

Hour meters / timers, electromechanical

Dual function counters

Pulse + time / 2 x time (AC+DC)

HC 77



The counter combinations HC 77 and HC 77.55 comprise an hour meter and a totalizer. They can be controlled both simultaneously and separately.

These panel mount counters have a reduced mounting depth. They can be used in many different fields of application.

Optionally with 2 hour meters on request.

Characteristics

- Hour meter and totalizer in one single device.
- Without reset.
- High shock resistance.
- Magnified large figures.
- Protection IP52 front side (optional IP65).
- Data retention in case of power failure.
- UL-approved.

Benefits

- Long service life.
- Optional: counters controlled separately.

Applications

General time measurement, maintenance intervals for measuring instruments (respiration units, oxygen, dialysis), small appliances, UV lamps, display panels in vehicles, lifts, heating burners.

Type series

Description	Type	Options
Dual function counter 48 x 48 mm [1.89 x 1.89"]	HC 77	<ul style="list-style-type: none"> - Color of housing grey Art. no. 3.55X.40X.XXX - Flat pin 0.8 x 6.3 mm [0.031 x 0.25"] Art.-No.: 3.55X.40X.XXX.011
With adapter front bezel 55 x 55 mm [2.17 x 2.17"]	HC 77.55	<ul style="list-style-type: none"> - Separate connections for running time meter and adding counter. This model is available for AC or DC (not mixed) - Adding counter max. 10 Hz - Electrical connection: 2 x cable 2 x 0.5 mm² [AWG20], NYFAZ, 0.5 m [1.64"] (hour meter cable red/black, adding counter grey cable) Art. no. 3.55X.40X.XXX.060 - Sealed window (IP65 front side) with: <ul style="list-style-type: none"> - Screw terminal Art. no. 3.55X.40X.XXX.419 - Flat pin 0.8 x 6.3 mm [0.031 x 0.25"] Art. no. 3.55X.40X.XXX.062 - Separated connections (cable) Art. no. 3.55X.40X.XXX.061 - Counter combination with 2 hour meters 10 ... 30 V DC <ul style="list-style-type: none"> - 2 x cable 2 x 0.5 mm² [AWG20] Art. no. 3.554.401.351.060 - Spring-type terminal on request
Order information:		
Art. no. (for special voltages etc. indicate exact model, voltage and frequency e.g. HC 77, 120 V AC, 60 Hz)		

Accessories	Dimensions in mm [inch]	Order no.
Adapter front bezel, 55 x 55 [2.17 x 2.17"]	for cut-out 50 x 50 [1.97 x 1.97] to cut-out ø 50.5 [1.99], with clip mounting for counters 48 x 48 [1.89 x 1.89]	black T008171
Adapter front bezel, 60 x 75 [2.36 x 2.95"]	for cut-out 50 x 50 [1.97 x 1.97] to cut-out 45 x 45 [1.7 x 1.77], with screw mounting for counters 48 x 48 [1.89 x 1.89]	black T008860
Adapter front bezel, 72 x 72 [2.83 x 2.83"]	for cut-out 68 x 68 [2.68 x 2.68] to cut-out 45 x 45 [1.7 x 1.77], (Mating clip T009420 must be ordered separately)	black T008177
Adapter front bezel, ø 72 [2.83"]	for cut-out ø 60 [2.36] to 45 x 45 [1.77 x 1.77], with clip mounting for counters 48 x 48 [1.89 x 1.89]	black N510226

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.

Hour meters / timers, electromechanical

Dual function counters	Pulse + time / 2 x time (AC+DC)	HC 77
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Technical data

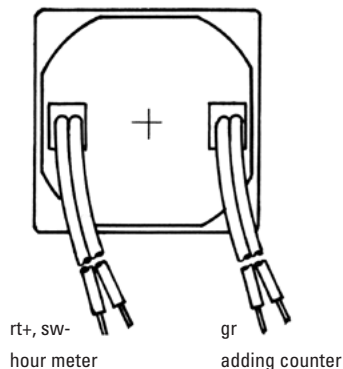
General technical data	
Operating indicator of the running time meter	AC fast rotating wheel with red dashes: 99999.99 h
	DC 1/100 h display turns continuously by 1 digit in 36 s: 999999.99 h
Height of figures	4 x 1.7 mm [0.16 x 0.067"] optical
Color of figures	hour meter hour: white on black decimal: red on black
	pulse counter white on black
Operating temperature	-15°C ... +50°C [+5°F ... +122°F] (non-condensing)
Mounting position	any

