very bright LED display 14 mm high
- Time base can be set individually
 - hours, minutes or seconds, the decimal point allows setting it even more accurately, up to max. 3 decimal places
 - smallest achievable resolution: milliseconds
 - time base hours (minutes and seconds as real-time display)
- Short start-up time – detects incoming pulses already 16 ms after having been switched on => no loss of pulses in case of a simultaneous motor start
- Individually adjustable Start/Stop function
 - 2 Start/Stop inputs allow achieving 4 different measuring principles such as, for example, active or passive pulse width measurement, time interval measurement with one single input or with separate inputs.

User-friendly and universal

- Large keys – pressing either of the keys switches between displays (can also be operated wearing gloves)
- Programming
 - Simple and unified programming and operation thanks to menu-driven programming
 - possibility to enter the programming mode also during operation with an authentication query
- Manual or electrical reset
 - Tamper-proof thanks to lockable reset function
- Freely programmable setpoint
 - Start time at which time counting begins
- AC or DC power supply with sensor power supply
- As an alternative to the HTL inputs, devices with a 5 V DC input level are available, for use as parallel displays for PLCs
- Optional output: 1 Hz clock pulse in case of active time measurement

Order code

6.543 . 01 X . X X 0

a Output
1 = Optocoupler
2 = No output ¹⁾

c Input switch level
0 = Standard (HTL) ¹⁾
A = 4 ... 30 V DC

Delivery specification
– Digital display
– Mounting clip
– Gasket
– 2 screw terminals
– Instruction manual, multilingual

Replacement parts
7 pin screw terminal RM 3.81 1 ... 7: N100387
2 pin screw terminal RM 5.08 1 ... 2: N100133

b Power supply
0 = 90 ... 260 V AC ¹⁾
3 = 10 ... 30 V DC ¹⁾

Accessories

Dimensions in mm [inch]

Order-No.

Mounting frame
with cut-out 92 x 45 [3.62 x 1.77]

For snap-on mounting on 35 [1.38] top-hat DIN rail,
for counters 96 x 48 [3.74 x 1.89]

grey

G300005

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.

¹⁾ Stock types

Hour meters / timers, electronic

LED timers	h, min, sec or hh.mm.ss (AC+DC)	Codix 543
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General technical data	
Display	6 digit, red 7 segment LED display; 14 mm [0.55"] high
Data backup	EEPROM
Operating temperature	-20°C ... +60°C [-4°F ... +140°F] (non-condensing)
Storage temperature	-20°C ... +70°C [-4°F ... +158°F]
Altitude	up to 2000 m [6562']

Electrical characteristics	
Power supply	10 ... 30 V DC, with reverse polarity protection 90 ... 260 V AC
Current consumption	max. 50 mA, 6 VA
EMC	Emitted interference EN 55011 class B Immunity to interference EN 61000-6-2
Device safety	Designed to EN 61010 part 1 Protection class 2 Application area Pollution level 2

Mechanical characteristics	
Housing	front panel mount 96 x 48 mm [3.74 x 1.89"] acc. to DIN 43700; RAL 7021, dark grey
Protection	IP65 (front side)
Weight	approx. 150 g [5.29 oz]

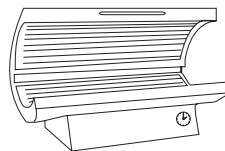
Inputs	
Polarity of inputs	programmable, NPN or PNP for all inputs
Input resistance	approx. 5 kΩ
Resolution	up to 0.001 s
Minimum pulse duration of the reset input	5 ms
Input switching level standard version (HTL)	
DC power supply	LOW 0 ... 0.2 x U _B [V DC]
	HIGH 0.6 x U _B ... 30 V DC
AC power supply	LOW 0 ... 4 V DC
	HIGH 12 ... 30 V DC
Input switching level at 4 ... 30 V DC	
LOW	0 ... 2 V DC
HIGH	4 ... 30 V DC
Accuracy	< 50 ppm

Outputs	
Sensors power supply (AC version)	24 V DC ± 15 %/100 mA
Output power optocoupler	max. 30 V DC, 10 mA

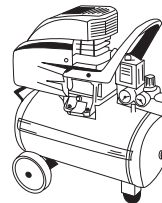
Hour meters / Timers

Applications for time and hour meters, short-time meters

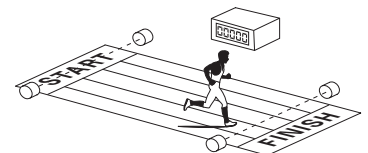
- Time measurements such as hours run recording on all machines and plant, e.g. compressors, solariums, special lights and lamps
- Accessories, OEM equipment or retrofitting to production machine
- Measurement of short times on processes and procedures, time recording (stopwatch function) at sporting events
- Hours run recording for motor vehicles and time monitoring for rally vehicles



