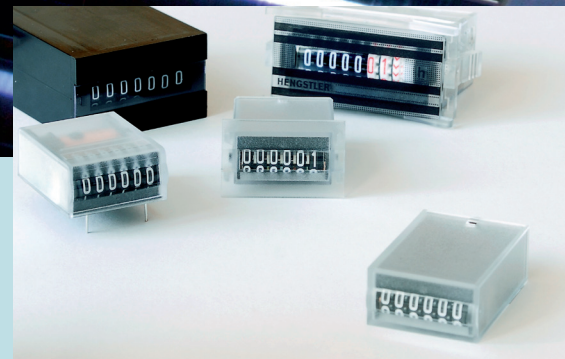




Industrial Counting and Control Components



HENGSTLER

Hengstler Products



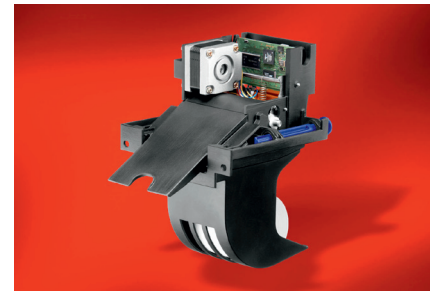
Encoders

Absolute Encoders
ACURO drive and ACURO industry,
Incremental Encoders,
Ex-proof and stainless steel versions,
Bus Encoders



Industrial Counting and Control Components

Starting from mini-counters
up to ambitious control counters,
multi-function counters, counters with
interface, position indicators,
timers, tachometers



Printers and Cutters

Printer solutions e.g. applications in the
sector of info points, ticket dispensers,
cash dispensers, POS systems, modular
thermal and needle printers, accessories
such as winders and cutters



Relay technology

Main focus is the worldwide most
versatile product range of safety relays
- relays with guided contact sets -
Furthermore:
bistable relays, insulation relays,
high-voltage relays, mini switching relays

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Electronic Totalizing Counters



Type	tico 772	tico 773	tico 774	tico 721
	<ul style="list-style-type: none"> ■ Universally applicable as counter, tachometer, timer, shift-counter or batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ For the first time the intensity of the backlight is adjustable ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals 	<ul style="list-style-type: none"> ■ Programmable via USB-Interface ■ Reduces downtimes and enhances technical support ■ Most simple handling ■ Universally applicable as tachometer, timer, shift counter or batch counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Programmable via RS232-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Most simple handling ■ Impressive, clearly readable display in 48x48mm ■ For the first time the intensity of the backlight is adjustable ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118
Front panel cutout (mm)	45 x 45	45 x 45	45 x 45	45 x 45
Display	1. Line 9.3mm 2. Line 7.2mm	1. Line 9.3mm 2. Line 7.2mm	1. Line 9.3mm 2. Line 7.2mm	1. Line 12.0mm 2. Line 6.0mm
Protection	IP 65 frontside	IP 65 frontside	IP 65 frontside	IP 65 frontside
Supply voltage	12-30 VDC, 24 VAC, 115 VAC, 230 VAC; 90-260 VAC	12-30 VDC, 90-260 VAC	12-30 VDC, 90-260 VAC	12-30 VDC, 24 VAC, 115 VAC, 230 VAC; 90-260 VAC
Inputs				
Input control	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Frequency	up to 60kHz	up to 60kHz	up to 60kHz	up to 60kHz
Prescaler	0,0001 - 99,9999	0,0001 - 99,9999	0,0001 - 99,9999	0,0001 - 9,9999
Reset input	manuel reset via keyboard external reset, static or dynamic	manuel reset via keyboard external reset, static or dynamic	manuel reset via keyboard external reset, static or dynamic	manuel reset via keyboard external reset, static or dynamic
Control inputs	Reset, Gate, Hold, Keylock	Reset, Gate, Hold, Keylock	Reset, Gate, Hold, Keylock	Reset, Gate, Hold, Keylock
Counting mode				
Add mode	Programmable	Programmable	Programmable	Programmable
Difference mode	Programmable	Programmable	Programmable	Programmable
Counting direction	Programmable	Programmable	Programmable	Programmable
Add/Add mode	Programmable	Programmable	Programmable	Programmable
Phase Discriminator	Programmable	Programmable	Programmable	Programmable
Output				
	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs
Page	50	50	50	49

Electronic Totalizing Counters



Type	tico 731	tico 732	tico 734	signo 727
Features	<ul style="list-style-type: none"> ■ Small, compact, 5 different versions ■ Voltage supply via lithium cell or 12-24 VDC ■ 8-digit LCD or 6-digit LED display ■ Programmable counting frequency and active edge ■ High-voltage version for 12-250 VDC/AC input pulses ■ Optional with prescaling function; decimal point and output signal 	<ul style="list-style-type: none"> ■ Multifunctional, used as counter, tachometer, time counter, shift or batch counter ■ Voltage supply 12-24 VDC; 115 VAC, or 230 VAC ■ 6-digit LCD or LED display ■ Offering a large variety of programmable functions ■ Without or with 1 or 2 presets ■ Freely adjustable prescaling ■ Programmable keyboard lock ■ Integrated totalizing counter 	<ul style="list-style-type: none"> ■ Totalizing counter with large, 8-digit LCD display; illuminated ■ Voltage supply via exchangeable lithium cell ■ Small mounting depth ■ Expandable by a variety of module options ■ 10 versions offering different functions (same design) 	<ul style="list-style-type: none"> ■ Large 6-digit LED display ■ Voltage supply 12-24 VDC or 115/230 VAC ■ Connections via plug-in screw terminals ■ Very high counting frequency up to 40 kHz ■ With or without 2 limit values, for use as relay and transistor ■ Options: RS 232 or RS 485
Technical Data				
Dimensions (mm)	48 x 24 x 32 short 48 x 24 x 60 long	48 x 48 x 93.5	72 x 36 x 36	96 x 48 x 108
Front panel cutout (mm)	45 x 22.5	45 x 45	68 x 33	92 x 45
Display	LCD 8-digit, 7 mm LED 6-digit, 7.6 mm	LCD 6-digit, 9 mm LED 6-digit, 7.6 mm	LCD 8-digit, 12 mm	LED 6-digit, 14 mm
Protection	IP 54	IP 65	IP 65	IP 54
Supply voltage	Li battery, type 1+3, 12-24 VDC	12-24 VDC, 24 VAC, 115 VAC, 230 VAC versions	Exchangeable Li battery	12-24 VDC; 115/230 VAC
Inputs				
Input control	PNP/NPN, type 3 with 12-250 VDC/AC	PNP/NPN	PNP/NPN	PNP/NPN
Frequency	7.5 kHz / 30 Hz, type 3; 20 Hz	5 kHz / 30 Hz	10 kHz / 30 Hz	40 kHz / 30 Hz
Prescaler	Optional, 0.001-99.999	0.001-999.999	Optional 0.0001-99.9999	0.0005-99.9999
Reset input	NPN type 1+2, type 3 with 12-250 VDC/AC NPN/PNP Type 4-5	PNP/NPN	NPN	PNP/NPN
Control inputs	Optional: 2 nd counter input, keyboard lock or gate input	2 nd counter input and gate input	Keyboard lock	Gate input, reset enable and keylock input
Counting mode				
Add mode	Standard	Programmable	Standard	
Difference mode	Optional type 5	Programmable	Optional	Programmable
Counting direction		Programmable		Programmable
Add/Add Mode		Programmable		
Phase Discriminator	Optional Type 4+5	Programmable	Optional	1-,2-,4-fold programming
Output	Optional as transistor PNP or display	Without, or with 1 or 2 relays and transistor outputs	Option as SSR output	Version with 2 limit values; for use as relay or transistor
Page	46	47	48	51

Electromechanical Totalizing Counters



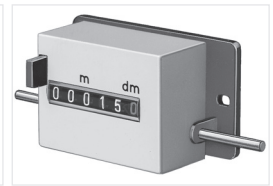
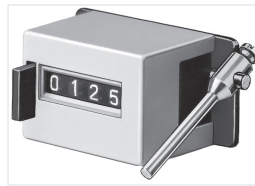
Type	Type 464-468	Type 864-868	Type 634 / 635	Type 635 iw
Features	<ul style="list-style-type: none"> ■ 4-, 6- or 8-digit display ■ With manual/electrical reset or without reset ■ Plugs into modular system 400 ■ Convenient for service 	<ul style="list-style-type: none"> ■ 4-, 6- or 8-digit display ■ With manual/electrical reset or without reset ■ Plugs into modular system 400 ■ Convenient for service 	<ul style="list-style-type: none"> ■ Small mounting dimensions ■ Low power consumption ■ Standard connections ■ Suitable for PCB mounting ■ Machine-solderable and washable 	<ul style="list-style-type: none"> ■ Small AC voltage counter ■ Low power consumption ■ Easy to install ■ Protection IP 66
Technical Data				
Dimensions (mm) (Width x Height x Depth)	50 x 25 x 75.5	56 x 40 x 72.5 55 x 28 x 72.5	25.2 x 31 x 14.6 30 x 20 x 40	30 x 20 x 58.3
Front panel cutout (mm)	50 x 25	52 x 27	27 x 14.2 only .8	27 x 14.4
No. of digits/ Digit height	4-8 depending on version/4 mm	6; 8 depending on version/4 mm	6, optional 7/ 4 mm (visual)	6/ 4 mm (visual)
Protection	IP 40	IP 40	IP 65	IP 66
Pulse voltage	24 VDC; 24 VAC; 115 VAC; 230 VAC surplus voltage	24 VDC; 24 VAC; 115 VAC; 230 VAC	5; 12; 24 VDC	24; 115; 230 VAC
Power consumption	DC 2.5 W, AC 2.75 VA	DC 2.5 W, AC 2.75 VA	50-440 mW depending on version	85-600 mW
Reset	Without reset, with manual or electrical reset, depending on version	Without reset or with manual reset, depending on version		
Operating temperature	- 10...50 °C	- 10...50 °C	- 10...50 °C;	-10...50 °C
Duty cycle	100 % at 25 °C	100 % at 25 °C	100 % at 25 °C	100 % at 25 °C
Accessories	Panel frame connection box			
Dimensions (mm) (including panel frame)	60 x 50 x 88			
Cutout (mm) (including panel frame)	55 x 29.5			
Page	53	53	54	55

Electromechanical Totalizing Counters



Type	Type 635 DIN	Type 872-877	Type 853
Features	<ul style="list-style-type: none"> ■ For DIN rail mounting ■ Wide voltage range ■ Screw-type terminals ■ Without reset function 	<ul style="list-style-type: none"> ■ Small mounting dimensions ■ 4-,5-,6- or 7-digit display ■ Connections with AMP plug ■ For surface mounting or base mounting ■ With or without reset function 	<ul style="list-style-type: none"> ■ Surface mounting ■ Easy to install ■ Pushbutton reset
Technical Data			
Dimensions (mm) (Width x Height x Depth)	25.5 x 68.5 x 28	31.5- 38 x 26.5 x 75	53 x 100 x 26
Front panel cutout (mm)		32 - 38.5 x 27	
No. of digits/ Digit height	6/ 4 mm	4; 5; 6; 7 depending on version 4 mm	6/ 4 mm
Protection	IP 10	IP 40	IP 10
Pulse voltage	5/12/24 VDC; 115/230 VAC	12; 24 VDC; 24; 110 230 VAC	24 VDC; 110, 220 VDC 230 VAC, 24, 110 VAC
Power consumption	80 - 665 mW	DC 1.5 W, AC 2.5 VA	DC 2.75 W, AC 4 VA
Reset		Without reset or with manual reset, depending on version	Manual
Operating temperature	- 10...50 °C	- 10...50 °C	- 10...50 °C
Duty cycle	100 % at 25 °C	100 % at 25 °C	100 % at 25 °C
Accessories		Mounting base	
Page	55	55	56

Mechanical Totalizing Counters



Type	Type 344-346	Type 101/103/301/309	Type 125	Type 150
Features	<ul style="list-style-type: none"> ■ 4-digit hand tally ■ Mounting by means of thumb ring; for wall or bench-mounting ■ Reset via rotary knob ■ Rugged and simple ■ Maintenance-free operation 	<ul style="list-style-type: none"> ■ Small mechanical revolution and stroke counter ■ 4- or 5-digit display ■ For flush- or surface mounting ■ With or without case ■ Without reset function 	<ul style="list-style-type: none"> ■ 4-digit hand tally, revolution and stroke counter ■ With key reset function ■ Small dimensions 	<ul style="list-style-type: none"> ■ 6-digit revolution, length and stroke counter ■ Length counter ■ With key reset function
Technical Data				
Dimensions (mm) (Width x Height x Depth)	60 x 60 x 26	34.8 x 32 x 20	54 x 45 x 43.5 hand tally, 53 x 28.4 x 35	80 x 45 x 43.5
No. of digits	4	4 or 5	4	6
Digit height	4 mm	4.2 mm	4 mm	4 mm
Protection			IP 50	IP 50
Reset function	Manual, via rotary knob		Manual, via reset key	Manual, via reset key
Drive	Hand button	Shaft, right or left	Shaft, right or left	Both sides; stroke counter right or left
Torque/ Actuating distance		0.05 Ncm, stroke counter 1.0 Ncm		0.2 Ncm, stroke counter 5 Ncm
Max. speed		1000/100 r.p.m.	1500/500 r.p.m.	3000/1500 r.p.m.
Max. stroke		500 strokes/min	500 strokes/min	500 strokes/min
Transmission ratio	1:1	1:1 / 1:10	1:1 / 1:10	1:1 / 1:2 / 1:10
Mounting	Suitable for manual mounting, wall or bench mounting	Flush-mounting case, surface-mounting case	Baseplate	Baseplate
Accessories		Stroke lever	Stroke lever, measuring wheels	Stroke lever, measuring wheels
Page	61	61	62	62