Mechanical characteristics	
Protection	IP52 (front side) when built in
Color of housing	black (standard)
Weight	HC 77 65 g [2.29 oz]
	plug in frame 55 8 g [0.28 oz]
	plug in frame 72 13 g [0.46 oz]

Electrical characteristics	
Electrical connection	screw terminal (tightening torque max. 0.8 Nm)
Power consumption	10 ... 30 V DC approx. 1 W
	36 ... 80 V DC approx. 1.65 W
	100 ... 130 V DC approx. 1.75 W
	20 ... 30 V AC, 50 Hz approx. 0.53 VA
	42 ... 48 V AC, 50 Hz approx. 0.53 VA
	100 ... 130 V AC, 50 Hz approx. 1.43 VA
187 ... 264 V AC, 50 Hz approx. 3.0 VA	
Rated voltages	AC (50 or 60 Hz) 20 ... 30/42 ... 48/100 ... 130/187 ... 264 V
	DC 10 ... 30/36 ... 80/100 ... 130 V
On time	100 %
Count mode	adding
Accuracy	AC supply frequency + 30 ms
	DC < 0.003 % (at 24 h)
Reset	no reset
EMC standards	EN 55011 class B
	EN 61000-6-2, EN 61000-6-3
Device safety	designed to protection class 2
	application area pollution level 2
UL approval	file E128604

Terminal assignment

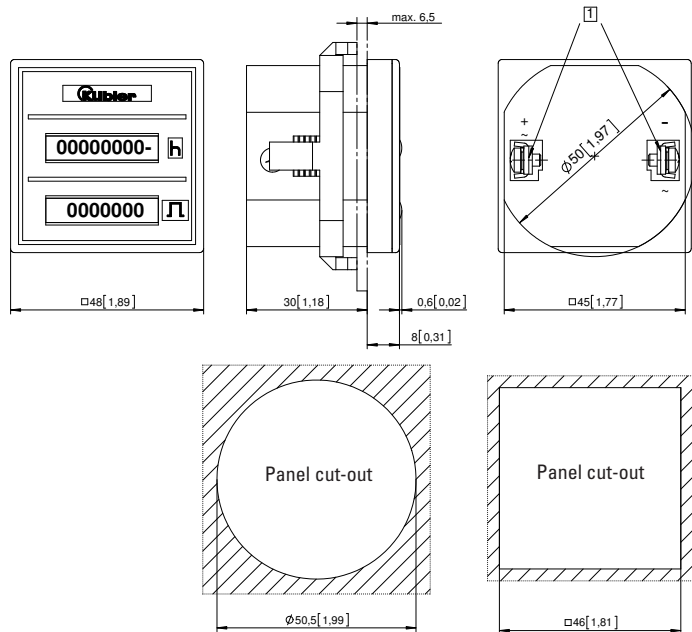
Counter with separate connections (rear view)