Hours run of UV lamps

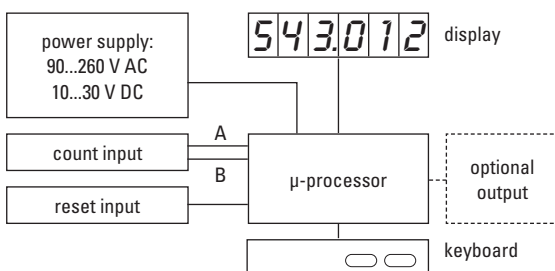


Operating hours



Short time measurement > 1 ms

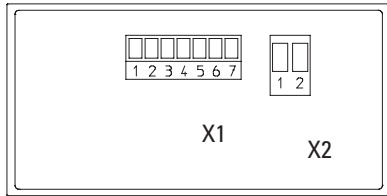
Block diagram



Hour meters / timers, electronic

LED timers	h, min, sec or hh.mm.ss (AC+DC)	Codix 543
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Terminal assignment



Connection X1

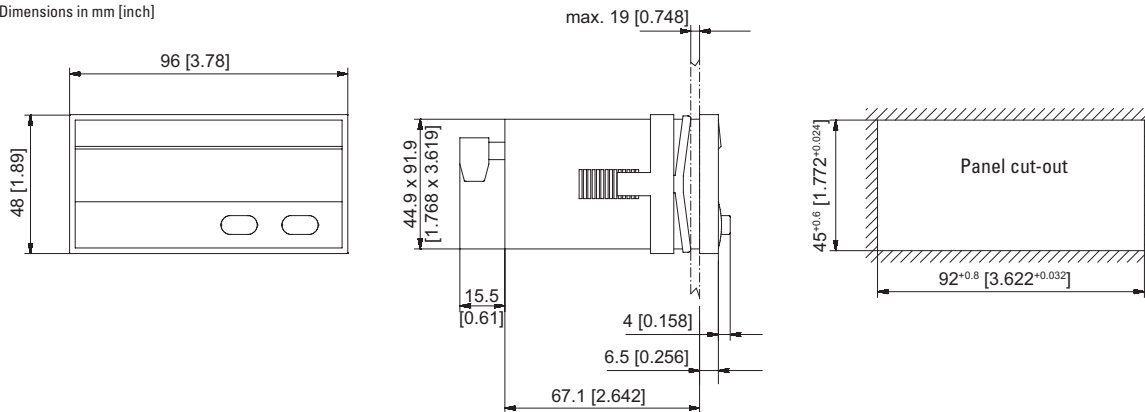
PIN	AC version	DC version
1	Optocoupler output	emitter
2	Optocoupler output	collector
3	Reset	
4	INP B	
5	INP A	
6	GND out	n.c.
7	+24 V out	n.c.

Connection X2

PIN	AC version	DC version
1	90 ... 260 V AC	0V DC (GND)
2	90 ... 260 V AC	10...30 V DC

Dimensions

Dimensions in mm [inch]



Hour meters / timers, electronic

LCD time modules	Max. time range 9999.99 h (DC)	194
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The timer module of the type 194 for PCB mount features a 6-digit LCD display and 2 voltage ranges (4.75...15 V DC and 9...60 V DC).

It is extremely robust and suitable for many different applications thanks to its wide temperature range.



Timer	4.75...60 V	PNP	High shock resistance	-40° + 80°	PCB mount	6 LCDs	Electrical reset

Powerful

- Display range up to 9999-99 hours
- 6-digit LCD display, 6 mm high
- Low power consumption
- Wide voltage and temperature range
- Very high shock and vibration resistance

Simple

- Non-volatile memory (no battery)
- Counting starts as soon as power supply is applied
- Electrical reset
- Very high reliability
- Small size and low cost

Order specifications

<i>Power supply</i>	<i>Order-No.</i>	<i>Art.-No.</i>	<i>Delivery specification</i>
4.75 ... 15 V DC	6.194.012.F00	162 137	- LCD hour meter module type 194
9 ... 60 V DC	6.194.012.G00	162 138	- Operating instructions

General technical data	
Display	6 digits, LCD display, figure height 6 mm [0.24"]
Display range	9999-99 h
Data backup	CMOS EEPROM non-volatile memory up to 10 years
Operating temperature	-40°C ... +85°C [-40°F ... +185°F] (non-condensing)
Working temperature	-20°C ... +80°C [-4°F ... +176°F] (non-condensing)
Storage temperature	-50°C ... +90°C [-58°F ... +194°F]

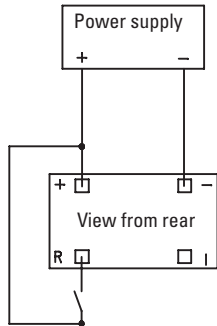
Mechanical characteristics		
Housing	colour	black
Weight	approx. 8 g [0.28 oz]	
Shock resistance acc. to DIN-IEC 68-2-27	550 m/s ² , 11 ms	
Vibration resistance acc. to DIN-IEC 68-2-6	50 ... 200 m/s ² , 10 ... 80 Hz	

Electrical characteristics		
Power supply	...F00	4.75 ... 15 V DC, with reverse polarity protection
	...G00	9 ... 60 V DC
Current consumption	...F00	8 mA at 4.75 ... 15 V DC
	...G00	6 mA at 9 ... 60 V DC
EMC	Emitted interference	EN 61000-6-3 EN 55011 class B
	Immunity to interference	EN 61000-6-2

The module must be protected against inductive voltage spikes and high energy noise interference.