Mechanical Totalizing Counters



Type	Type 110/111/205/312	Type 225	Colibri
Features	<ul style="list-style-type: none"> ■ Length counter with key reset ■ 7-digit display ■ Large digits, 8 mm 	<ul style="list-style-type: none"> ■ 6-digit revolution, length and stroke counter ■ Length counter ■ With key reset ■ Large digits, 6.5 mm 	<ul style="list-style-type: none"> ■ Non-contact counter with magnetic drive ■ Small mounting dimensions ■ Protection IP 66 ■ Maintenance-free operation ■ Easy to mount
Technical Data			
Dimensions (mm) (Width x Height x Depth)	92 x 80 x 48	132 x 70 x 74.2	27 x 25 x 20.2
No. of digits	7	6	6
Digit height	8 mm	6.5 mm	4 mm, visual digit height
Protection	IP 53		IP 66
Reset	Key reset	Manual, via reset key	
Drive	Both sides	Both sides, front, rear, bottom	Via Fe, N- or S-pole magnets
Torque/ Actuating distance	Type 110: 6.0 Ncm Type 111: 1.0 Ncm Type 205: 0.5 Ncm Type 312: 8.6 Ncm	1.2 Ncm, stroke counter 8 Ncm	Fe = 0.5 mm; N+ S pole magnets depending on strength
Max. speed	Type 110: 1000 RMP Type 111: 1500 RMP Type 205: 3000 digits/min Type 312: 500 strokes/min	10.000 digits/min	
Max. stroke		800 strokes/min	
Transmission ratio	1:1 / 1:2 / 1:5 / 1: 10	1:1 / 1:5 / 1: 50	
Mounting	Baseplate	Baseplate	ZOB = Without plate ZBO = Top plate ZBH = Rear plate ZBL = Left plate
Accessories	Measuring wheels	Stroke lever, measuring wheels	Mounting plates, Hose clamps Magnets
Page	63	63	66

Electronic Preset Counters



Type	tico 772	tico 773	tico 774	tico 721
Features	<ul style="list-style-type: none"> ■ Universally applicable as counter, tachometer, timer, shift-counter or batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ For the first time the intensity of the backlight is adjustable ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals 	<ul style="list-style-type: none"> ■ Programmable via USB-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals 	<ul style="list-style-type: none"> ■ Programmable via RS232-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Most simple handling ■ Impressive, clearly readable display in 48x48mm ■ For the first time the intensity of the backlight is adjustable ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118
Front panel cutout (mm)	45 x 45	45 x 45	45 x 45	45 x 45
Display	1. Line 9.3mm 2. Line 7.2mm	1. Line 9.3mm 2. Line 7.2mm	1. Line 9.3mm 2. Line 7.2mm	1. Line 12.0mm 2. Line 6.0mm
Protection	IP 65 frontside	IP 65 frontside	IP 65 frontside	IP 65 frontside
Supply voltage	12-30 VDC, 24 VAC, 115 VAC, 230 VAC; 90-260 VAC	12-30 VDC, 90-260 VAC	12-30 VDC, 90-260 VAC	12-30 VDC, 24 VAC, 115 VAC, 230 VAC; 90-260 VAC
Inputs				
Input control	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Frequency	up to 60kHz	up to 60kHz	up to 60kHz	up to 60kHz
Prescaler	0,0001 - 99,9999	0,0001 - 99,9999	0,0001 - 99,9999	0,0001 - 9,9999
Reset input	manuel reset via keyboard external reset, static or dynamic	manuel reset via keyboard external reset, static or dynamic	manuel reset via keyboard external reset, static or dynamic	manuel reset via keyboard external reset, static or dynamic
Control inputs	Reset, Gate, Hold, Keylock	Reset, Gate, Hold, Keylock	Reset, Gate, Hold, Keylock	Reset, Gate, Hold, Keylock
Counting mode				
Add mode	Programmable	Programmable	Programmable	Programmable
Difference mode	Programmable	Programmable	Programmable	Programmable
Counting direction	Programmable	Programmable	Programmable	Programmable
Add/Add Mode	Programmable	Programmable	Programmable	Programmable
Phase Discriminator	Programmable	Programmable	Programmable	Programmable
Output	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs
Page	50	50	50	50

Electronic Preset Counters



Type	tico 732	tico 734	signo 723.1
Features	<ul style="list-style-type: none"> ■ Multifunctional, used as counter, tachometer, time counter, shift or batch counter ■ Voltage supply 12-24 VDC; 115 VAC, or 230 VAC ■ 6-digit LCD or LED display ■ Offering a large variety of programmable functions ■ Without or with 1 or 2 presets ■ Freely adjustable prescaling ■ Programmable keyboard lock ■ Integrated totalizing counter 	<ul style="list-style-type: none"> ■ Preset counter with large, 7-digit LCD display; illuminated ■ Voltage supply via exchangeable lithium cell ■ Small mounting depth ■ Expandable by a variety of module options ■ 10 versions offering different functions (same design) 	<ul style="list-style-type: none"> ■ Large 6-digit LED display ■ Voltage supply 12-24 VDC or 115/230 VAC ■ Connections via plug-in screw terminals ■ Very high counting frequency up to 40 kHz ■ 2 Presets (as relay and transistor); one preset is programmable as a trailing preset ■ Reproducible, freely selectable set value ■ Optional with RS 232 or RS 485 interface
Technical Data			
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 93.5	72 x 36 x 36	96 x 48 x 108
Front panel cutout (mm)	45 x 45	68 x 33	92 x 45
Display	LCD 6-digit, 9 mm LED 6-digit, 7.6 mm	LCD 7-digit, 12 mm	LED 6-digit, 14 mm
Protection	IP 65	IP 65	IP 54
Supply voltage	12-24 VDC, 115 VAC, 24 VAC, 230 VAC versions	Exchangeable Li battery	12-24 VDC; 115/230 VAC versions
Inputs			
Input control	PNP/NPN	PNP/NPN	PNP/NPN
Frequency	5 kHz / 30 Hz	10 kHz / 30 Hz	40 kHz / 30 Hz
Prescaling factor	0.001-999.999	Optional 0.0001-99.9999	0.0005-99.9999
Reset input	PNP/NPN	NPN	PNP/NPN
Control inputs	2 nd counter input and gate input	Keyboard lock	Gate input, display hold and keylock input
Count Mode			
Add Mode	Programmable	Programmable	Programmable
Difference Mode	Programmable	Optional	Programmable
Count Direction Mode	Programmable	Programmable	
Add/Add Mode	Programmable		1-,2-,4fold programmable
Phase Discriminator	Programmable	Optional	
Output	Without, or with 1 or 2 relays and transistor outputs	Option as SSR output	2 preset outputs (relay and transistor)
Page	47	48	51

Electromechanical Preset Counters



Type	Type 486-487	Type 886-887	Type 446 / 447
Features	<ul style="list-style-type: none"> ■ Adding preset counter ■ Display 3-digit or 5-digit with permanently visible presets ■ Manual, electrical, or automatic reset ■ Plugs into modular system 400 ■ Easy to service 	<ul style="list-style-type: none"> ■ Adding preset counter ■ Display 3-digit or 5-digit with permanently visible presets ■ Manual, electrical, or automatic reset ■ Available with different front panel sizes ■ Compact design 	<ul style="list-style-type: none"> ■ Subtracting preset counter ■ Display 3-digit or 5-digit with permanently visible presets ■ Manual, electrical, or automatic reset ■ Plugs into modular system 400 ■ Easy to service
Technical Data			
Dimensions (mm) (Width x Height x Depth)	50 x 50 x 92.5	60 x 75 x 72.5 55 x 53.2 x 72.5	50 x 50 x 92.5
Front panel cutout (mm)	50 x 50	52 x 52	50 x 50
Display	3; 5, depending on version	3; 5, depending on version	3; 5, depending on version
Digit height	4 mm	4 mm	4 mm
Protection	IP 30	IP 30	IP 30
Pulse voltage	24 VDC, 24 VAC, 115 VAC, 230 VAC surplus voltage	24 VDC, 24 VAC, 115 VAC, 230 VAC	24 VDC, 24 VAC, 115 VAC, 230 VAC
Power consumption	DC 2.5 W; AC 2.75 VA	DC 2.5 W; AC 2.75 VA	DC 2.5 W; AC 2.75 VA
Reset	Manual, electrical - depending on version; optional: automatic reset	Manual, electrical - depending on version	Manual, electrical - depending on version optional: automatic reset
Operating temperature	- 10...50 °C	- 10...50 °C	- 10...50 °C
Duty cycle / count input	100 % at 25 °C	100 % at 25 °C	100 % at 25 °C
Accessories	Panel frame, connection box, reset automatic module		Panel frame, connection box, reset automatic module
Dimensions (mm) (with panel frame)	60 x 75 x 88		60 x 75 x 88
Panel frame cutout (mm)	55 x 55		55 x 55
Page	57	57	56

Mechanical Preset Counters



Type	Type 250			
Features	<ul style="list-style-type: none"> ■ 5-digit indication, revolution, length and stroke counter ■ Subtracting counting direction ■ Large stroke keys for preset input ■ Pushbutton reset ■ Large digits, 6.5 mm 			
Technical Data				
Dimensions (mm) (Width x Height x Depth)	132 x 70 x 74.2			
Digits	5			
Digit height	6.5 mm			
Protection	IP 40; connections IP00			
Reset	Manual reset via reset key			
Drive	Both sides, front, back, bottom			
Torque/	1.2 Ncm			
Actuating distance	Stroke counter 8 Ncm			
Max. speed	10.000 digits/min.			
Max. no. of strokes	800 strokes/min.			
Transmission ratio	1:1 / 1:5 / 2:1 / 5:1			
Mounting	Baseplate			
Accessories	Stroke levers, measuring wheels			
Page	64			

Electronic Time Counters



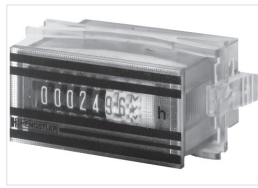
Type	tico 772	tico 773	tico 774	tico 731
Features	<ul style="list-style-type: none"> ■ Universally applicable as counter, tachometer, timer, shift-counter or batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ For the first time the intensity of the backlight is adjustable ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals ■ 3 Presets 	<ul style="list-style-type: none"> ■ Programmable via USB-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Programmable via RS232-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Small, compact, 5 different versions ■ Voltage supply via lithium cell or 12-24 VDC ■ 8-digit LCD or 6-digit LED display ■ Two versions with different time ranges for each type ■ High-voltage version for 12-250 VDC/AC input pulses ■ Optional with output signal for use as maintenance counter
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118	48 x 24 x 32 short 48 x 24 x 60 long
Front panel cutout (mm)	45 x 45	45 x 45	45 x 45	45 x 22.5
Display	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	LCD 8-digit, 7 mm LED 6-digit, 7.6 mm
Protection	IP 65 frontside	IP 65 frontside	IP 65 frontside	IP 54 frontside
Supply voltage	12-30 VDC, 24 VAC, 115 VAC, 230 VAC; 90-260 VAC	12-30 VDC; 90-260 VAC	12-30 VDC; 90-260 VAC	Li battery, type 1+3, 12-24 VDC
Inputs				
Input control	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN, type 3 with 12-250 VDC/AC
Time format	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	hhhhh.hh; hhhh:mm:ss; (LCD) hhhh.hh; hh:mm:ss (LED)
Measuring principle	Accumulative and single Pulse- width or cycle duration measurement Start inp.A+ Stop inp.B Start/Stop Key	Accumulative and single Pulse- width or cycle duration measurement Start inp.A+ Stop inp.B Start/Stop Key	Accumulative and single Pulse- width or cycle duration measurement Start inp.A+ Stop inp.B Start/Stop Key	Accumulated measurement; Pulse-width
Reset input	PNP/NPN	PNP/NPN	PNP/NPN	NPN type 1+2, type 3 with 12-250 VDC/AC; NPN/PNP Type 4-5
Control inputs	Reset, Keylock, Hold, Teach, Set	Reset, Keylock, Hold, Teach, Set	Reset, Keylock, Hold, Teach, Set	Optional: Keylock or Display hold input
Output	With 1 or 2 relays and transistor outputs	With 1 or 2 relays and transistor outputs	With 1 or 2 relays and transistor outputs	Optional as transistor PNP or display
Page	50	50	50	47

Electronic Time Counters



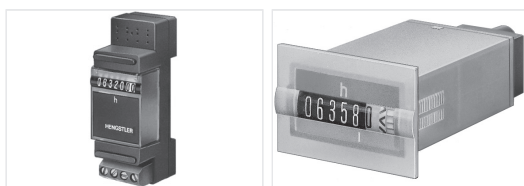
Type	tico 732	tico 734
Features	<ul style="list-style-type: none"> ■ Multifunctional, used as counter, tachometer, time counter, shift or batch counter ■ Voltage supply 12-24 VDC; 115 VAC, or 230 VAC ■ 6-digit LCD or LED display ■ Offering a variety of programmable functions ■ Without or with 1 or 2 presets ■ Offering many adjustable time ranges ■ Resolution up to 1 ms ■ Programmable keyboard lockout ■ Integrated sun totalizing counter 	<ul style="list-style-type: none"> ■ Totalizing counter with large 6-digit LCD display; illuminated ■ 4 different programmable time ranges ■ Voltage supply via exchangeable lithium cell ■ Small mounting depth ■ Expandable by a variety of module options ■ 10 versions of the same design are offering different functions
Technical Data		
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 93.5	72 x 36 x 36
Front panel cutout (mm)	45 x 45	68 x 33
Display	LCD 6-digit, 9 mm LED 6-digit, 7.6 mm	LCD 6-digit, 12 mm
Protection	IP 65	IP 65
Supply voltage	12-24 VDC, 24 VAC, 115 VAC, 230 VAC versions	Exchangeable Li battery
Inputs		
Input control	PNP/NPN	PNP/NPN
Time format	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	ssssss; mmmmm.m; hhhhh.h; hh:mm:ss; programmable
Measuring principle	Accumulated or single-pulse measurement; Pulse-width or period duration	Accumulated measurement; Pulse-width
Reset input	PNP/NPN	NPN
Control inputs	2 nd counter input and display input	Keylock input
Output	Without, or with 1 or 2 relays and transistor outputs	Optional as SSR output
Page	47	48

