register operating and service times.

Hour counters for AC or DC in BAUSER design, type range 631...-638...

The world-wide known BAUSER hour counters can be fast and easily mounted. As the counters are available in all current front dimensions, you do not require additional bezels.

Front frame 52 x 52 mm, cutout Ø 50,2 + 0,3 mm or 2 45,2 + 0,3 mm

AC	DC	grey	black	terminal connection	plug connection		on against tal contact without
631	629					•	
632	630					•	
633	637						•
634	638						•
631.1	629.1					•	
632.1	630.1					•	
633.1	637.1						•
634.1	638.1				•		•

with or without protection against accidental contact



Front frame 48 x 48 mm, cutout \Box 45,2 + 0,3 mm

AC	DC	grey	black	terminal connection	plug connection		on against tal contact without
631.2	629.2					•	
632.2	630.2					•	
633.2	637.2						•
634.2	638.2						•
631.3	629.3					•	
632.3	630.3					•	
633.3	637.3						•
634.3	638.3						•

with or without protection against accidental contact





type 631, 631.1, 633, 633.1, 629, 629.1, 637, 637.1



type 632, 632.1, 634, 634.1, 630, 630.1, 638, 638.1



type 631.2, 631.3, 633.2, 633.3, 629.2, 629.3, 637.2, 637.3



type 632.2, 632.3, 634.2, 634.3, 630.2, 630.3, 638.2, 638.3



register operating and service times.

Hour counters with or without integrated protection against accidental contact according to VBG4, protection class IP 65 (front)



type 631.4, 631.5, 633.4, 633.5, 629.4, 629.5, 637.4, 637.5



type 632.4, 632.5, 634.4, 634.5, 630.4, 630.5, 638.4, 638.5



type 631 A.2, 629 A.2



type 632 A.2, 630 A.2 with additional terminal cover type A

You can obtain the BAUSER counters in the housing colours grey (RAL no. 7032) and black, on request even in light-grey (RAL no. 7035) and with your logo on it (minimum quantity required). Approved to UL/CSA, CE, VDE.

Front frame Ø 58 mm, cutout Ø 50,2 + 0,3 mm



with or without protection against accidental contact



Front frame 48 x 48 mm, surface or DIN rail 35 mm (DIN 46277)

AC	DC	grey	black	terminal connection	plug connection		on against tal contact without
631A.2	629A.2					•	
632A.2	630A.2					•	





register operating and service times.

Accessories and special types at additional cost

Beside the standard program BAUSER offers you a range of individual special developments. Inform us about your requirements and ideas – we find a solution for you.

variants for 50	and 60 Hz operation:
order code i e	631/963

bezel 55 x 55 mm: grey or black, fitting to the counter with front frame 48 x 48 mm

bezel 72 x 72 mm: grey or black, fitting to the counter with front frame 48 x 48 mm

blind cover 53 x 53 mm: suited for types with square cutout

terminal cover type A: fitting for type 631A.2, 632A.2, 629A.2, 630A.2 A later combination to get a DIN-rail counter is possible with types 633... or 634...or 637...or 638... and a mounting socket.

additional sealing: rubber seal for all versions with square or round cutout – please indicate type in your order

metal clamp: available for all types, but the mounting depth changes: ..+ 16 mm, order code, i.e.: 631.4/**879**

additional water-proof surface housing: available for all types with 48 x 48 front frame – (protection class IP 65, with cable) order code, i.e.: 633.3/765

illuminated display: at important quantities on request



type 632A.2, 630A.2 with additional terminal cover type A



counter 48 x 48 mm, with bezel 55 x 55 mm



counter 48 x 48 mm, with bezel 72 x 72 mm



register operating and service times.

Hour counters of type range 631... - 638... - High in capacity, low in price



 This retaining clip is included in the delivery at types for flush mounting (panel thickness up to 10 mm). Our developing and production know-how is excellent. This was certified according ISO9001. That is why we can guarantee to our world-wide OEM customers high quality products in the shortest time.