Hour meters / timers, electromechanical

Dual function counters **Pulse + time / 2 x time (AC+DC)** **HC 77**

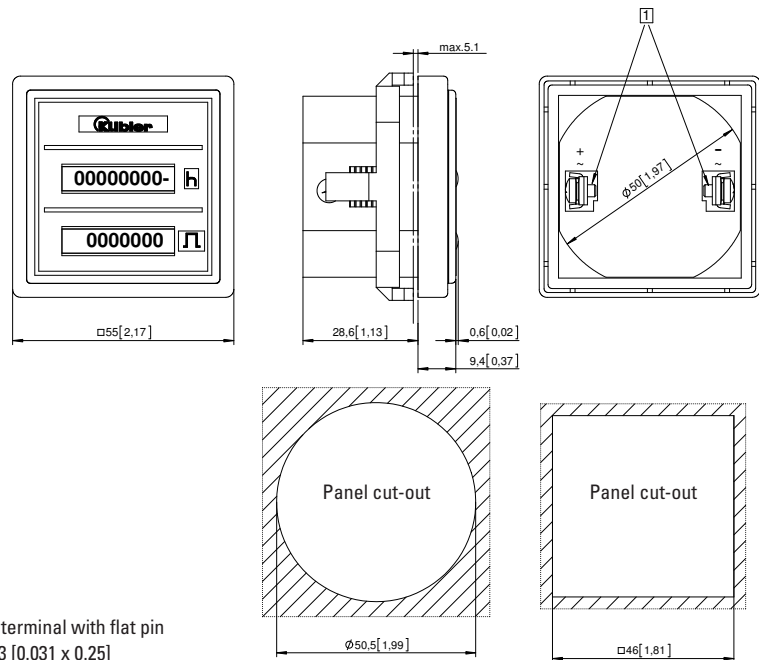
Dual function counter 48 x 48 [1.89 x 1.89"]
Type HC 77



1) Screw terminal with flat pin
0.8 x 6.3 [0.031 x 0.25]

Type	Display	Voltage	Art. no.					
			10 ... 30 V	20 ... 30 V	36 ... 80 V	42 ... 48 V	100 ... 130 V	187 ... 264 V
HC 77	7/8 digits	AC (50 Hz)		3.550.401.071		3.550.401.072	3.550.401.074 ¹⁾	3.550.401.075 ¹⁾
	7/8 digits	AC (60 Hz)		3.550.401.081		3.550.401.082	3.550.401.084	3.550.401.085
	7/8 digits	DC	3.550.401.351 ¹⁾		3.550.401.353		3.550.401.381	
Color of housing grey:			Art. no.		3.550.400.XXX			

Dual function counter 48 x 48 [1.89 x 1.89"]
with adapter front bezel 55 x 55 [2.17 x 2.17"]
Type HC 77.55



1) Screw terminal with flat pin
0.8 x 6.3 [0.031 x 0.25]

Type	Display	Voltage	Art. no.					
			10 ... 30 V	20 ... 30 V	36 ... 80 V	42 ... 48 V	100 ... 130 V	187 ... 264 V
HC 77.55	7-/8 digits	AC (50 Hz)		3.551.401.071		3.551.401.072	3.551.401.074	3.551.401.075
	7/8 digits	AC (60 Hz)		3.551.401.081		3.551.401.082	3.551.401.084	3.551.401.085
	7/8 digits	DC	3.551.401.351		on request		3.551.401.381	
Color of housing grey:			Art. no.		3.551.400.XXX			


MID approved

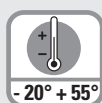

The HW 66 and HW 66 M combination meters consist of an hour meter and an energy meter.

These panel-mounted devices require only a limited installation depth and can be used in a wide variety of application areas. The count pulses can be read out via the SO output.

Additional model:
HW 66 M – MID version for applications requiring official calibration.


AC
 115/230V

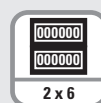
Power supply


 - 20° + 55°
 Temperature range

 DIN 48 x 48
 DIN front bezel

IP65
 High protection level


No reset


 2 x 6
 Display
 2 x 6 digit

 kWh
 Energy meter


Timer

Product features

- Metering of hours run and energy consumption in one compact device – panel mounting.
- Wide temperature range.
- Remote readout via SO outputs on request.
- Shows both values in parallel.
- Easy-to-read display – can also be read if no voltage present.

Benefits

- Tamper-proof fixed installation with high degree of protection.
- High measuring accuracy.
- Can be officially calibrated (MID).

Applications

Dehumidifiers, hire equipment and machinery, air-conditioning, production equipment, current generators.