Electromechanical Time Counters



Type	Type 891	Type 891 DIN	Type 478	Type 633 DC
Features	<ul style="list-style-type: none"> ■ 7-digit display ■ Without reset function ■ DIN dimensions 48 x 24; 48 x 48 and 72 x 72 via adapter frame ■ Low-cost ■ Screw-type terminal connections 	<ul style="list-style-type: none"> ■ 7-digit display ■ Without reset function ■ DIN-rail mounting ■ Compact design ■ Low-cost ■ Screw-type terminal connections 	<ul style="list-style-type: none"> ■ 6- or 7-digit display ■ Manual reset function or without reset function ■ Plugs into modular system 400 ■ Easy to service 	<ul style="list-style-type: none"> ■ Small building dimensions ■ Low power consumption ■ Standard connections ■ Suitable for PCB mounting ■ Machine-solderable and washable ■ High shock resistance
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 24 x 40.5	48 x 70 x 49	50 x 25 x 75.5	25.2 x 31 x 14.6 30 x 20 x 40
Front panel cutout (mm)	45 x 22.5		50 x 25	27 x 14.2; only .8
No. of digits/	7	7	6 or 7, depending on version	7
Digit height	5 mm (visual)	5 mm (visual)	4 mm	4 mm (visual)
Protection	IP 66	IP 66	IP 40	IP 65
Pulse voltage	12-36 VDC; 24 VAC; 115 VAC; 230 VAC; further voltages available as options	12-36 VDC; 24 VAC; 115 VAC; 230 VAC; further voltages available as options	12 VDC; 24 VDC; 24 VAC; 115 VAC; 230 VAC; depending on version	5; 12; 24 VDC 5 - 30 VDC
Power consumption	DC 0.75 W; AC 0.7 VA	DC 0.75 W; AC 0.7 VA	Approx. 1 VA	Approx. 30 mW
Reset	None	None	None; manual - depending on version	None
Operating temperature	- 10...50 °C	- 10...50 °C	- 10...50 °C;	- 10...50 °C; optional - 40...+ 85 °C
Time format	hhhhh.hh	hhhhh.hh	hhhh.hh or hhhhh.hh	hhhhh.hh
Accessories	Panel frame adapter		Panel frame, connection box	
Dimensions (mm) (including panel frame)	54 x 29; 48 x 48; 52 x 52; 72 x 72; D 73; D 58		60 x 50 x 88	
Cutout (mm) (including panel frame)	50 x 25; 45 x 45; D 50; 68 x 68; D 50; D 50		55 x 29.5	
Page	58	58	60	59

Electromechanical Time Counters



Type	Type 633 DIN	Type 633 AC		
Features	<ul style="list-style-type: none"> ■ Suitable for DIN-rail mounting ■ Suitable for installation in switching cabinets ■ Screw-type terminal connections ■ Without reset function ■ Low power consumption 	<ul style="list-style-type: none"> ■ Small AC voltage meter ■ Low power consumption ■ Simple installation ■ Protection class IP 65 ■ Screw-type terminal connections or cable connections 		
Technical Data				
Dimensions (mm) (Width x Height x Depth)	25.5 x 68.5 x 28	30 x 20 x 56		
Front panel cutout (mm)		27 x 14.4		
No. of digits	7	6		
Digit height	4 mm (visual)	4 mm (visual)		
Protection	IP 10	IP 66		
Pulse voltage	5, 12 or 24 VDC, depending on version	24, 115, 230 VAC		
Power consumption	Approx. 250 mW	0.08 -1 VA		
Operating temperature	0...60 °C	- 10...50 °C		
Time format	hhhhh.hh	hhhhh.h		
Accessories		Panel frame		
Page	59	59		

Electronic Preset Time Counters



Type	tico 772	tico 773	tico 774	tico 732
Features	<ul style="list-style-type: none"> ■ Universally applicable as counter, tachometer, timer, shift-counter or batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ For the first time the intensity of the backlight is adjustable ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals ■ 3 Presets 	<ul style="list-style-type: none"> ■ Programmable via USB-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Programmable via RS232-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Multifunctional, used as counter, tachometer, time counter, shift or batch counter ■ Voltage supply 12-24 VDC; 115 VAC, or 230 VAC ■ 6-digit LCD or LED display ■ Variety of programmable functions ■ Without presets or with 1 or 2 presets ■ Variety of adjustable time ranges ■ Resolution up to 1 ms ■ Programmable keyboard lock ■ Integrated sum totalizing counter
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118	48 x 48 x 93.5
Front panel cutout (mm)	45 x 45	45 x 45	45 x 45	45 x 45
Display	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	LCD 6-digit, 9 mm LED 6-digit, 7.6 mm
Protection	IP 65 frontside	IP 65 frontside	IP 65 frontside	IP 65 frontside
Supply voltage	12-30 VDC, 24 VAC, 230 VAC; 90-260 VAC	12-30 VDC; 90-260 VAC	12-30 VDC; 90-260 VAC	12-24 VDC, 115 VAC, 230 VAC versions
Inputs				
Input control	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Time format	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	Sec, min, hours, decimal point up to 0.000 or programmable format hh:mm:ss	Sec., min, hours, with decimal point up to 0.000; or programmable format hh:mm:ss
Measuring principle	Accumulative and single Pulse- width or cycle duration measurement Start inp. A+ Stop inp. B Start/ Stop Key	Accumulative and single Pulse- width or cycle duration measurement Start inp. A+ Stop inp. B Start/ Stop Key	Accumulative and single Pulse- width or cycle duration measurement Start inp. A+ Stop inp. B Start/ Stop Key	Accumulated or single-pulse measurement; Pulse width or period duration
Reset input	manuel reset via keyboard	PNP/NPN	PNP/NPN	PNP/NPN
Control inputs	Reset, Hold, Keylock, Teach, Set	Reset, Hold, Keylock, Teach, Set	Reset, Hold, Keylock, Teach, Set	Display hold input Display buffer input
Output	With 1 or 2 relays and transistor outputs	With 1 or 2 relays and transistor outputs	With 1 or 2 relays and transistor outputs	Without, or with 1 or 2 relays and transistor outputs
Page	50	50	50	47

Electronic Preset Time Counters



General information

Type		tico 734		
Features	<ul style="list-style-type: none"> ■ Preset counter with ■ Totalizing counter with large, 6-digit LCD display; illuminated ■ Different time, 4 ranges programmable ■ Voltage supply via exchangeable lithium cell ■ Small mounting depth ■ Expandable by a variety of module options ■ 10 versions offering different functions (same design) 			
Technical Data				
Dimensions (mm) (Width x Height x Depth)	72 x 36 x 36			
Front panel cutout (mm)	68 x 33			
Display	LCD 6-digit, 12 mm			
Protection	IP 65			
Supply voltage	Exchangeable Li battery			
Inputs				
Input control	PNP/NPN			
Time format	sssss; mmmm.m; hhhh.h; hh:mm:ss; programmable			
Measuring principle	Accumulated measurement Pulse width			
Reset input	NPN			
Control inputs	Keylock Keyboard lock			
Output	As SSR output			
Page	48			

Electromechanical Preset Time Counters



Type	Type 489			
Features	<ul style="list-style-type: none"> ■ Adding preset time counter ■ 5-digit display with permanently visible preset ■ Manual reset ■ Display up to 9999.9 hours ■ Plugs into modular system 400 ■ Easy to service 			
Technical Data				
Dimensions (mm) (Width x Height x Depth)	50 x 50 x 92.5			
Front panel cutout (mm)	50 x 50			
No. of digits	5			
Digit height	4 mm			
Protection	IP 40			
Pulse voltage	24 VDC, 24, 115, 230 VAC			
Power consumption	1 VA / W			
Reset	Manual			
Operating temperature	- 10...50 °C			
Time format	hhhh.h			
Accessories	Panel frame, connection box			
Dimensions, including panel frame (mm)	60 x 75 x 88			
Front panel cutout (mm)	55 x 55			
Page	60			

Electronic Tachometers



General information

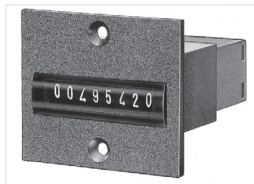
Type	tico 772	tico 773	tico 774	tico 731
Features	<ul style="list-style-type: none"> ■ Universally applicable as counter, tachometer, timer, shift-counter or batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ For the first time the intensity of the backlight is adjustable ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals ■ 3 Presets 	<ul style="list-style-type: none"> ■ Programmable via USB-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Programmable via RS232-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Small, compact, 5 different versions ■ Voltage supply via lithium cell or 12-24 VDC ■ 8-digit LCD or 6-digit LED display ■ Display as Pulses/min. ■ Type 1 and 2 with gate measuring principle; Type 4 and 5 with faster and more accurate period length measuring principle ■ Optional with prescaling function
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 24 x 118	48 x 48 x 118	48 x 48 x 118	48 x 24 x 32 short 48 x 24 x 60 long
Front panel cutout (mm)	45 x 45	45 x 45	45 x 45	45 x 22.5
Display	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	LCD 8-digit, 7 mm LED 6-digit, 7.6 mm
Protection	IP 65 frontside	IP 65 frontside	IP 65 frontside	IP 54
Supply voltage	12-30 VDC, 24 VAC, 115 VAC, 230 VAC; 90-260 VAC	12-30 VDC; 90-260 VAC	12-30 VDC; 90-260 VAC	Li battery, type 1+3, 12-24 VDC
Inputs	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Frequency	up to 60 kHz	up to 60 kHz	up to 60 kHz	7.5 kHz / 30 Hz
Prescaling factor	0.0001 - 99,9999	0.0001 - 99,9999	0.0001 - 99,9999	Optional, 0.001-99.999
Measuring principle	period (cycle) measurement 1 / Tau	period (cycle) measurement 1 / Tau	period (cycle) measurement 1 / Tau	Gate time Type 1+2; period length measurement; 1 / Tau Type 4+5
Display	1/min or 1/s	1/min or 1/s	1/min or 1/s	1/min.
Reset input	PNP/NPN	PNP/NPN	PNP/NPN	NPN type 1+2, NPN/PNP Type 4-5
Control inputs	Gate, Keylock, Teach 2 nd counter input and display input	Gate, Keylock, Teach 2 nd counter input and display input	Gate, Keylock, Teach 2 nd counter input and display input	Optional: keylock or display hold input
Evaluation	count input, counting direction, A-B, A+B, A/B Phase discriminator	count input, counting direction, A-B, A+B, A/B Phase discriminator	count input, counting direction, A-B, A+B, A/B Phase discriminator	Counter input
Output	with 1 or 2 relays and 2 transistor outputs and application output	with 1 or 2 relays and 2 transistor outputs and application output	with 1 or 2 relays and 2 transistor outputs and application output	
Page	50	50	50	46

Electronic Tachometers



Type	tico 732	tico 734	signo 722
Features	<ul style="list-style-type: none"> ■ Multifunctional, used as counter, tachometer, time counter, shift or batch counter ■ Voltage supply 12-24 VDC; 115 VAC, or 230 VAC ■ 6-digit LCD or LED display ■ Variety of programming functions ■ Without preset or with 2 limit values ■ Display as pulses/sec. or pulses/min. ■ Programmable start-up suppression ■ Principle of period length measurement 	<ul style="list-style-type: none"> ■ Tachometer with large, 4-digit LCD display; illuminated ■ 4 versions frequency display, scaleable tachometer, tachometer with totalizing counter; and tachometer with totalizing counter and pulse output ■ Voltage supply via exchangeable lithium cell ■ Small mounting depth ■ Expandable by a variety of module options ■ 10 versions offering different functions (same design) 	<ul style="list-style-type: none"> ■ Large 5-digit LED display; digit height 14 mm ■ Frequency range 1/min. - 10000/s ■ Prescaling function 0.001 - 9.999; expandable via divisor ■ Easy to service by means of plug-type screw terminals ■ Programmable start-up suppression ■ With or without limit values for frequency monitoring
Technical Data			
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 93.5	72 x 36 x 36	96 x 48 x 108
Front panel cutout (mm)	45 x 45	68 x 33	92 x 45
Display	LCD 6-digit, 9 mm LED 6-digit, 7.6 mm	LCD 4-digit tachometer Optional: 8-digit totalizing counter; 12 mm	LED 5-digit, 14 mm
Protection	IP 65	IP 65	IP 54
Supply voltage	12-24 VDC, 24 VAC, 115 VAC, 230 VAC versions	Exchangeable Li battery	12-24 VDC
Inputs			
Input control	PNP/NPN	PNP/NPN	PNP
Frequency	5 kHz / 30 Hz	10 kHz / 30 Hz	10 kHz / 30 Hz
Prescaler	0.001-999.999	Optional 0.001-9999	0.001 - 9.999 and divisor 0-9999
Measuring principle	Period length measurement, 1/Tau	Period length measurement, 1/Tau	Period length measurement, 1/Tau
Time Base	1/sec. or 1/min	1/sec.	1/min. or 1/sec.
Reset input	PNP/NPN	NPN	PNP
Control inputs	2 nd counter input and gate input	Keylock	Keylock and display hold input
Evaluation	Counter input, direction A-B, A+B; phase discriminator	Counter input	Counter input
Output	None; or 2 relay and transistor outputs	Optional as SSR output for pulse scaler	None, or 2 relays
Page	47	48	52

Pneumatic Totalizing, Preset and Preset Time Counters



General information

Type	Type 495, Integrated	Type 495 for surface-mounting	Type 497	Type 497
Features	<ul style="list-style-type: none"> ■ Integrated totalizing counter ■ 6-digit or 8-digit display ■ Manual reset, pneumatic reset, or without reset function ■ Hose coupler or rapid-fit connector ■ Easy to install ■ Maintenance-free operation 	<ul style="list-style-type: none"> ■ Surface-mount totalizing counter ■ 6-digit display ■ Manual or pneumatic reset ■ Hose coupler or rapid-fit connector ■ Easy to mount ■ Maintenance-free operation 	<ul style="list-style-type: none"> ■ Integrated preset counter ■ Adding or subtracting ■ 3-digit or 5-digit display ■ Integrated pneumatic reset ■ Convenient button setting ■ Adding; with continuously visible preset 	<ul style="list-style-type: none"> ■ Integrated preset time counter ■ 3-digit or 5-digit display ■ Integrated pneumatic reset ■ Convenient button setting ■ Hose coupler or rapid-fit connector ■ Continuously visible preset
Technical Data				
Dimensions (mm) (Width x Height x Depth)	60 x 51 x 65	53 x 100 x 26	60 x 75 x 62	60 x 75 x 122
Front panel cutout (mm)	52 x 26		52 x 52	52 x 52
Display	8-digit 4 mm 6-digit 4 mm	6-digit, 4 mm	3-digit 4 mm 5-digit 4 mm	3-digit 4 mm 5-digit 4 mm
Operating pressure	2-8 bar	2-8 bar	2-8 bar	2-8 bar
Air	Filtered (< 40 µm) oil-free	Filtered (< 40 µm) oil-free	Filtered (< 40 µm) oil-free	Filtered (< 40 µm) oil-free
Inputs				
Count input	Adding	Adding	Adding, subtracting; depending on version	Adding
Frequency/Time format	25 Hz / 8 ms	25 Hz / 8 ms	20 Hz / 8 ms	Seconds, minutes, depending on version
Options	Hose coupler M5; or rapid-fit connector	Hose coupler M5, or rapid-fit connector	With automatic reset; hose coupler M5, or rapid-fit connector	With automatic reset; hose coupler M5, or rapid-fit connector
Reset input	Manual, pneumatic, or without reset function	Manual or pneumatic	Manual, pneumatic or automatic	Manual, pneumatic or automatic
Output			On reaching the preset/zero value	On reaching the preset value
Page	66	66	67	67