	AC	DC
reset:	no	no
counting range:	99999,99 h	99999,99 h
digits:	1,5 x 3,5 mm (with lens 4 mm), white on black, decimals black on white	1,5 x 3,5 mm (with lens 4 mm), white on black, decimals black on white
standard voltages:	115 or 230 V AC	10 - 80 VDC (1,5 - 15 mA)
special voltages: (at additional cost)	12, 24, 36 - 48 and 400 V AC	2 - 20 V DC (0,5 - 27 mA) 80 - 220 V DC (1,5 - 4,5 mA)
voltage tolerance:	± 10 %	-
frequency:	50 or 60 Hz (on request 50 and 60 Hz)	-
current consumption:	approx. 10 mA at rated voltage	see above
protection class:	DIN 40050, housing IP 65 (front)	DIN 40050, housing IP 65 (front)
	terminals: IP 20 (Variant VBG 4) IP 00 (without VBG 4)	terminals: IP 20 (Variant VBG 4) IP 00 (without VBG 4)
testing voltage:	winding and contact against GND 2500 V/50 Hz	-
ambient temperature:	- 20 °C to + 70 °C	- 20 °C to + 70 °C
fixing:	via included retaining clip*, panel thickness up to 10 mm, or via integrated snap-in lugs, panel thickness up to 2 mm, whereas the cutout should be 45,2+0,3 x 45,2+0.3	via included retaining clip*, panel thickness up to 10 mm, or via integrated snap-in lugs, panel thickness up to 2 mm, whereas the cutout should be 45,2*0.3 x 45,2*0.3 mm
connection:	terminals or plugs, with or without protection against accidental contact	terminals or plugs, short circuit and reverse battery protected
approval:	CE (UL, CSA and VDE at additional cost)	CE
operation indication:	yes	yes
weight:	approx. 46 g	approx. 46 g

register operating and service times.

New hour counters – now with large digits and DIN dimensions 48 x 24 mm type range 250...

These are 7 digit BAUSER hour counters with the smallest dimensions for AC and DC operation. They are even suited for heavy applications on utility vehicles. Even for this range a protection class of IP65 (front) is offered.

A BAUSER top program, where everything is correct. From the technical solution, through the design up to the usual good value for money.

Front frame 36 x 24 mm, protection class IP 65





Front frame DIN dimension 48 x 24 mm! Protection class IP 65

AC	DC	front black	front grey	plug connect. 6,3 x 0,8 "straight"	plug connect. "bent" 90°"	terminal connect. "bent" 90°"
252	262					
252.1	262.1				•	
252.2	262.2					•
253	263					
253.1	263.1				•	
253.2	263.2					•





type 250, 250.1, 250.2, 260, 260.1, 260.2



type 251, 251.1, 251.2, 261, 261.1, 261.2





type 253, 253.1, 253.2, 263, 263.1, 263.2



register operating and service times.

Hour counters with different front, connection and colour variants, with protection class IP65 (front), quartz controlled



264, 264.1, 264.2-266, 266.1, 266.2,

BAUSER offers – especially for your vehicle technology – hour counters with different housing variants. For power supply, you can choose between the classical plug- or terminal connection.

Front frame Ø 58 mm, with two cutouts: Ø 50,5 mm or Ø 52 mm, or type for front fixing.





AC	DC	front black	front grey	cutout Ø 50,5 mm	cutout Ø 52 mm	cutout 36,8 x 24,1 ± 0,5 mm	plug-con. 6,3 x 0,8 "straight"	plug-con. "bent" 90°"	terminal-con. "bent" 90°"
254	264						•		
254.1	264.1							•	
254.2	264.2								•
255	265						•		
255.1	265.1							•	
255.2	265.2								•
256	266						•		
256.1	266.1							•	
256.2	266.2								•
257	267						•		
257.1	267.1							•	
257.2	267.2								•
258	268						•		
258.1	268.1							•	
258.2	268.2								•