Order specifications

Type	Voltage	Order no.	Delivery includes	Only for MID version:
HW 66	230 V AC	3.563.201.075 ¹⁾	• Counter	• Type plate
HW 66	115 V AC	3.563.201.074 ¹⁾	• Flat gasket	If the type plate on the side of the HW 66 M is no longer legible after the installation, the provided additional type plate can be affixed on the front panel of the device in order to comply if necessary with the legal requirements relating to calibration.
MID version: HW 66 M	230 V AC	3.56M.201.075 ¹⁾	• Mounting clip • Instruction manual	

Accessories	Dimensions in mm [inch]	Order no.
Adapter front bezel, 55 x 55 [2.17 x 2.17]	for cut-out 50 x 50 [1.97 x 1.97] to ø 50.5 [1.99], with clip mounting for counters 48 x 48 [1.89 x 1.89]	black T008171
Adapter front bezel, 60 x 75 [2.36 x 2.95]	for cut-out 50 x 50 [1.97 x 1.97] to cut-out 45 x 45 [1.77 x 1.77] with screw mounting for counters 48 x 48 [1.89 x 1.89]	black T008860
Adapter front bezel, 72 x 72 [2.83 x 2.83]	for cut-out 68 x 68 [2.68 x 2.68] to cut-out 45 x 45 [1.77 x 1.77] Mating clip T009420 must be ordered separately	black T008177
Adapter front bezel, ø 72 [2.83]	for cut-out ø 60 [2.36] to cut-out 45 x 45 [1.77 x 1.77] with clip mounting for counters 48 x 48 [1.89 x 1.89]	black N510226
Adapter front bezel, 55 x 55 [2.17 x 2.17]	for cut-out 50 x 50 [1.97 x 1.97] to cut-out 45 x 45 [1.77 x 1.77] with clip mounting for counters 48 x 48 [1.89 x 1.89] Gasket 58 x 58 [2.28 x 2.28], for cut-out 50.2 x 50.2 [1.98 x 1.98]	black T008853 N511004
Mounting frame with cut-out 50 x 50 [2.36 x 2.36] via separate adapter also for 45 x 45 [1.77 x 1.77]	for snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 48 x 48 [1.89 x 1.89], 53 x 53 [2.09 x 2.09] and 55 x 55 [2.17 x 2.17]	chromated G300003

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) Standard stock model

Energy meters

Dual function counters Energy and time (AC) HW 66 / HW 66 M

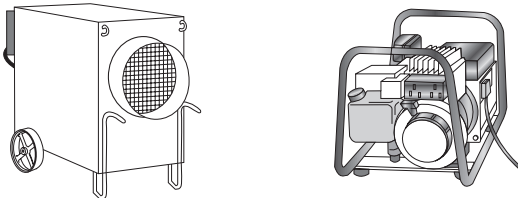
Technical data

General technical data	
Power supply	115/230 V AC, -20 % / +15 % 50 or 60 Hz
Digits	2 x 6 digit (decimale places red)
Height of figures (optical)	4 x 1.7 mm [0.16 x 0.067"]
Colour of figures	white and red on black
Operating temperature	HW 66 -20°C ... +55°C [-4°F ... +131°F] HW 66 M -10°C ... +55°C [+14°F ... +131°F] (non-condensing)
Storage temperature	-25°C ... +65°C [-13°F ... +149°F]
Housing	DIN panel-mount 48 x 48 mm [1.89 x 1.89"]
Depth	55 mm [2.17"]
EMC standards	EN 55011 classe B, EN 61000-6-2, EN 61000-6-3, EN 61326-3-2
Measuring instruments directive (MID)	EN 50470-1, EN 50470-3
Protection	IP65, EN 60529 (front side) IP20 (rear side)
Connections	screw terminal, touch-safe
Max. core cross-section	inputs/outputs 2.5 mm ² [AWG 13] S0 output 2.5 mm ² [AWG 13]
LED function	LED on when power supply is connected LED blinks when energy is being measured

Energy meter	
Display	99999.9 kWh
Accuracy	class B, acc. to MID (for 50 Hz version)
Current	I _B = 5 A, I _{max} = 16 A
Current limits	≥ 20 mA up to 16 A
Start current	≥ 20 mA
S0 output	1000 pulses/kWh, 5 ... 30 V DC, I _{max} = 20 mA
Pulse duration	50 ms

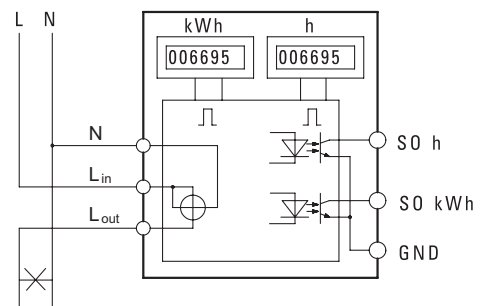
Hour meter	
Display	99999.9 h (0.1 h = 6 min)
Accuracy	± 2 %
S0 output	10 imp/h, 5 ... 30 V DC, I _{max} = 20 mA
Pulse duration	50 ms
Start (Operating time)	with voltage applied to L _{in}
This hour meter shall not be used for electricity consumption calculation.	