Pneumatic Timers, Proximity Switches



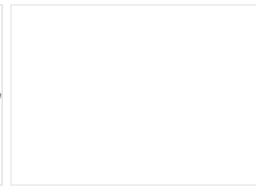
Type	Type 499 Timer	Reset Module	Proximity Switch
Features	<ul style="list-style-type: none"> ■ Integrated timer; optional for DIN-rail mounting ■ DIN-dimensions ■ Small mounting dimensions ■ No continuous air supply required ■ Stationary preset value ■ 0.2 to 300 seconds 	<ul style="list-style-type: none"> ■ Integrated reset module for timers ■ Enables automatic timer sequences ■ DIN dimensions ■ Small mounting dimensions ■ Stationary preset ■ Output signal adjustable from 0.2 - 2 seconds 	<ul style="list-style-type: none"> ■ Non-contact actuation ■ Small mounting dimensions ■ Can be actuated by magnetic field and iron (Fe) ■ No continuous air consumption
Technical Data			
Dimensions (mm) (Width x Height x Depth)	24 x 48 x 60	24 x 48 x 60	18.2 x 40.3 x 19.6
Front panel cutout (mm)	22.2 x 45	22.2 x 45	
Display	Digit roll	Digit roll	
Operating pressure	2-6 bar	2-6 bar	2-6 bar
Air	Filtered (<40 µm) oil-free	Filtered (< 40 µm) Oil-free; light oil mist is permissible	Filtered (< 40 µm) Oil-free; light oil mist is permissible
Inputs			
Start input	Timer is started as soon as input is pressurized	Time starts elapsing as soon as the input is pressurized	Magnetic field and Fe actuation
Time range	0.2-3 s; 2-30 s, 8-120 s; 20-300 s; depending on version	0.2 - 2 s	Actuating distance Fe: approx. 2 mm
Options	Hose coupler M5 or rapid-fit connector; DIN-rail mounting	Hose coupler M5, or rapid-fit connector	Strap retainer attachment
Reset	By interrupting the air intake		
Output			
	After the set time has elapsed, input 1 is con- nected to output 2	Interrupts the output for approx. 300 ms after the set time value has elapsed	Upon actuation by magnetic field or Fe
Page	68	68	67

Electronic Position Indicators



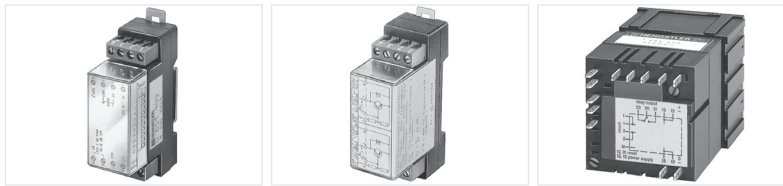
Type	tico 772	tico 773	tico 774	tico 731.4/tico 731.5
Features	<ul style="list-style-type: none"> ■ Universally applicable as counter, tachometer, timer, shift-counter or batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ For the first time the intensity of the backlight is adjustable ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz ■ Easy installation due to pluggable terminals ■ 3 Presets 	<ul style="list-style-type: none"> ■ Programmable via USB-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Programmable via RS232-Interface ■ Reduces downtimes and enhances technical support ■ Free programming assistant as download available ■ Universally applicable as tachometer, timer shift-counter, batch-counter ■ Most simple handling ■ 4 different coloured backlight versions (green, red, black, white) ■ Impressive, clearly readable display in 48x48mm ■ input frequency up to 60 kHz 	<ul style="list-style-type: none"> ■ Small, compact, 5 different versions ■ Voltage supply 12-24 VDC ■ 8-digit LCD or 6-digit LED display ■ Optional with prescaling and decimal point function
Technical Data				
Dimensions (mm) (Width x Height x Depth)	48 x 48 x 118	48 x 48 x 118	48 x 48 x 118	48 x 24 x 60
Front panel cutout (mm)	45 x 45	45 x 45	45 x 45	45 x 22.5
Display	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 9,3 mm 2. Line 7,2 mm	LCD 8-digit, 7 mm LED 6-digit, 7.6 mm
Protection	IP 65 frontside	IP 65 frontside	IP 65 frontside	IP 65 frontside
Supply voltage	12-30 VDC; 24 VAC; 115 VAC 230 VAC; 90-260 VAC	12-30 VDC; 90-260 VAC	12-30 VDC; 90-260 VAC	12-24 VDC
Temperature range	0-50 °C			-10-50 °C
Inputs				
Input control	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Frequency	2 kHz			2 kHz
Count Mode	Phase discriminator (single, double or quadruple evaluation)	Phase discriminator (single, double or quadruple evaluation)	Phase discriminator (single, double or quadruple evaluation)	Phase discriminator (single)
Prescaling factor	0,0001 - 99,9999	0,0001 - 99,9999	0,0001 - 99,9999	Optional 0.001-99.999
Reset input	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Control inputs	Reset, Gate, Hold, Keylock, Teach, Set	2 nd counter input and display input	2 nd counter input and display input	
Output	With 1 or 2 relays and transistor outputs	With 1 or 2 relays and transistor outputs	With 1 or 2 relays and transistor outputs	
Page	50	50	50	47

Electronic Position Indicators



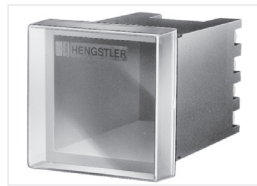
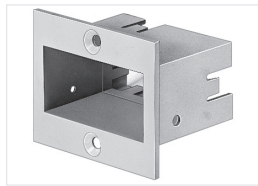
Type	tico 734	signo 727		
Features	<ul style="list-style-type: none"> ■ Position indicator with large dual-color, 8-digit LCD display; illuminated ■ Reproducible, freely selectable set value ■ Programmable prescaling and decimal point functions ■ Voltage supply via exchangeable Li cell ■ Small mounting depth ■ Expandable by a variety of optional modules ■ 10 versions of the same design offering different functions 	<ul style="list-style-type: none"> ■ Large 6-digit LED display, digit height 14 mm ■ Voltage supply 12-24 VDC or 115/230 VAC ■ Plug-in screw terminal connections ■ Very high counting frequency up to 40 kHz ■ Without, or with 2 limit values (as relay and transistor) ■ Indication of chain values or absolute values ■ Optional with RS 232 or RS 485 interface 		
Technical Data				
Dimensions (mm) (Width x Height x Depth)	72 x 36 x 36	96 x 48 x 108		
Front panel cutout (mm)	68 x 33	92 x 45		
Display	LCD 8-digit, 12 mm illuminated	LED 6-digit, 14 mm		
Protection	IP 65	IP 54		
Supply voltage	Lithium battery, exchangeable	12-24 VDC; 24 VAC or 100-240 VAC		
Temperature range	0-50 °C	0-50 °C		
Inputs				
Input control	PNP/NPN	PNP/NPN		
Frequency	10 kHz / 30 Hz	40 kHz / 30 Hz		
Count Mode	Phase discriminator (single)	Phase discriminator (single, dual, quadruple)		
Prescaling factor	Optional 0.001-99.9999	0.0001-99.999		
Set value	Programmable	Programmable		
Reset input	NPN	PNP/NPN		
Control inputs	Keylock	Keylock; display hold and reset enable		
Output		Without, or with 2 relay and transistor outputs		
Page	48	51		

Accessories



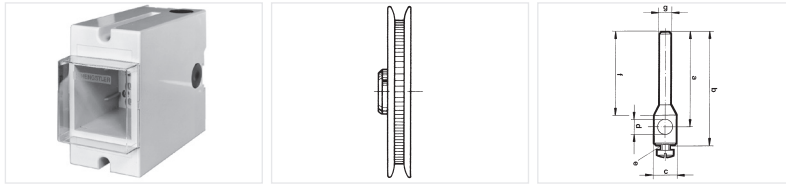
Type	651 Pulse Scaler DIN-rail	654 Pulse Amplifier	Reset Module for Preset Counters
Features	<ul style="list-style-type: none"> ■ Programmable pulse scaling factor up to 2047:1 ■ NAMUR generator input ■ DIN-rail attachment ■ PNP transistor output ■ Can be used as pulse shaper 	<ul style="list-style-type: none"> ■ Programmable pulse scaling factor up to 1000:1 ■ NAMUR generator input ■ Plugs into and combines with modular system 400 ■ Transistor output PNP/NPN ■ Pulse frequency up to 5 kHz 	<ul style="list-style-type: none"> ■ Automatic reset for preset counters 446,447,486,487, and preset time counter 489, with electrical reset ■ Plugs into modular system 400 ■ Integrated connection box
Technical Data Dimensions (mm) (Width x Height x Depth)	22.6 x 68.5 x 48	50 x 25 x 92.5	51 x 51 x 121 with plugged-in counter 50 x 50
Front panel cutout (mm)		50 x 25	50 x 50
Programming	Via DIP switches	Via jumpers	
Protection	IP 20	IP 20	IP 00
Supply voltage	10-30 VDC	24 VDC	24 VDC; 24 VAC; 115 VAC or 230 VAC
Inputs			
Input control	PNP or NAMUR	PNP, optional: NAMUR	Depending on version
Frequency/signal length	5 kHz / 30 Hz	5 kHz / 50 Hz	Changeover contact, max. 220 V,
Scaling factor	Up to 2047:1	Up to 1000:1	DC max. 1 per s
Reset input	PNP	PNP	AC max. 1 per 2 s
Output	PNP transistor 0.2 ms - 2 s; adjustable depending on version 100 mA	PNP/NPN transistor programmable, 25 ms; 400 mA	
Accessories		Socket (connection box), panel frame	
Page	69	69	69

Accessories



Type	Panel Frame	Adapter Panel Frame	Protective Cases	Sealing Covers and Transparent Covers
Features	<ul style="list-style-type: none"> ■ Integrated panel frame for modular system 400 ■ Sizes 1-5 ■ Combines with components of the modular system 	<ul style="list-style-type: none"> ■ Adapter panel frames for tico and signo DIN counters ■ To adapt to different DIN sizes and cutout dimensions 	<ul style="list-style-type: none"> ■ Protective case with screw-type terminals ■ Screw or clamp mounting ■ Version with translucent cover is available 	<ul style="list-style-type: none"> ■ Sealing covers for modular system 400 ■ Easy to install ■ Protection class IP 65/66
Technical Data Dimensions (mm) (Width x Height x Depth)	60 x 50 x 47 size 1 60 x 75 x 47 size 2 60 x 100 x 71 size 3 60 x 125 x 71 size 4	60 x 50 to 48 x 24 72 x 72 to 48 x 48 60 x 75 to 48 x 48 125 x 60 to 96 x 48 60 x 75 to 2 pieces 48 x 24 60 x 100 to 48 x 24 and 48 x 48	63 x 38 x 99 for size 1 63 x 63 x 99 for size 2 60 x 50 x 85 for size 1 60 x 75 x 75 for size 2	For 60 x 50 size 1 and 60 x 75 size 2 Front panels
Front panel cutout (mm)	54 x 29.5 size 1 54 x 54 size 2 55 x 82 size 3 55 x 106 size 4	55 x 29.2 size 1 68 x 68 DIN 54 x 54 size 2 106 x 55 size 4 54 x 54 size 2 55 x 82 size 3	55 x 29.5 size 1 55 x 55 size 2	
Protection class			IP 52 with translucent cover	IP 65/66
Page	70	71	73	74

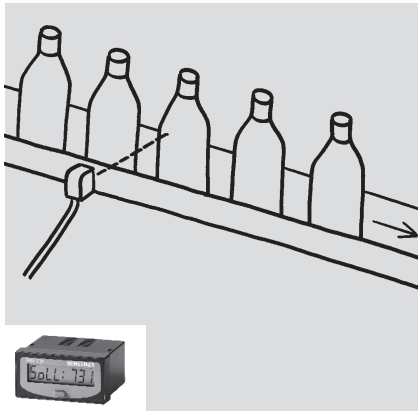
Accessories



Type	Case 680	Measuring Wheels	Stroke Levers	Further Accessories
Features	<ul style="list-style-type: none"> ■ For DIN-rail mounting or attachment by means of screws ■ Case made of insulating material ■ Installation of counters of the modular system 400 in protective case size 2 	<ul style="list-style-type: none"> ■ Different, practice-oriented circumference versions ■ Different shaft diameters ■ Surfaces adapted to the material measured 31.5–38 x 26.5 x 75 	<ul style="list-style-type: none"> ■ Different stroke lever shapes ■ Adapted to individual fields of application ■ Compatible with mechanical stroke counters 	<ul style="list-style-type: none"> ■ Blind caps ■ Spark quenching ■ Mounting frames for Type 225 and 250 ■ Flat connector ■ Flat steel bar for modular system 400
Technical Data Dimensions (mm) (Width x Height x Depth)	65 x 110 x 136	Depending on version	Depending on version	
Page	75	76	78	72/79

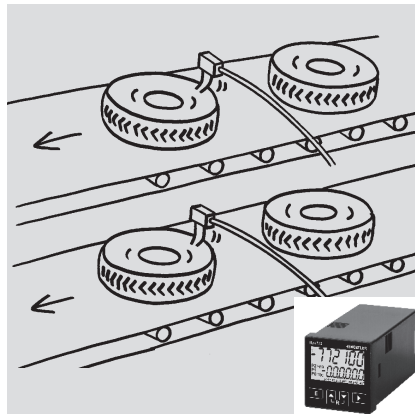
Notice

Examples of the versatile use of Hengstler products.....



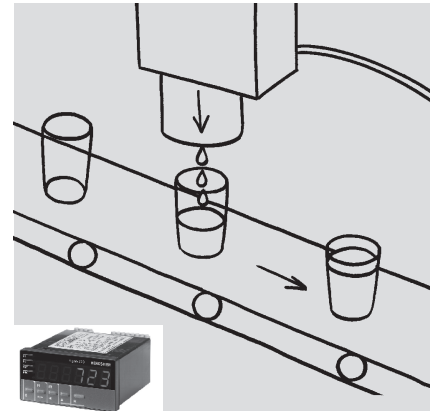
■ Piece/quantity counting by means of proximity switches, light barriers, reflectance light barriers, or switches.

For the detection of unit numbers, e.g. screws, nails, bottles, single packs, or other production units that have to be counted. Detection is possible by electronic or electromechanical counters.