Accessories and special types at additional cost:

variant for 20- and 100 Hz operation: order code i.e.: 250/943

rubber seal: for additional sealing (please indicate for which type it is required)

spring wire bracket: optionally, if there is only little space available – but only up to maximum 48 V

variant with front fixing, panel cutout 36,8 x 22 ± 0,5 mm



type 258, 258.1, 258.2, 268, 268.1, 268.2

	AC	DC
reset:	no	no
counting range:	99999,99 h	99999,99 h (new - two decimals)
digit height:	1,8 x 3,6 mm (with lens), white on black, decimals black on white	1,8 x 3,6 mm (with lens), white on black, decimals black on white
voltages:	115 or 230 V AC	12 - 24 V DC
special voltages (at additional cost):	12, 24 or 42 V AC	on request
voltage tolerance:	± 10 %	-
frequency:	50 or 60 Hz (on request 20 and 100 Hz operation)	-
current consumption:	approx. 8 mA	approx. 5 - 15 mA
protection DIN 40050:	housing: IP 65 (front) terminals: IP 00	housing: IP 65 (front) terminals: IP 00
ambient temperature:	- 30 °C to + 70 °C	- 20 °C to + 70 °C
fixing:	retaining clip	retaining clip
connections:	terminals or plugs (straight or bent)	terminals or plugs short circuit and reverse battery protected
approvals:	(€, VDE (UL, CSA – at additional cost)	C€
weight:	approx. 35 g	approx. 35 g

register operating and service times.

Hour counters for AC and DC with or without reset type range 603...617....

These AC or DC counters offer a snap-in fixing for fast mounting and are available with or without cable connection and reset. On request even with detachable key, that is why they are protected against manipulation.

Front frame 54 x 29 mm, in BAUSER design







type 603, 603.2, 603.3, 608, 608.2, 608.3



type 604, 604.2, 604.3, 609, 609.2, 609.3

Front frame 54 x 29 mm, without bezel

AC	DC	grey	black	terminal connection	plug connection 6,3 x 0,8	cable 2 x 0,38 印 L: 500 mm	res without	
604.10	609.10						•	
604.10.2	609.10.2						•	
604.10.3	609.10.3					•	•	
610.10	617.10					•		
610.10.1	617.10.1					•		
610.11	617.11					•		
610.11.1	617.11.1					•		•





Type 610.10 - 617.11.1







type 604.10, 604.10.2, 604.10.3, 609.10, 609.10.2, 609.10.3



type 610.11, 610.11.1, 617.11, 617.11.1



register operating and service times.

Hour counters with protection against accidental contact according to VBG4

BAUSER offers hour counters for operation on 50 and 60 Hz for the world-wide sales. These special types are available with order code .../943. Just as the AC standard counters are UL- and CSA approved.

Technical specifications:

	AC	AC	DC	DC
type:	603 - 604.10.3	610.10, 610.10.1, 610.11, 610.11.1	608 - 609.10.3	617.10, 617.10.1, 617.11, 617.11.1
reset:	no	yes	no	yes
counting range:	99999,99 h	9999,99 h (99999,9 h = 610.10.1, 610.11.1)	999999,9 h	9999,99 h (99999,9 h = 617.10.1, 617.11.1)
digits:	1,5 x 4 mm (with lens) white on black, decimals black on white	2 x 4 mm, white on black, decimals black on white	1,5 x 4 mm (with lens) white on black, decimals black on white	2 x 4 mm, white on black, decimals black on white
voltages:	115 or 230 V AC	115 or 230 V AC	10 - 50 V DC	12 - 24 V DC
special voltages (at additional cost):	12, 24, 42 and 400 V AC	12, 24 and 42 V AC over 230 V AC with loose capacitor	50 - 120 V DC	36, 80, 110 V DC
voltage tolerance:	± 10 %	± 10 %	-	± 15 %
frequency:	50 or 60 Hz (on request 20 and 100 Hz operation)	50 or 60 Hz (on request 20 and 100 Hz operation)	-	-
current consumption:	approx. 8 mA	approx 2 VA	2,6 - 14,5 mA (1,3 - 3,5 mA at special voltage)	7,5 - 30 mA (8 - 14 mA at special voltage)
protection class DIN 40050:	housing: IP 65 (front) terminals: IP 00	housing: IP 41 (front) -	housing: IP 65 (front) terminals: IP 00	housing: IP 41 (front) -
ambient temperature:	- 20 °C to + 70 °C	- 20 °C to + 70 °C	- 20 °C to + 70 °C	- 10 °C to + 50 °C
fixing:	integr. snap-in lugs, panel thickness 0,5 - 3 mm cutout 50,5 x 25,5 mm	metal clamp	integr. snap-in lugs, panel thickness 0,5 - 3 mm cutout 50,5 x 25,5 mm	metal clamp
retaining clip (at additional cost):	for panel thickness up to 15 mm	-	for panel thickness up to 15 mm	•
approvals:	(€ (VDE, UL and CSA – at additional cost)	CE	CE	CE
operation indication:	yes	no	yes	no
conn. short circuit a. reverse batt. prot.:	-	-	yes	yes
protect. ag. accidental contact (to VBG 4):	yes	yes	yes	yes
weight:	approx. 45 g	approx. 135 g	approx. 45 g	approx. 135 g



retaining clip at additional cost

Accessories and special types at additional cost:

variants for 20- and 100 Hz operation: order code i.e.: 603/943	
reset with key: for types 610.10/S, 610.11/S, 617.10/S, 617.11/S (detachable key)	
retaining clip: for type range 603 - 609.10.2	
rubber seal for additional sealing: between counter and panel	
blind cover: grey or black and cutout of minimum 50,2 x 25,2±0,5 mm	
prolonged cable connection	
option: anthracite housing	

register operating and service times.

Mini-hour counters for recording time in minimum available space

If you want to register operation hours and have only minimum space available, then you can count on the mini counter with a counting range of rounded up 10.000 hours. This counter needs only a cutout of 22,3 mm.

Accessories and special types at additional cost:

variants for 20- and 100 Hz operation: order code i.e.: 200.4/943, but only up to 24 V AC or a pre-resistor is needed

type 200.4 R with 2 counting inputs: for recording of different sizes	AC	DC	solder or plug	grey	
UL-approval:			connection	housing	
for AC type 200.4	200.4	208		•	



type 200.4, 208



	AC	DC
reset:	no	no
counting range:	9999,9 h	9999,9 h
digits:	1,5 x 3,5 mm (with lens) white on black, decimals black on white	1,5 x 3,5 mm (with lens) white on black, decimals black on white
voltages:	12 - 24 or 230 V AC	10 - 27 V DC
special voltages (at additional cost):	36 - 60, 60 - 140 V AC, over 230 V with separate capacitor	
voltage tolerance:	± 10 %	-
frequency:	50 or 60 Hz (on request 20 -100 Hz operation)	•
current consumption:	approx. 8 mA	7,5 - 39 mA
protection class DIN 40050:	housing: IP 54 terminals: IP 00	housing: IP 54 terminals: IP 00
ambient temperature:	- 30 °C to + 80 °C	- 10 °C to + 50 °C
fixing:	spring wire	spring wire
approval:	(€ , (UL at additional cost)	(€
operation indication:	yes	yes
cutout:	Ø 22,3 mm, for an optimal fixing	Ø 22,3 mm, for an optimal fixing
mounting depth:	34 mm at 12 - 24 V counters, 68,5 mm at higher voltages	68,5 mm
connection:	at 12 - 24 V, plugs 1,5 x 0,5 as solder part, for all higher voltages 2 plugs 6,3 x 0,8 mm	2 plugs 6,3 x 0,8 mm
weight:	approx. 30 g	approx. 30 g



register operating and service times.

Minutes and hour counters for AC or DC with or without reset, type range R5 72... R5 97



type R5 72, R5 77



type R5 72N

Hour counters with DIN dimensions 72 and 96 mm \Box , suitable for all standard measuring instruments. For AC or DC, for recording of hours or minutes, with our without reset.