Applications



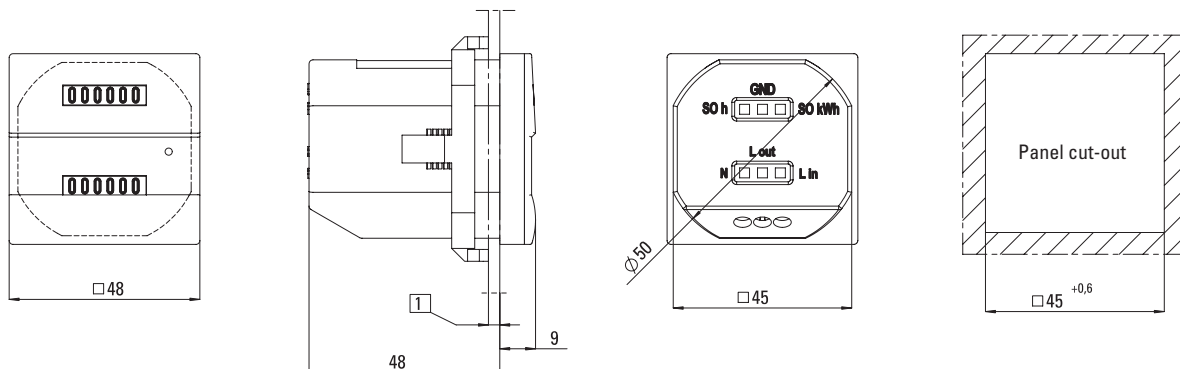
Retro- or standard fitting in dehumidifiers, current generators, air-conditioning, production equipment etc. for the accurate, traceable billing of operating and energy costs – especially also for hire equipment.

Terminal assignment



Dimensions

Dimensions in mm



1 max. 6.5

Hour meters / timers, electromechanical

Dual function counters	Pulse + time for DIN rail (AC+DC)	SHC 77
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The counter combinations SHC 77 comprise an hour meter and a totalizer. They can be controlled both simultaneously and separately.

These DIN rail mount counters have a reduced mounting depth. They can be used in many different fields of application.

Characteristics

- Hour meter and totalizer in one single device
optional: counters controlled separately.
- Without reset.
- High shock resistance.
- Magnified large figures.
- Protection IP52 (on the front side).
- Data retention in case of power failure.

- Long service life.
- UL-approved.

Applications

General counting, alarm systems, pay stations, electricity meters, vending and gaming machines, copying machines, medical equipment, car washes, lifts, heating burners.

Type series

Description	Type	Options
Dual function counter, common connections	SHC 77	SHC 77: The two meters are connected in parallel, this means, that the adding counter registers the total number of events and the time meter the total operating time of the device.
Dual function counter, separate connections	SHC 77.60	SHC 77.60: Hour meter and adding counter have two separate connections. This version is available for either AC or DC version (not mixed).
Order information: Art. no. (for special voltages etc. indicate exact counter types, voltage and frequency e.g. SHC 77, 120 V AC, 60 Hz)		

General technical data

Operating indicator of the hour meter	AC	fast rotating wheels with red dashes: 99999.99 h
	DC	1/100 h display turns continuously by 1 digit per 36 s: 999999.99 h
Height of figures	4 x 1.7 mm [0.16 x 0.067"] optical	
Color of figures	hour meter	hours: white figures on black
	1/10 u. 1/100 h adding counter	red figures on black white figures on black
Operating temperature	-15°C ... +50°C [+5°F ... +122°F] (non-condensing)	
Mounting position	any	