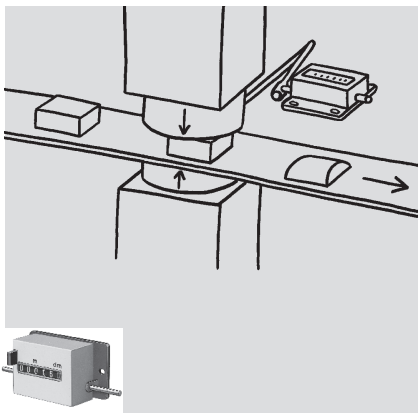
■ Shift-counting of unit numbers or totalizing counts of 2 production lines

Piece-counting of production units under shift-operation conditions, or counting of two parallel production lines, thereby indicating single shift values and the total unit number.



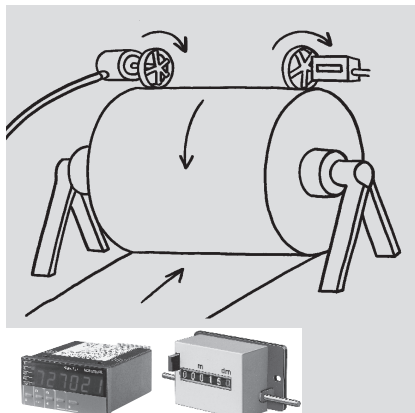
■ Dosing and Filling

Flow meters and a preset counter allow controlled and accurate filling or dosing of liquid media.



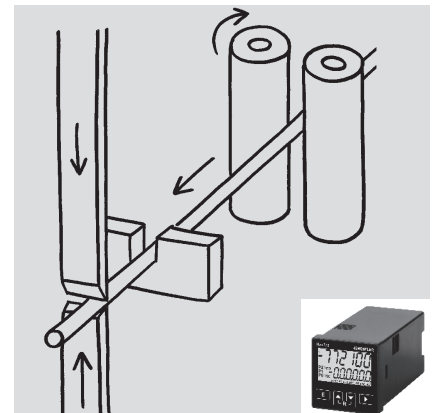
■ Piece and/or stroke counting for punches or presses

Helps determine the downtimes of tools or detect unit numbers by means of mechanical stroke counters or non-contact magnetic counters.



■ Length measuring by means of angular encoders, proximity switches, light barriers or mechanical counters.

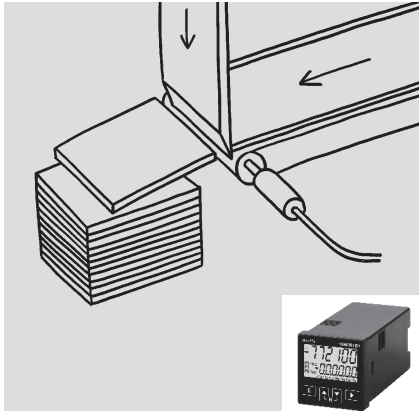
For length measuring of cables, foils, fabrics, metals, bands, ropes, paper, etc. The measured length is detected by a measuring wheel or directly on the roller/drum and indicated electronically or mechanically.



■ Cutting of cables, threads and yarns by means of angular encoders and preset counters.

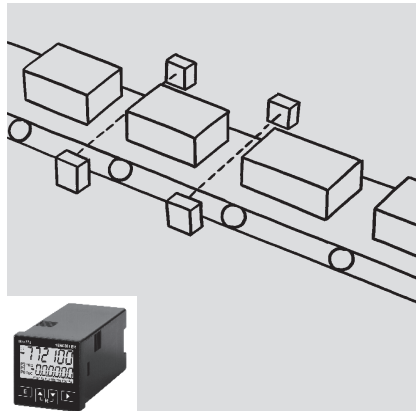
Use the preset counter for length control. Counters exhibiting two presets allow selecting between fast and slow positioning in order to achieve accurate length values.

Examples of the versatile use of Hengstler products.....



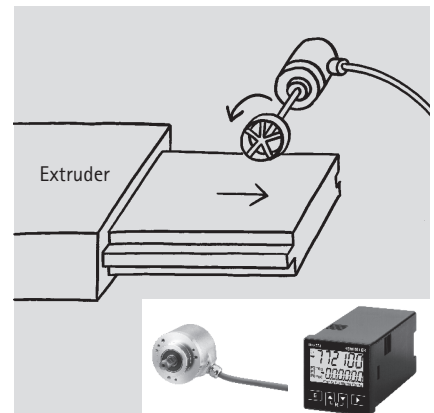
■ Cutting and stacking of foils/films, bands/strips, metals, paper, carton, etc. by means of batch counters.

Preset counter for length control – also available with fast/slow positioning. Control of piece numbers via an integrated batch counter.



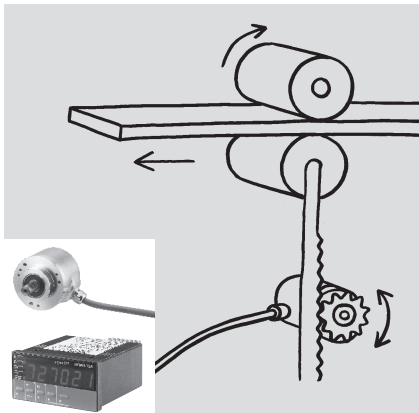
■ Measuring of assembly and manufacturing times or – in the sports sector – the times of a race or competition, by means of a short-duration timer; resolution down to milliseconds

Timing as accurate as that of quartz timers – pulse width or period length functions for all fields of application. Optional preset functions are available for controlling.



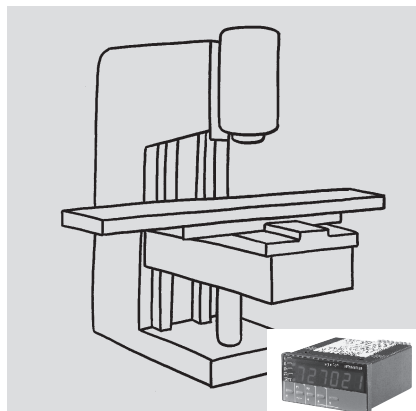
■ Speed measurements and monitoring of length controls of extruders

Angle encoders or initiators enable the detection, control and monitoring of the forward feed speed or length of plastic or metal profiles.



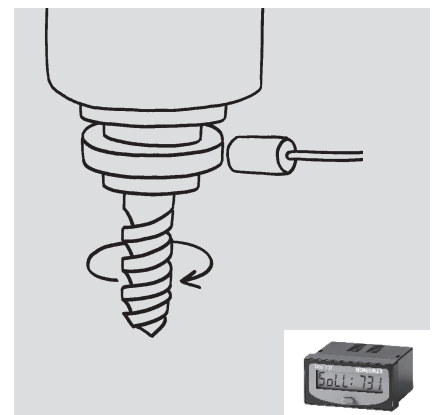
■ Thickness measurement of plates, cables, films, etc. by means of encoders and limit-value counters

A simple mechanical principle converts material thickness into a rotating movement. A limit-value counter evaluates the thickness and signals warning messages if values are exceeded or fallen below.



■ Position indication with limit values to protect lateral stops

Position indication with absolute or incremental encoder for convenient workpiece machining. With digital display.



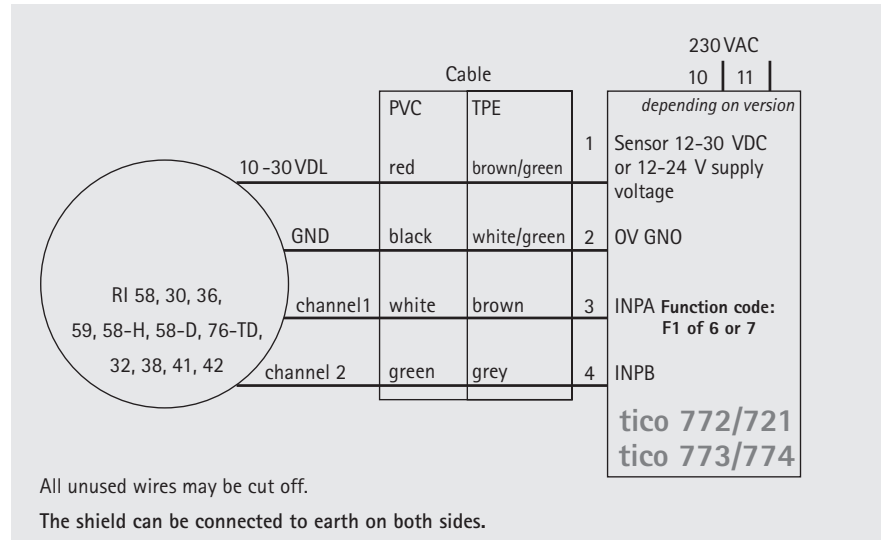
■ Speed monitoring of machine tools

Detection of the workpiece speed by means of a tachometer; monitoring of the speed is possible by means of min. and max. limit values.

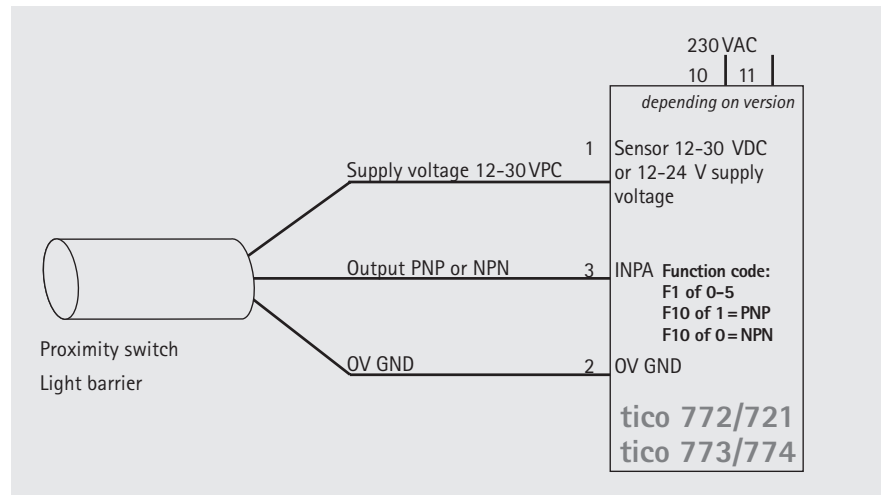
Electronic Counters

Connection Examples

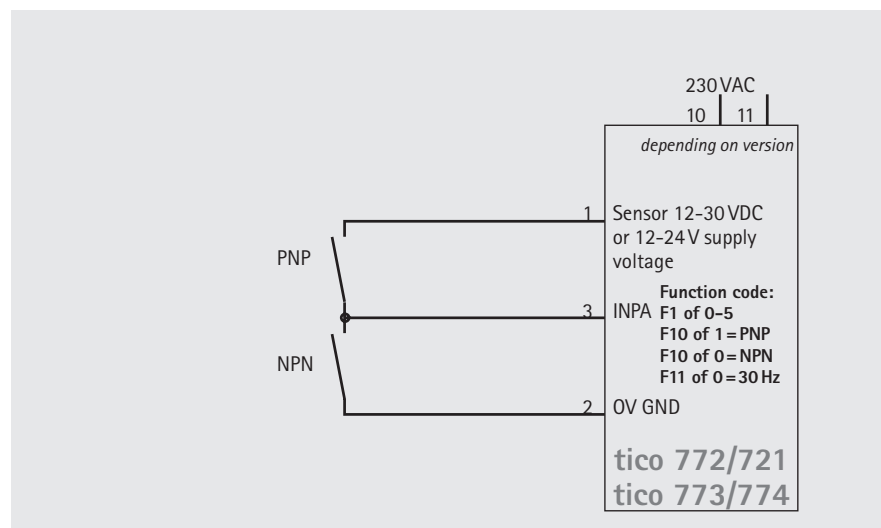
TICO 772/721
with encoder
RI 30, 32, 36, 38, 41, 42, 58,
58-H, 58-D, 59, 76-TD



TICO 772/721
with proximity switch
or light barrier



TICO 772/721
with contact activation

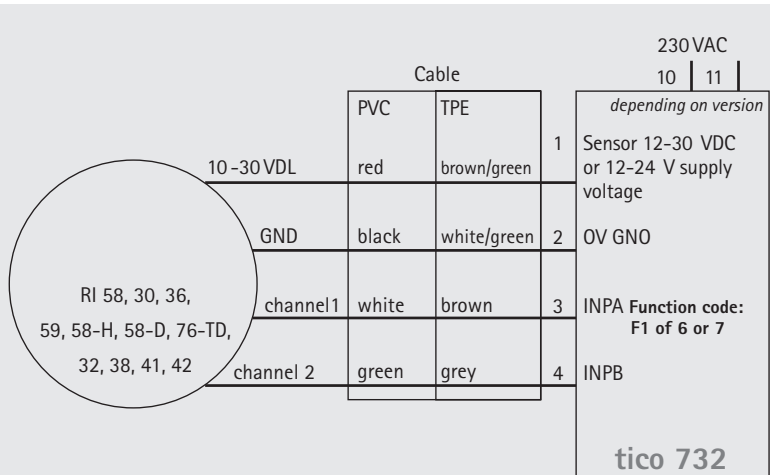


Applications

Electronic Counters

Connection Examples

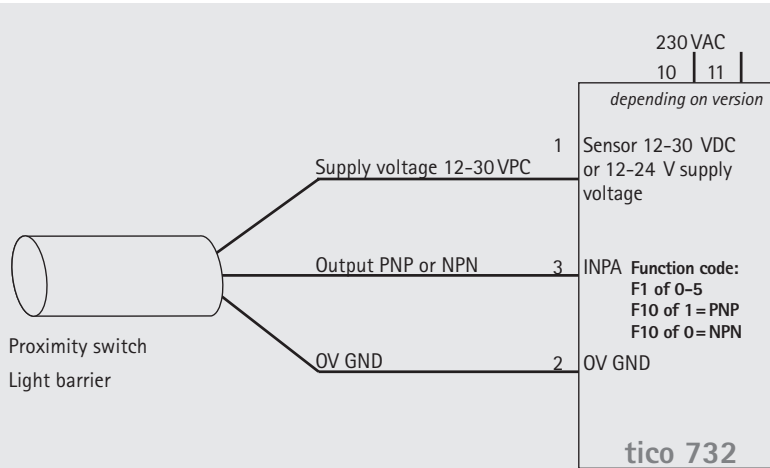
TICO 732
with encoder
RI 30, 32, 36, 38, 41, 42, 58,
58-H, 58-D, 59, 76-TD



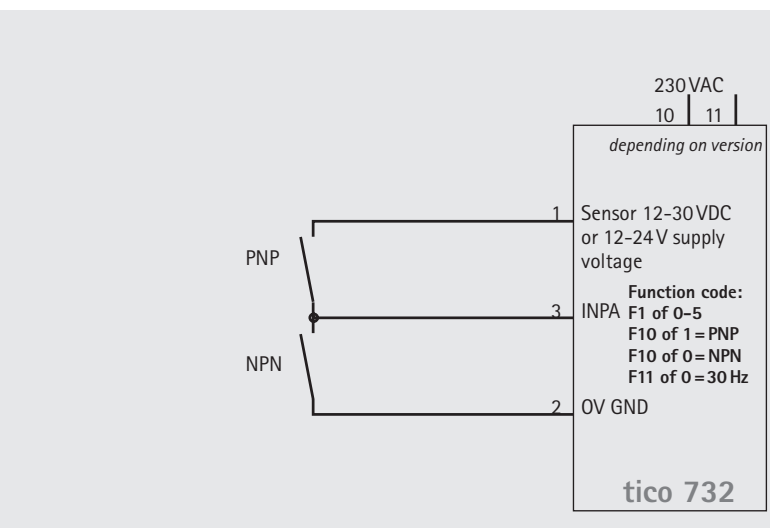
All unused wires may be cut off.