Front frame 72 x 72 mm or 96 x 96 mm

AC	DC	re: with	set without	front frame mm	cutout mm	counting range
R5 72	R5 77			72 x 72	68 x 68	99999,99 h
R5 72 N				72 x 72	68 x 68	9999,99 h
R5 72 N/M				72 x 72	68 x 68	99999,9 min.
R5 96	R5 97			96 x 96	92 x 92	99999,99 h
R5 96 N				96 x 96	92 x 92	9999,99 h
R5 96 N/M				96 x 96	92 x 92	99999,9 min





Technical specifications:

	AC	DC
reset:	yes and no	no or on request*
digits:	2 x 4 mm, white on black, decimals black on white	2 x 4 mm, white on black, decimals black on white
voltages:	115 or 230 V AC	10 - 50 V DC
special voltages (at additional cost):	12, 24, 42 and 400 V AC	36, 80, 110 V DC
voltage tolerance:	± 10 %	-
frequency:	50 or 60 Hz	-
current consumption:	approx. 2 VA	7,5 - 30 mA
protection class DIN 40050:	housing without reset button: IP 52 housing without reset button: IP 41 terminals: IP 00	housing: IP 52 terminals: IP 00
ambient temperature:	- 10 °C to + 60 °C	- 10 °C to + 50 °C
fixing:	metal bracket	metal bracket
connection:	terminal or plug (0,8 x 6,3 mm)	terminal or plug (0,8x6,3mm)
approval:	(€, (UL at additional cost)	CE
protect. ag. accidental contact (at add. cost):		terminal cover type R5 VBG-4-requirements
operation indication:	yes	yes
short circuit and rev. battery protected:	-	yes
weight:	approx. 115 or 140 g	approx. 120 or 145 g

Accessories and special types at additional cost:

terminal cover type R5 protection against accidental contact

detachable key for reset order code i.e.: R5 72 N/S

*DC hour counter with reset

grey front frame

anti-reflective front glass

register operating and service times.

Hour and pulse counter combinations for DIN rail mounting, for AC or DC

With its overall height of 55 or 60mm it is an ideal counter program for DIN rail mounting.

These AC or DC counters can register times and totals (pulses), on request even both values in just one single housing.

Find pulse counter as single counter on page 7-1.

AC	DC	counting range
660.5	665.5	99999,9 h
660.6	665.6	99999,9 h

Hour counter, overall height: 55 or 60 mm





006600h

type 660.5, 660.6, 665.5, 665.6

hour counter / pulse counter combination, overall height: 55 or 60 mm

maximum 10 pulses/sec. counting frequency: pulse duration/-break: 50/50 msec.

Technical specifications for combination counters:

			current consumption:		approx. 2,5 VA at 230 V AC approx. 250 mW at 24 V DC	
			operating time: 100 %			
	DC	counting range	two hour counters	hour and pulse counter	overall height 55 mm 60 mm	terminal connection
5	167.5	99999,99 h 9999999			•	•
5	168.5	99999,99 h 99999,99 h			•	•
6	167.6	99999,99 h 9999999			•	•



type 162.5, 163.5, 162.6, 163.6, 167.5, 168.5, 167.6, 168,6



Note: Please request special versions (type 164.5/.6 for VAC or type 169.5/.6 for VDC) at additional cost for hour/ pulse counter combinations for extremely short operating times.