Mechanical characteristics

Protection	IP52 (front side) when built-in	
Color of housing	black (standard)	
Weight	SHC 77	85 g [3.00 oz]
	SHC 77.60	105 g [1.70 oz]

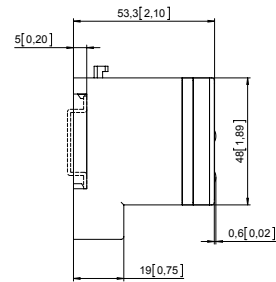
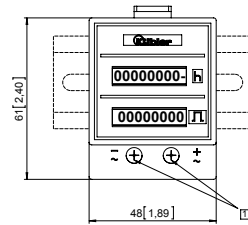
Electrical characteristics

Electrical connection	SHC 77	screw terminal (tightening torque max. 0.8 Nm)
	SHC 77.60	2 x cable – 2 x 0.5 mm ² [AWG20] NYFAZ, 0.5 m [1.64'] hour meter red/black adding counter grey
Power consumption	10 ... 30 V DC	approx. 1 W
	36 ... 80 V DC	approx. 1.65 W
	100 ... 130 V DC	approx. 1.75 W
	20 ... 30 V AC, 50 Hz	approx. 0.53 VA
	42 ... 48 V AC, 50 Hz	approx. 0.53 VA
	100 ... 130 V AC, 50 Hz 187 ... 264 V AC, 50 Hz	approx. 1.43 VA approx. 3.0 VA
Rated voltages	AC (50 or 60 Hz)	20 ... 30/42 ... 48/100 ... 130/187 ... 264 V DC
		10 ... 30/36 ... 80/100 ... 130 V
On time	100 %	
Count mode	adding	
Accuracy	AC	supply frequency + 30 ms
	DC	< 0.003 % (at 24 h)
Reset	no reset	
Test voltage	2500 V AC, 50 Hz	
EMC standards	EN 55011 class B EN 61000-6-2, EN 61000-6-3	
Device safety	designed to protection class	EN 61010 part 1
	application area	2 pollution level 2
UL approval	file E128604	

Hour meters / timers, electromechanical

Dual function counters **Pulse + time for DIN rail (AC+DC)** **SHC 77**

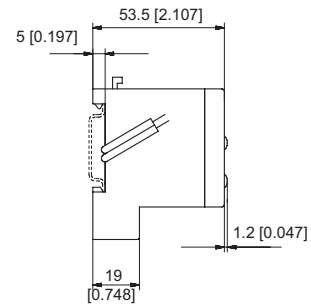
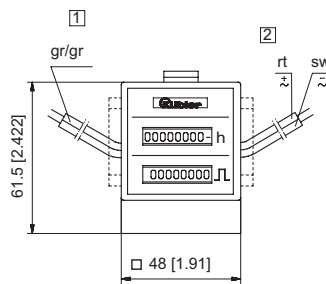
Dual function counter
with common connections
Type SHC 77



1 screw terminal

Type	Display	Voltage	Art. no.					
			10 ... 30 V	20 ... 30 V	36 ... 80 V	42 ... 48 V	100 ... 130 V	187 ... 264 V
SHC 77	7/8 digits	AC (50 Hz)		3.553.401.071		3.553.401.072	3.553.401.074	3.553.401.075
	7/8 digits	AC (60 Hz)		3.553.401.081		3.553.401.082	3.553.401.084	3.553.401.085
	7/8 digits	DC	3.553.401.351		3.553.401.353		3.553.401.381	

Dual function counter
with separate connections
Type SHC 77.60



1 adding counter 2 hour meter

Type	Display	Voltage	Art. no.					
			10 ... 30 V	20 ... 30 V	36 ... 80 V	42 ... 48 V	100 ... 130 V	187 ... 264 V
SHC 77.60	7/8 digits	AC (50 Hz)		3.553.401.071.060		3.553.401.072.060	3.553.401.074.060	3.553.401.075.060
	7/8 digits	AC (60 Hz)		3.553.401.081.060		3.553.401.082.060	3.553.401.084.060	3.553.401.085.060
	7/8 digits	DC	3.553.401.351.060		on request		3.553.401.381.060	