The shield can be connected to earth on both sides.

TICO 732
with proximity switch
or light barrier



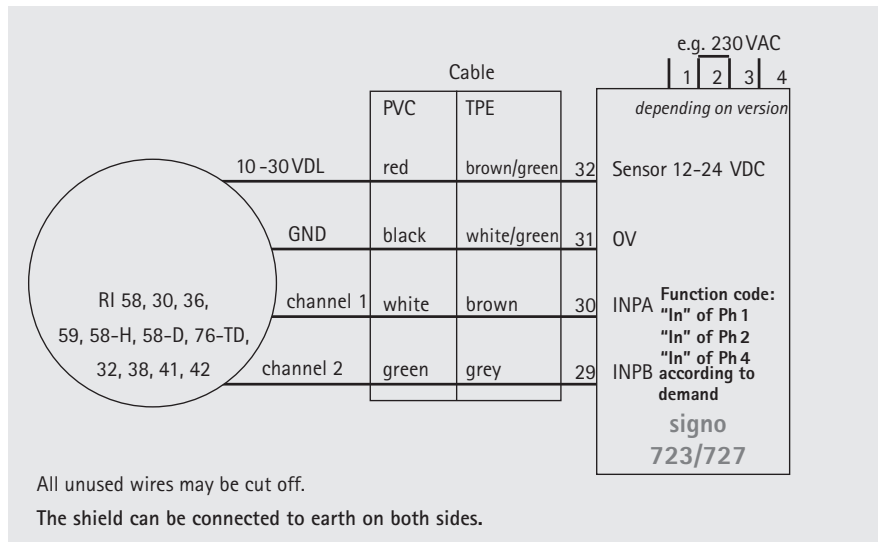
TICO 732
with contact activation



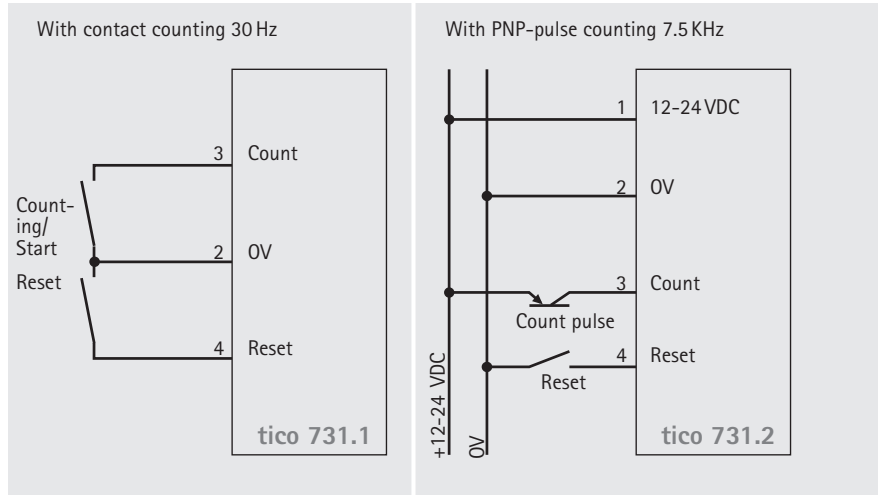
Electronic Counters

SIGNO 723/727
with encoder
RI 30, 32, 36, 38, 41, 42, 58,
58-H, 58-D, 59, 76-TD

Connection Examples



TICO 731

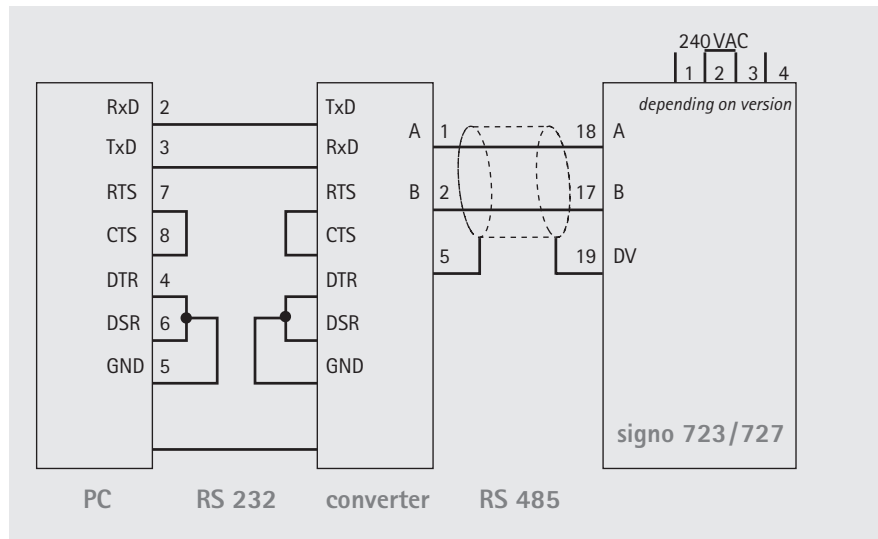


Applications

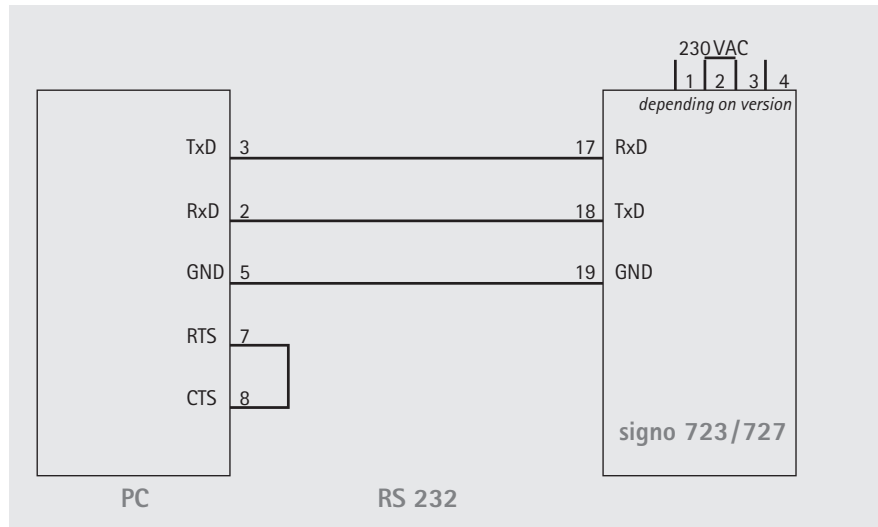
Interface

SIGNO 723/727
with RS 485 on Converter
with RS 232 on PC

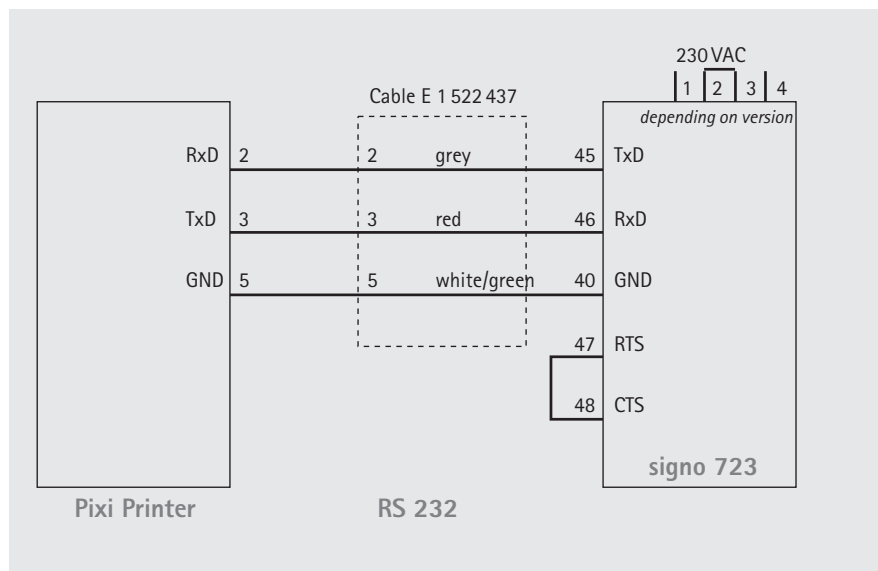
Connection Examples



SIGNO 723/727
with RS 232 on PC



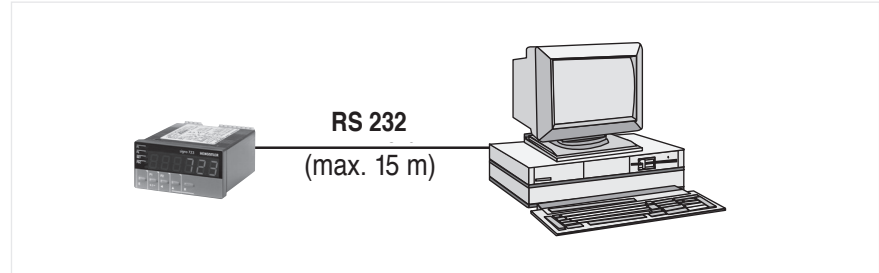
SIGNO 727
on Pixi-Printer



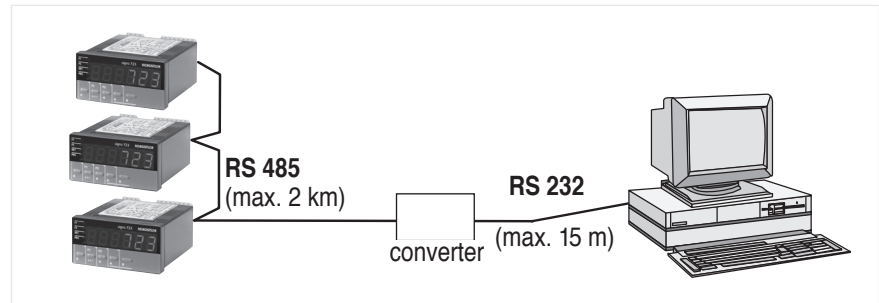
Counters with Interface

EXAMPLE 1:
One counter connects to PC or modem

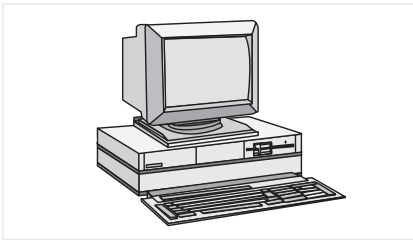
Choosing the counters to fit the application



EXAMPLE 2:
Up to 31 counters connect to an converter or PLC via RS 485. converter connects to PC or modem



1. COMMUNICATION WITH PC OR IPC



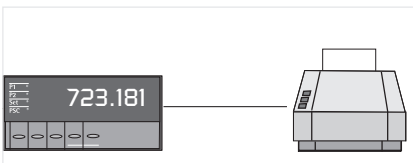
Type	Interface	Protocol	Function
signo 723.1	RS 485 / RS 232	Hengstler TP3	read and write
signo 727.1	RS 485 / RS 232	Hengstler TP3	read and write
signo 723.1	RS 232	ASCII printer protocol	read
tico 773	USB	ASCII protocol	read and write
tico 774	RS232	ASCII protocol	read and write

2. COMMUNICATION WITH PLC



Type	Interface	Protocol	Function
signo 723.1	RS 232	ASCII printer protocol	read
tico 773	USB	ASCII protocol	read and write
tico 774	RS232	ASCII protocol	read and write

3. COUNTER WITH PRINTER CONNECTION

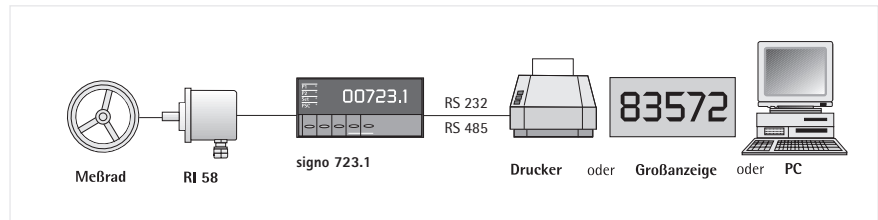


Counter
Type signo
Ordering code 0 723 .1
with printer interface

Type	Interface	Protocol	Function
signo 723.1	RS 232	ASCII printer protocol	send to printer

Length Measurement Systems

SYSTEM OVERVIEW



APPLICATIONS

EXAMPLE

These systems are used where length measurement is the main component or a part of the manufacturing process.

- Length measurement of tile materials such as stone tiles, wood etc.
- Length measurement of band materials such as fabrics (carpets, foil, paper)
- Length measurement of cable, wire, thread etc.