Technical specifications:

168.6

99999,99 h 99999,99 h

AC

162.5 163.5 162.6

163.6

	AC	DC
reset:	no	no
operation indicat.:	no	no
digits:	1,2 x 4 mm, white on black, differing decimals	1,2 x 4 mm, white on black, differing decimals
voltages:	115 or 230 V AC	10 - 27 V DC
special voltages (at add. cost):	type 660.5/.6: 24, 48 and 400 V AC type 162.5/163.5: 24 V AC	type 167.5/168.5: 24 V DC ± 10 % on request
voltage tolerance:	± 10 %	-
frequency:	50 or 60 Hz (on request 20 - 100 Hz)	-
current consumpt.:	approx. 10 mA at rated voltage	7,5 - 40 mA
protection class DIN 40050:	housing: IP 65 (front) terminals: IP 20	housing: IP 65 (front) terminals: IP 20
ambient temp.:	- 10 °C to + 70 °C	- 10 °C to + 50 °C
fixing:	snap-on fixing for DIN rail	snap-on fixing for DIN rail
approval:	CE	CE
weight:	approx. 60 g or 80 g (combination)	approx. 60 g or 80 g (combination)



register operating and service times.

DC hour counters for printed circuit or front panel mounting, disable input, protection class IP 65



type 655



type 656

Mini hour counter for 5, 12 or 24 VDC

These mini hour counters for DC operation are suited for panel or printed circuit mounting. Find the corresponding pulse counters with same dimensions on page 7-2.

DC	printed circuit counter, washable	front panel mounting (snap-in fixing max. 3 mm)
655		
656		•

Special features:

mini-hour counter in solder- and water-proof version

with disable input for recording of the smallest operating times

high shock- and vibration resistance

little current consumption

well suited for battery-operated application and electronic switching

type 655 indication on the face (option - at additional cost)

Technical specifications:

	DC
reset:	no
counting range:	99999,99 h
digits charact. height:	4 mm (with lens)
operating voltage:	5, 12, 24 V DC
voltage tolerance:	5 V DC - 5 % + 20 % 12, 24 V DC ± 10 %
remaining swell:	maximum 5 %
mean power consumption:	approx. 22 mW at 5 V DC approx. 24 mW at 12 V DC approx. 48 mW at 24 V DC
maximum power consumption, all 36 sec. with a pulse length of 32 msec.:	approx. 70 mW at 5 V DC approx. 120 mW at 12 V DC approx. 250 mW at 24 V DC
protection class:	type 655: IP 65 type 656: IP 65 (front)
ambient temperature:	- 10 °C to + 60 °C
electr. connections:	soldered conn. 0,4 x 1,2 mm
weight:	16 or 19 g
maintenance-free operation:	yes





D

5







register operating and service times.

DC hour counters with hour and minute indication, vibration resistant, low current consumption

These quartz-operated hour counters for the utility vehicle industry have stood the test of decades. They have an elevated design, are robust, with water-proof front-face and available for the 52 or 60mm panel cutout. The time is rapide and easily readable with the circulating minute hand.

Housing Ø 52 mm with chromed 3-edge-frontal ring





type 557, 558

Housing Ø 52 mm with black-chromed 3-edge-frontal ring





type 557.2, 558.2

Housing Ø 52 mm with detachable adapter ring for reaching housing of Ø 60 mm with chromed or black-chromed 3-edge-frontal ring





type 557/60, 558/60

Find the technical specifications for the DC hour counters with hour and minute indication on page 6-14.



register operating and service times.

Quartz-operated hour counters, 10 - 80 V DC in one housing, protection class IP 65

The standard type is suited for applications with a voltage range of 10 - 80 V DC. Further they can be used for difficult applications, for example with damping rubber ring for extreme vibrations.

Housing Ø 52 mm with detachable adapter ring (=Ø 60 mm) and damping rubber ring (= Ø 72 mm)



Accessories and special types at additional cost:

flat frontal ring available for all counters

housing Ø 60 mm (without adapter ring) available for all counters order code .../600

rubber seal ring available for housing of Ø 52 mm or Ø 60 mm

metal fastening bolt for extreme applications order code .../894





	DC
reset:	no
counting range:	99999 h and 0 - 60 minutes
digits char. height:	2 x 4 mm, white on black
voltage:	10 - 80 V DC (1,4 - 15 mA)
special voltages (at additional cost):	2 - 20 V DC (1,5 - 27 mA) 80 - 220 V DC (1,4 - 4,5 mA)
protection class (DIN 40050):	housing: IP 65 (front) terminals: IP 00
ambient temperature:	- 40 °C to + 80 °C
fixing:	metal bolt
approval:	(€
operation indication:	yes
connection:	short circuit and reverse battery protected
vibration resistance:	tested on 3 levels at 45 Hz, amplitude ± 0,5 mm each level, electronic and plastic version = little specific weight
time divergence:	only 0,01 % in 24 h: compared to the electromechanical counters no after running differences arise on the indication
weight:	approx. 110 g

register operating and service times.