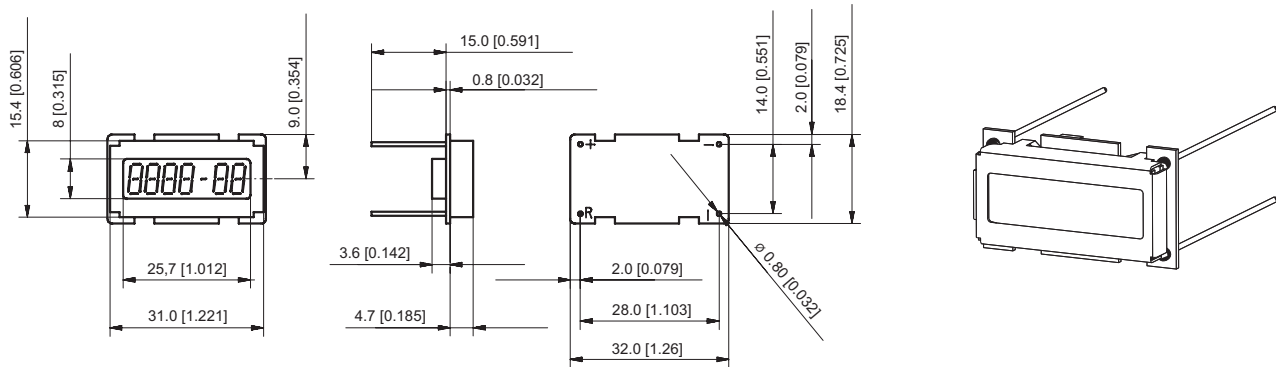
Inputs		
Reset input	HIGH	4 ... 60 V DC
	LOW	0 ... 0.7 V DC
	pulse length	min. 1 ms, edge triggered (rising)
Measuring error	a max. error of 36 sec. occur per Start/Stop cycle	
Accuracy (Quarz)	max. 200 ppm 25°C [+77°F]	

Terminal assignment



Dimensions

Dimensions in mm [inch]



Hour meters / timers, electronic

LCD time modules	Max. time range 99999.9 h (DC)	198
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The timer module of the type 198 with 6-digit LCD display for PCB mounting features a wide voltage range from 4.5 to 28 V DC.

It is extremely robust and suitable for many different applications thanks to its wide temperature range.



Timer	DC 4,5... 28 V	PNP	High shock resistance	Temperature range - 40° + 85°	PCB mount	LCD display 6 LCDs	Electrical reset

Powerful

- Display range up to 99999.9 hours
- 6-digit LCD display, 5 mm high
- Low power consumption
- Wide voltage and temperature range
- Very high shock and vibration resistance

Simple

- Non-volatile memory (no battery)
- Start/Stop input
- Electrical reset
- Very high reliability
- Small size and low cost

Order specifications

Power supply
4.5 ... 28 V DC

Order-No.
6.198.012.300¹⁾

Delivery specification
- LCD counter module type 198
- Operating instructions

General technical data	
Display	6 digits, LCD display, figure height 5 mm [0.20"]
Display range	99999.9 h
Data backup	CMOS EEPROM non-volatile memory up to 10 years (without battery)
Operating temperature	-40°C ... +80°C [-40°F ... +185°F] (non-condensing)
Humidity	95 % RH +32°C [+90°F] for max. 2 hours

Electrical characteristics	
Power supply	4.5 ... 28 V DC
Current consumption	3 mA max. at 4.5 V DC 10 mA at 28 V DC
EMC	Emitted interference EN 61000-6-3 EN 55011 class B Immunity to interference EN 61000-6-2

The module must be protected against inductive voltage spikes and high energy noise interference.

Mechanical characteristics		
Housing	Dimensions	18.4 x 32.4 mm [0.72 x 1.28"]
	Colour	black
Weight		approx. 8 g [0.28 oz]
Vibration resistance	acc. to DIN-IEC 68-2-6	10 ... 80 m/s ² , 10 ... 75 Hz

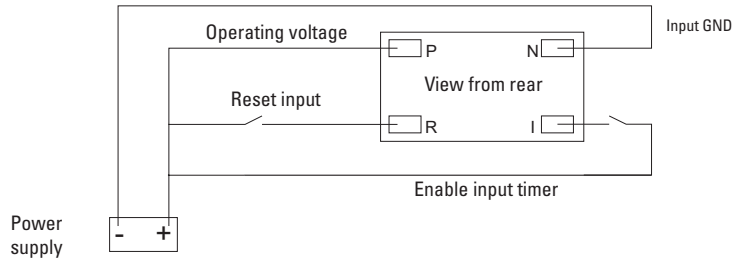
Inputs	
Start/Stop input (Enable input timer)	4.5 ... 28 V DC On-times smaller than 16 sec will not be counted
Reset input	4.5 ... 28 V DC pulse length min. 500 ms

1) Stock types

Hour meters / timers, electronic

LCD time modules	Max. time range 99999.9 h (DC)	198
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Terminal assignment



Dimensions

Dimensions in mm [inch]