SHORT DESCRIPTION OF TECHNICAL COMPONENTS

■ Counters

	tico 772/773/774	signo 721	tico 732	signo 723.1
Display	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 12,0 mm 2. Line 6,0 mm	LED or LCD, 6-digit, 1 line, digit height 7 mm	LED, 6-digit 1 line, digit height 14 mm
Function	prescaler, 3 presets Totalizing -, Preset-, Batch- or Shiftcounter	prescaler, 2 presets Totalizing -, Presetcounter	prescaler, 2 presets Totalizing -, Preset-, Batch- or Shiftcounter	2 presets
Resolution	at user's choice ; e.g. (unit mm, cm, inch, foot)	at user's choice ; e.g. (unit mm, cm, inch, foot)		at user's choice; e.g. (unit mm, dm, cm etc.)
Outputs	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs	encoder supply	2 changeover relays 2 transistor outputs
Dimensions	DIN 48 x 48 mm	DIN 48 x 48 mm	DIN 48 x 48 mm	DIN 48 x 96 mm
Supply	12-30 DC 24 VAC; 115 VAC; 230 VAC; 90-260 VAC	12-30 DC 24 VAC; 115 VAC; 230 VAC; 90-260 VAC	12-24 VDC or 115 or 230 VAC	115/230 VAC or 12-24 VDC
Interface option	none/RS232/USB	none	none	RS 232 for printer/ panel display or communication with PC. RS 485 for communi- cation with PC

Length Measurement Systems

■ Counters

	tico 772/773/774	signo 721	tico 732	signo 723.1
Ordering code	LCD reflective	Transmissive red	LCD	
interface			2 Relay	
12-24 VDC	0 772 102	0 721 205	0732012	0723101
24 VAC	0 772 112		0732078	
115 / 230 VAC				0723102
115 VAC	0 772 122		0732049	
230 VAC	0 772 132		0732013	
90-260 VAC	0 772 142	0 721 206		

signo 723.1		
Ordering code		
with RS 232- interface	12-24 VDC	0723150M3
	115 / 230 VAC	0723151M3
Ordering code	12-24 VDC	Hengstler: 0723160M3
with RS 485- interface	115 / 230 VAC	0723161M3

For further details please refer to our Counter program, heading „Preset counters“

■ Encoders

- Outputs short circuit proof
- Supply voltage with pole protection
- Encoder monitoring (disk contamination, disk breakage, overheat, undervoltage, excessive LED aging)
- Activation of alarm output on error

Ordering data when coupled with shaft/motor etc.

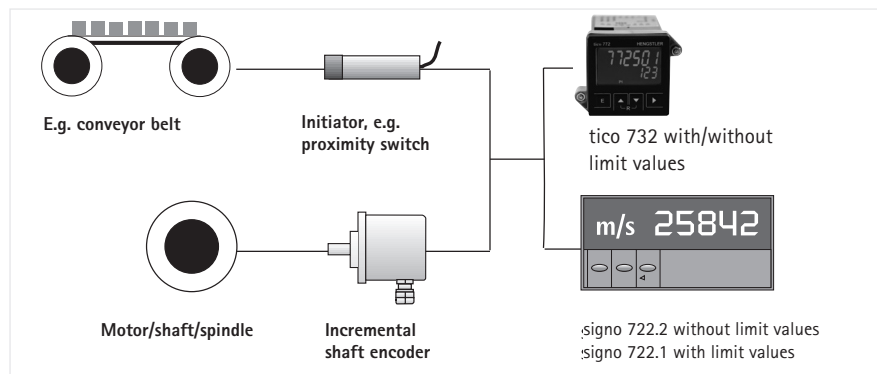
The choice of the suitable encoder type depends on the respective application: thus the whole range of encoders of the type RI is at your disposal

The only prerequisites for connection to the signo series counters are:

- Supply voltage: 10 ... 30 V (E)
- Output: push-pull short circuit proof (K)

Frequency Measuring and Speed Monitoring Systems

Frequency measuring and speed monitoring with/without limit values



APPLICATION

Speed monitoring for continuous manufacturing processes

- Delivery rate of a bottling plant (number of bottles per hour)
- Speed monitoring for a conveyor belt within given limits
- Flow measurement per period on conveyor equipment for solids and liquids

SHORT DESCRIPTION OF TECHNICAL COMPONENTS

■ Counters

	tico 772/773/774	tico 732	signo 722.1	signo 722.2
Display	1. Line 9,3 mm 2. Line 7,2 mm	LED or LCD, 6-digit, 1 line, digit height 7 mm	LED, 5-digit, 1 line, digit height 14 mm	LED, 5-digit, 1 line, digit height 14 mm
Frequency range	1/min 60000/s	1/min 5000/s	1/min 10000/s	1/min 10000/s
Functions	Prescaler, 2 presets Totalizing -, Preset-, Batch- or Shiftcounter	prescaler and scaler with or without 2 limit values keylock	prescaler and scaler 2 limit values, display retention and	prescaler and scaler display retention and keylock
Outputs	with 1 or 2 relays and transistor outputs	encoder supply encoder supply	2 changeover relay	encoder supply
Dimensions	DIN 48 x 48 mm	DIN 48 x 48 mm	DIN 96 x 48 mm	DIN 96 x 48 mm
Supply	12-30 DC 24 VAC; 115 VAC; 230 VAC; 90-260 VAC	12-24 VDC or 115 or 230 VAC	12-24 VDC	12-24 VDC
Ordering code (DC-supply)	0 772 102	0732030	0722101	0722201
Ordering code (AC-supply)	24 VAC 0 772 112 115 VAC 0 772 122 230 VAC 0 772 132	115 VAC 0732067 230 VAC 0732031		

Frequency Measuring and Speed Monitoring Systems

■ Encoders

You can choose from the whole range of our RI shaft encoder types.
The only prerequisites for connection to the signo series counters are:

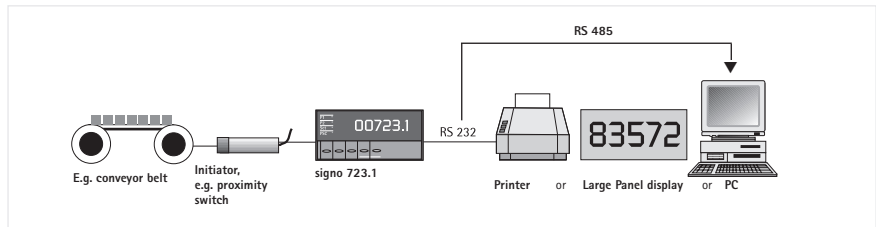
- Supply voltage: 10 ... 30 VDC
- Output: push-pull short circuit proof

Further criteria for choosing an encoder are:

- Required number of pulses
- Dimensions
- Environmental conditions (temperature, IP-Protection class)

Batch Counting Systems with/without Interface

SYSTEM OVERVIEW



APPLICATION

Batch counting for continuous and discontinuous manufacturing processes, such as:

- Packaging machines
- Bottling plants
- Forming plants for metals and plastics (pressworking, presses, diecasting)

SHORT DESCRIPTION OF TECHNICAL COMPONENTS

■ Counters

	tico 772/773/774	signo 721	tico 732	signo 723.1
Display	1. Line 9,3 mm 2. Line 7,2 mm	1. Line 12,0 mm 2. Line 6,0 mm	LED or LCD, 6-digit, digit height 7 mm	LED, 6-digit, 1 line, digit height 14 mm
Function	prescaler, 3 presets (1 batchpreset)	prescaler, 2 presets	prescaler, 2 presets Totalizing -, Preset-, Batch- or Shiftcounter	2 presets
Count mode	adding, subtracting, differential	adding, subtracting, differential	adding, subtracting, differential	adding, subtracting, differential
Outputs	with 1 or 2 relays and transistor outputs	with 1 or 2 relays and transistor outputs	1 or 2 changeover relays 1 or 2 transistor outputs	2 changeover relays 2 transistor outputs
Dimensions	DIN 48 x 48	DIN 48 x 48	DIN 48 x 48	DIN 48 x 96
Supply	12-30 DC 24 VAC; 115 VAC; 230 VAC; 90-260 VAC	12-30 DC 24 VAC; 115 VAC; 230 VAC; 90-260 VAC	12-24 VDC, 24 VAC, 115 VAC, 230 VAC	115/230 VAC or 12-24 VDC
Interface option	none	none	none	RS 232 for printer/panel dis- play or commu- nication with PC RS 485

Batch Counting Systems with/without Interface

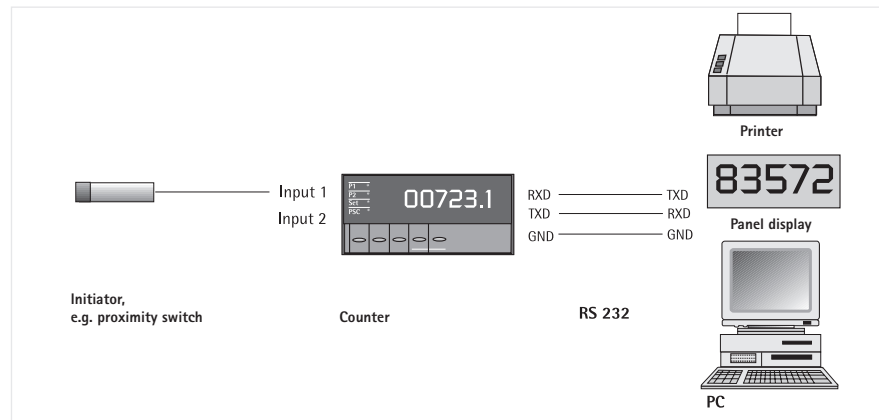
ORDERING DATA

Counters

	tico 772	signo 721	tico 732	signo 723.1
Ordering code interface	LCD reflective	Transmissive red	LCD 2 Relais	
12-24 VDC	0 772 102	0 721 205	0732012	0723101
24 VDC	0 772 112		0732078	
115 / 230 VAC				0723102
115 VAC	0 772 122		0732049	
230 VAC	0 772 132		0732013	
90-260 VAC	0 772 142	0 721 206		

signo 723.1		
Ordering code with RS 232-interface	12-24 VDC 115 / 230 VAC	0723150M3 0723151M3
Protocol		Hengstler:
Ordering code with RS 485-interface	12-24 VDC 115 / 230 VAC	0723160M3 0723161M3

CONNECTION DIAGRAM



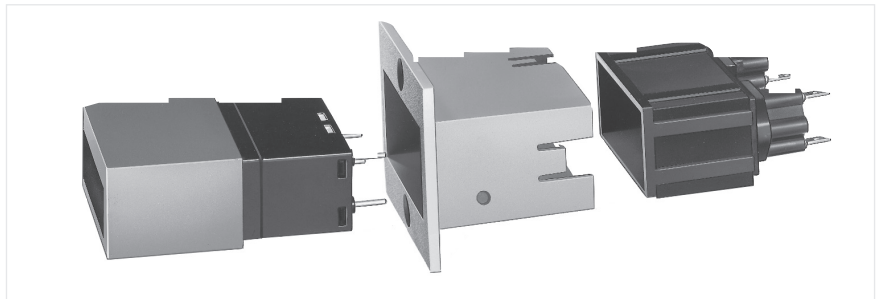
Notes

Modular System 400

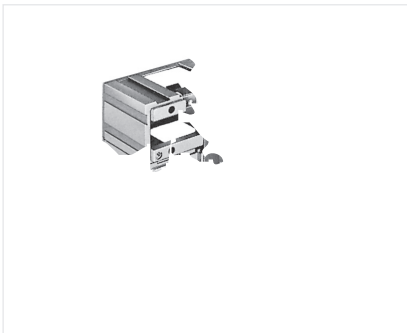
MODULAR SYSTEM 400

All counters in the Hengstler modular system 400 are of the plug-in type and have front panel dimensions based on 25 x 50 mm. They can be arranged in any combination as far as functionally feasible. Each counter requires a connection box for electrical connections and usually also a panel frame for mounting.

COUNTER with connection box and panel frame



MOUNTING the connection box by means of a flat steel bar



The counters are installed by means of the connection box or by a connection box and panel frame. For more complex arrangements, any number of connection boxes may be assembled to form a compact unit without open spaces between the boxes.

EXAMPLE Counter combination in panel frame size 5



Also, several counters can be combined together with their corresponding connection boxes to form a unit in one panel frame. Five panel frame sizes are available for this purpose (see accessories).

tico 731

TYPE 1



Model tico 731 (Battery)

0 731 1 0 1

* S * Option: with plug-in screw terminals

- Software function
- 01 impulse counter
 - 02 tachometer (1/min)
 - 03 time counter (hhhh:mm:ss)
 - 04 time counter (hhhhh.hh)

TYPE 2



Model tico 731 (12-24 VDC)

0 731 2 0 1

* S * Option: with plug-in screw terminals

- Software function
- 01 impulse counter
 - 02 tachometer (1/min)
 - 03 time counter (hhh:mm:ss)
 - 04 time counter (hhhhh.hh)

TYPE 3



Model tico 731 (Battery) Optokoppler input 12-250 VAC/VDC

0 731 3 0 1

- Software function
- 01 impulse counter
 - 03 time counter (hhh:mm:ss)
 - 04 time counter (hhhhh.hh)

TYPE 4



Model tico 731 (12-24 VDC)

0 731 4 0 1

- Software function
- 01 impulse counter
 - 02 tachometer (1/min)
 - 03 time counter (hhhh:mm:ss)
 - 04 time counter (hhhhh.hh)
 - 06 2kanalige Positionsanzeige

TYPE 5



Model tico 731 (12-24 VDC)

0 731 5 0 1
0 731 5 0 7

- Software function
- 01 impulse counter
 - 02 tachometer (1/min)
 - 03 time counter (hhhh:mm:ss)
 - 04 time counter (hhhhh.hh)
 - 06 2kanalige Positionsanzeige
 - 07 counter with differential mode (1 kHz)

tico 731

ORDER NUMBERS
SPECIAL VERSIONS

TYPE 7



Special functions

Choose version and basic function:

Type tico 731

0 731 7 **S** Option: with plug-in screw terminals only for standard model 1, 2

Standard version:

- 1 Standard model 1
- 2 Standard model 2
- 3 Standard model 3
- 4 Standard model 4
- 5 Standard model 5

Function:

- 1 Impulse counter
- 2 Tachometer (1/min)¹⁾
- 3 Time counter (hhh:mm:ss)
- 4 Time counter (hhhhh.hh)
- 6 Position indicator (2-channel)²⁾
- 7 Counter with differential mode³⁾

- 1) not available for standard type 3
- 2) not available for standard types 1, 2, 3
- 3) only available for standard type 5

Please state the desired special version on your order:

P: (Value);

Prescaler value: 0.000015 to 65535,99998⁴⁾

D: (Value);

Decimal point: 0 to 3 positions after the dot⁴⁾

V: (Value);

Preset value: 0 to 99 999 999⁵⁾

T: (Text);

The information text displayed on reaching the preset value can be built up as required from the 7-segment alphabet

- 4) not available for time counters
- 5) not available for tachometers and position indicator

tico 732



Multifunctional-Counter Bi-directional

Display	Preset	12-24 V DC	24 V AC	115 V AC	230 V AC	100 VAC
LCD	-	0 732 000	0 732 071	0 732 037	0 732 001	0 732 036
LCD	1	0 732 002	0 732 073	0 732 039	0 732 003	0 732 038
LCD	2	0 732 012	0 732 078	0 732 049	0 732 013	0 732 048
LED	-	0 732 018	0 732 080	0 732 055	0 732 019	0 732 054
LED	1	0 732 020	0 732 082	0 732 057	0 732 021	0 732 056
LED	2	0 732 030	0 732 087	0 732 067	0 732 031	0 732 066

Important: Only versions with 2 presets or without presets can be used as tachometer.