Quartz-operated hour counters, 10 - 80 V DC in one housing

These instruments meet the high-level requirements for hour counters in construction machines, fork lift trucks or other vehicles. The quartz controlled electronic and the known BAUSER housing technology offer a basis for optimum value for money. In large quantities it is possible to print your logo on the counter.







type 587.10.2, 588.10.2







Housing Ø 52 mm with detachable adapter ring for reaching housing of Ø 60 mm with chromed or black-chromed 3-edge-frontal ring





type 587/60, 588/60

Find the technical specifications for the quartz-controlled hour counters on page 6-16.



Cost effective DC hour counters, protection class IP65, variants with 3 separate inputs

BAUSER technology has convinced already a large number of known OEM customers world-wide. The quartz-controlled hour counters are suited for cutout of \emptyset 52 or 60 mm and offer a protection class of IP 65 (front).

Housing Ø 52 mm with detachable adapter ring (= Ø 60 mm) and damping rubber ring (Ø 72 mm)



Accessories and special types at additional cost:

Flat frontring available for all counters

housing Ø 60 mm (without adapter ring) available for all counters order code .../600

rubber seal ring for housing of Ø 52 or Ø 60 mm

metal fastening bolt for extreme applications order code .../894



Technical specifications:



current-voltage-curve type range 587...

	DC
reset:	no
counting range:	99999,99 h
digits char. height:	1,5 x 3,5 mm, white on black, decimals black on white
voltage:	10 - 80 V DC (1,4 - 15 mA)
special voltages (at additional cost):	2 - 20 V DC (0,5 - 27 mA) 80 - 220 V DC (1,5 - 4,5 mA)
protection class (DIN 40050):	housing: IP 65 (front) terminals: IP 00
ambient temperature:	- 40 °C to + 80 °C
fixing:	metal bolt
approval:	(€
operation indication:	yes
connection:	short circuit and reverse battery protected
vibration resistance:	tested on 3 levels at 45 Hz, amplitude \pm 0,5 mm each level, electronic and plastic version with little specific weight
time divergence:	only 0,01 % in 24 h; compared to the electromechanical counters no after-running differences arise on the indication
weight:	approx. 100 g

register ooperating and service times.

Cost effective hour and pulse counter combinations for flush and surface/DIN-rail mounting, AC or DC

Here you will find a solid solution for a hour and pulse counter combination. Choose between flush or surface/DIN-rail mounting. The connections can be adjusted for a common or separate AC or DC current supply.





type 920

Type range 920, 920 A.2

type	flush mounting	DIN-rail	front frame 48 x 48 mm	terminal connection
920			•	•
920 A.2				•

Descriptions and application field:

This counter combination consists of one hour counter and one pulse counter.

As standard version operates with common current supply, that means the pulse counter registers the connecting frequency and the hour counter the total operating time of a machine/equipment, i.e. oil burner. On request at additional cost the counter can be separately current supplied (only for flush mounting) - order code: 920/860.

ж Б 1000186 h 1100100 Л

type 920 A.2

	920	920 A.2	
mounting type:	flush mounting	surface/DIN-rail mounting	
counting range:	hour counter: 99999,99 h pulse counter: ED 100 %, 9999999		
digits character height:	1,5 x 3,5 mm (with lens)		
voltages:	115, 230 V AC, 50 and 60 Hz		
special voltages:	24, 48 V AC, 50 and 60 Hz (at additional	cost)	
voltage:	24 V DC		
special voltages (at additional cost):	48, 110, 230 V DC		
connections:	standard: with common current supply at additional cost: with separate current supply, but with same voltage; that means both counters can be separately triggered, order code: z:B. 920/860 (= only for flush mounting)		
voltage tolerance:	± 10 %		
current consumption (common current supply):	V AC 3 - 8 mA V DC 7 - 13 mA		
protection class DIN 40050:	housing: IP 65 (front) terminal: IP 00	housing: IP 65 terminals: IP 20, at additional cost with terminal cover: IP 40	
ambient temperature:	- 10 °C to + 50 °C	- 10 °C to + 50 °C	
fixing:	retaining clip	surface/DIN-rail	
approval:	CE	CE	
operation indication:	yes	yes	
weight:	approx. 55 g	approx. 70 g	



register operating and service times.

Hour counter and/or pulse counter combinations, with or without reset, for AC or DC



type 593

Here you will find robust counters for recording of operating times, quantities or both combined in only one housing. It is also possible to reset a counter with a button or a key. Inform us about your wishes, we find the suitable solution for you.

Type range 593 ...





Technical specifications:

	AC
reset:	hour counter: yes totalising counter: no
counting range:	hour counter: 9999,99 h totalising counter: 99999,9 h
digits character height:	2 x 4 mm, white on black, decimals black on white
voltages:	115 or 230 V AC
special voltages (at additional cost):	12, 24 and 400 V AC
voltage tolerance:	± 10 %
frequency:	50 or 60 Hz
current consumpt.:	approx. 2 VA
prot. class DIN 40050:	housing: IP 41 (front)
ambient temperature:	- 20 °C to + 70 °C
approval:	CE
operation indication:	no
weight:	250 g

Special types at additional cost:

first counter without reset or with key reset, for AC or DC operation

counter combination with 3 resetable units in one frame, dimensions: on request

combinations with pulse counters, with our without reset or hour counter and pulse counter combined according your requirements, for AC or DC operation.

example of order: counter combination type 593, but consisting of: ...

register operating and service times.

Vibration hour counters - small, solid construction

This counter operates on "moderate" vibrations. A precise clock movement realises mechanically, without current supply, the operating times of equipment. In order to measure exactly, we propose to test the operating threshold sensibility and the suitable mounting state first.

Type range 105/106...

type	housing dimensions	mounting depth	fixing	adapter ring**	damping rubber ring**
105	52 mm	38 mm	screw ring*		
106	52 mm	52 mm	metal clamp		
106.1	72 mm	46,5 mm	metal clamp	•	•



type 105

type 105 7,5 555 5







Technical specifications:

reset:	no
counting range:	99999,9 h
digits:	2 x 4 mm, white on black, decimals black on white
ambient temperature:	- 25 °C to + 80 °C
protection class:	housing dust- and water-proof
operation indic.:	yes
time divergence:	accuracy ± 3 % (at continuous operation)
weight:	approx. 100 g

Application field:

Mechanically working hour counter for recording operating times of vehicles, machines and equipment, which obtain vibrations while operating and no current supply is available. Preferred applications are for construction- and agricultural machines. Vibrations, pulsation, impacts or shaking movements act as energy source for operation of the counter.

Operating threshold sensibility:

The counting movement is run by an energy converter with high operating threshold sensibility. A diagram offers you assistance in finding out at which frequency and amplitude the counter operates. We propose to test optimal mounting state with a sample , as the pulse shapes – due to their harmonic content - will be different and often occur dead-beat. The vibration motor will be high operating threshold sensible, when receiving vibrations equally from which direction. While installing the counter it is necessary to choose the adjusted frequency and amplitude and do not expose the unit to destroying accelerating power.

* push-on threaded ring is spring-loaded to prevent accidental loosening **adapter- and damping rubber ring to reduce extreme vibrations



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type 106.1



Variant:

The vibration motor and the counting movement are encased in a compact, water- and dust-proof, high quality plastic small-housing and locked with a nickel-plated front ring and breakproof glass.

option: black front ring