tico 734



Flexible Counter Series in DIN size 36 x 72 mm

Panel Instruments

Totaliser	0 734 000
Add/Subtract Totalizer	0 734 001
Position Indicator	0 734 002
Tachometer	0 734 003
Programmable Rate Meter	0 734 004
Rate Meter with Totalizer	0 734 005
Elapsed Time Indicator	0 734 006
Preset Counter	0 734 007
Preset Timer	0 734 008
Rate Meter with Total and Pulsed Output	0 734 009
Lithiumbattery	E3533 355

signo 721



Preset-Counter Bi-directional

Display	Relay	12-30 VDC	24 VAC	115 VAC	230 VAC	90-260 VAC
Transmissive red	1	0 721 201				0 721 202
Transmissive red	2	0 721 205				0 721 206
LCD reflective	1	0 721 301	0 721 309	0 721 332	0 721 342	0 721 302
LCD reflective	2	0 721 305	0 721 310	0 721 336	0 721 346	0 721 306
Transmissive white	1	0 721 401				0 721 402
Transmissive white	2	0 721 405				0 721 406

Transmissive white: white figures on black ground
 Transmissive red: red figures on black ground

tico 772



Multifunctional-Counter Bi-directional

Display	Relay	12-30 VDC	24 VAC	115 VAC	230 VAC	90-260 VAC
LCD reflective	1	0 772 101	0 772 111	0 772 121	0 772 131	0 772 141
LCD reflective	2	0 772 102	0 772 112	0 772 122	0 772 132	0 772 142
Transflective pos.	1	0 772 201	-	-	-	0 772 241
Transflective pos.	2	0 772 202	-	-	-	0 772 242
Transmissive white	1	0 772 301	-	-	-	0 772 341
Transmissive white	2	0 772 302	-	-	-	0 772 342
Transmissive red	1	0 772 401	-	-	-	0 772 441
Transmissive red	2	0 772 402	-	-	-	0 772 442
Transmissive green	1	0 772 501	-	-	-	0 772 541
Transmissive green	2	0 772 502	-	-	-	0 772 542

Transflective positiv: black figures on back lighted ground
 Transmissive white: white figures on black ground
 Transmissive red: red figures on black ground
 Transmissive green: green figures on black ground

tico 773



Multifunctional-Counter Bi-directional

Display	Relay	12 - 30 VDC	90 - 260 VAC
LCD reflective	1	0 773 101	0 773 141
LCD reflective	2	0 773 102	0 773 142
Transflective positive	1	0 773 201	0 773 241
Transflective positive	2	0 773 202	0 773 242
Transmissive white	1	0 773 301	0 773 341
Transmissive white	2	0 773 302	0 773 342
Transmissive red	1	0 773 401	0 773 441
Transmissive red	2	0 773 402	0 773 442
Transmissive green	1	0 773 501	0 773 541
Transmissive green	2	0 773 502	0 773 542

Transflective positiv: black figures on back lighted ground
 Transmissive white: white figures on black ground
 Transmissive red: red figures on black ground
 Transmissive green: green figures on black ground

tico 774



Multifunctional-Counter Bi-directional

Display	Relay	12 - 30 VDC	90 - 260 VAC
LCD reflective	1	0 774 101	0 774 141
LCD reflective	2	0 774 102	0 774 142
Transflective positive	1	0 774 201	0 774 241
Transflective positive	2	0 774 202	0 774 242
Transmissive white	1	0 774 301	0 774 341
Transmissive white	2	0 774 302	0 774 342
Transmissive red	1	0 774 401	0 774 441
Transmissive red	2	0 774 402	0 774 442
Transmissive green	1	0 774 501	0 774 541
Transmissive green	2	0 774 502	0 774 542

Transflective positiv: black figures on back lighted ground
 Transmissive white: white figures on black ground
 Transmissive red: red figures on black ground
 Transmissive green: green figures on black ground

signo 723.1



signo 727.1



Variable Preset Counter

Type	Supply	Ordering code
without	12 ... 24 VDC	0 723 101
interface	115/230 VAC	0 723 102

This counter is available with several interfaces. See next pages.

LED-Totalizing Counter / Position Indicator with/without Limit Values

Type	Supply	Ordering code
signo 727 without limit values ^{1) 2)}	12 ... 24 VDC	0 727 101
signo 727 without limit values ^{1) 2)}	115/230 VAC	0 727 102
signo 727 with 2 limit values ¹⁾	12 ... 24 VDC	0 727 121
signo 727 with 2 limit values ¹⁾	115/230 VAC	0 727 122

This counter is available with several interfaces. See next pages.

¹⁾ Position Indicator

²⁾ Totalizing Counter

signo 723/727

Counter



Counter with time counter



tico 722



Variable Preset Counter and Position indicator with Interface RS 485 / RS 232

signo 723

signo 727

Version with interface		12...24 VDC	115/230 VAC
signo 723 Printersoftware	RS232	0 723 150M1	0 723 151M1
signo 723 TP3 Protocol	RS232	0 723 150M3	0 723 151M3
	RS485	0 723 160M3	0 723 161M3
signo 727 TP3 Protocol	RS232	0 727 150M3	0 727 151M3
	RS485	0 727 160M3	0 727 161M3
signo 723 TP3 Protocol	RS485	0 723 125	0 723 126
Windows NT / 2000 / XP		0 723 167	

Tachometers with or without Limit Values

Ordering code
12 ... 24 VDC

Tachometer without limit value	0 722 201
Tachometer with limit value	0 722 101
Adapter-panel frame 125 x 60 mm (cutout 106 x 55 mm)	1 405 679

Type 464-468



Type 864-868



Front panel 56 x 40 mm



Front panel 55 x 28 mm

Plug-in Totalizing Counters, Modular System 400

Voltage	4 digits		6 digits		8 digits	
	button reset.	el. reset	button reset	el. reset	w/o reset	without reset
12 V DC	0 465 161	0 465 761	0 464 161	0 464 761	0 466 161	0 468 161
20 V DC			0 464 164			
24 V DC	0 465 165	0 465 765	0 464 165	0 464 765	0 466 165	0 468 165
48 V DC	0 465 170		0 464 170	0 464 770	0 466 170	0 468 170
60 V DC	0 465 172		0 464 172	0 464 772	0 466 172	
110 V DC	0 465 175		0 464 175	0 464 775	0 466 175	0 468 175
190 V DC			0 464 180	0 464 780		
220 V DC	0 465 181		0 464 181		0 466 181	0 468 181
24 V AC	0 465 186	0 465 786	0 464 186	0 464 786	0 466 186	0 468 186
42 V AC	0 465 188		0 464 188	0 464 788	0 466 188	
100 V AC	0 465 198	0 465 798	0 464 198	0 464 798		
115 V AC	0 465 189	0 465 789	0 464 189	0 464 789	0 466 189	0 468 189
200 V AC		0 465 799		0 464 799		
230 V AC	0 465 190	0 465 790	0 464 190	0 464 790	0 466 190	0 468 190

connection box	ordering code 1 405 464,
Panel frame, black	ordering code 1 405 491,
Key-reset system	ordering code + SR e.g. 0 465 165 SR
Case, covers	see accessories

Totalizing Counters for Front Panel Mounting

Voltage	6 digits		8 digits
	Button reset	w/o reset	w/o reset
24 VDC	0 864 165	0 866 165	0 868 165
24 VAC	0 864 186	0 866 186*	0 868 186*
115 VAC	0 864 189	0 866 189	0 868 189
230 VAC	0 864 190	0 866 190	0 868 190

Standard accessory	
Key reset system	Ordering code + SR e.g. 0 864 165 SR

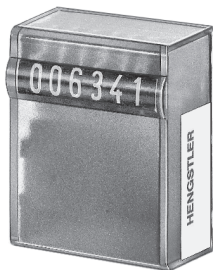
Voltage	6 digits		8 digits
	Button reset	w/o reset	w/o reset
24 VDC	0 864 465	0 866 465	0 868 465
24 VAC	0 864 486*	0 866 486*	0 868 486*
115 VAC	0 864 489	0 866 489*	0 868 489*
230 VAC	0 864 490	0 866 490*	0 868 490

Standard accessory	
Key-reset system	Ordering code + SR e.g. 0 864 165 SR

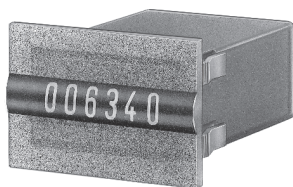
* on request
Further voltages available on request.

Type 634/635

Type 634 Type 1
Type 635 Type 1



Type 634 Type 8
Type 635 Type 8



Totalizing Counters „mini-i“

Type 634: Counter with high immunity against magnetic interference
Type 635: Counter with high shock stability



6 digits	634.1	634.3	634.7	634.8
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Voltage	Ω	Ordering code	Ordering code	Ordering code	Order. code
5 VDC	335 Ω	0 634 132	0 634 332	0 634 712	0 634 812
12 VDC	335 Ω				
	+ RV 330 Ω^1	0 634 128	0 634 328	0 634 708	0 634 808
24 VDC	335 Ω				
	+ RV 1K Ω^1	0 634 130	0 634 330	0 634 710	0 634 810

7 digits	634.1	634.3	634.7	634.8
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Voltage	Ω	Ordering code	Ordering code	Ordering code	Order. code
5 VDC	335 Ω		0 634 667	0 634 630	
12 VDC	335 Ω				
	+ RV 330 Ω^1	0 634 631		0 634 714	
24 VDC	335 Ω				
	+ RV 1K Ω^1	0 634 673		0 634 713	

6 digits	635.1	635.3	635.7	635.8
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Voltage	Ω	Ordering code	Ordering code	Ordering code	Order. code
5 VDC	320 Ω	0 635 132	0 635 332	0 635 712	0 635 812
12 VDC	1860 Ω	0 635 128	0 635 328	0 635 708	0 635 808
24 VDC	3720 Ω	0 635 130	0 635 330	0 635 710	0 635 810

Connection leads 150 mm	red	1 634 008	1 634 008
	black	1 634 007	1 634 007

7 digits	635.1	635.3	635.7	635.8
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Voltage	Ω	Ordering code	Ordering code	Ordering code	Order. code
5 VDC	320 Ω	0 635 603	0 635 623	0 635 637	0 635 639
12 VDC	1860 Ω	0 635 640		0 635 652	0 635 630
24 VDC	3720 Ω	0 635 684	0 635 621	0 635 650	0 635 609

Connection leads 150 mm	red	1 634 008	1 634 008
	black	1 634 007	1 634 007

Inquire for optional mounting position and further voltages
1 RV internal

Type 635



Types 872-877

Counters with front panel attachment

Voltage	Ω
12 V DC	120 Ω
24 V DC	375 Ω
24 V AC	190 Ω
110 V AC	5000 Ω
230 V AC	6000 Ω

„mini-iw“ for AC Voltage

	Coil	Screw terminal	Connecting cable	AMP plug
Voltage	Ω			
24 VAC	6,8 k Ω	0 635 811	0 635 821	0 635 841
115 VAC	6,8 k Ω + RV 25 k Ω	0 635 813	0 635 823	0 635 843
230 VAC	6,8 k Ω + RV 66 k Ω	0 635 815	0 635 825	0 635 845

Panel Frame 24 x 36 (assembly dimension 22 x 33) Ordering code 1 405 674

Inquire for other versions

for DIN-Rail Attachment

	6-digit	7-digit
Supply voltage 5, 12 und 24 V DC	0 635 532	0 635 633
Supply voltage 24 V AC	0 635 541	
Supply voltage 115/230 V DC/AC	0 635 550	0 635 636

Totalizing Counters „Piccolo“



4-digit without reset	with reset	5-digit without reset	with reset	6-digit without reset	7-digit without reset
0 872 106	0 873 106	0 874 106	0 875 106	0 876 106	0 877 106
0 872 107	0 873 107	0 874 107	0 875 107	0 876 107	0 877 107
	0 873 112		0 875 112	0 876 112	0 877 112
0 872 113	0 873 113	0 874 113	0 875 113	0 876 113	*
0 872 114	0 873 114	0 874 114	0 875 114	0 876 114	0 877 114

Other voltages available on request.

Type 853



Totalizing Counter for Surface Mounting

	Voltage	Ordering code
Base mounting	24 VDC	0 853 265
Base mounting	110 VDC	0 853 275
Base mounting	220 VDC	0 853 281
Base mounting	24 VAC	0 853 286
Base mounting	42 VAC	0 853 288
Base mounting	48 VAC	0 853 297
Base mounting	110 VAC	0 853 289
Base mounting	230 VAC	0 853 290

Standard accessory

Key reset Ordering code + SR f. Ex. 0 853 265 SR

Type 446/447



Subtracting Preset Counter, Plug-in System

Voltage	3 digits button reset	el. reset	5 digits button reset	el. reset	automatic reset
12 V DC	0 447 160		0 446 160		
24 V DC	0 447 164	0 447 764	0 446 164	0 446 764	1 486 402
48 V DC		0 447 768	0 446 168		
110 V DC	0 447 174		0 446 174		
220 V DC				0 446 780	
24 V AC	0 447 186	0 447 786	0 446 186	0 446 786	1 486 409
115 V AC	0 447 189	0 447 789	0 446 189	0 446 789	1 486 412
230 V AC	0 447 190	0 447 790	0 446 190	0 446 790	1 486 413

Connection box Ordering Code 1 405 537

Key-reset system Ordering Code + SR e.g. 0 487 164 SR

Panel frame, black Ordering Code 1 405 492

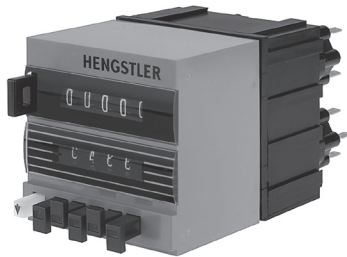
For further accessories see "Accessories"

* on request

** Use only counters with electrical reset.

The connection box is integrated in the module.

Type 486/487



Adding Preset Counter, Plug-in System

Voltage	3 digits		5 digits		automatic reset
	button reset	el. reset	button reset	el. reset	
12 V DC			0 486 160	0 486 760	
24 V DC	0 487 164	0 487 764	0 486 164	0 486 764	1 486 402
48 V DC	0 487 168		0 486 168	0 486 768	
60 V DC		0 487 771			
110 V DC	0 487 174		0 486 174		
220 V DC		0 487 780	0 486 180	0 486 780	
24 V AC	0 487 186	0 487 786	0 486 186	0 486 786	1 486 409
42 V AC		0 487 788	0 486 188	0 486 788	
100 V AC	0 487 198	0 487 798	0 486 198	0 486 798	
115 V AC	0 487 189	0 487 789	0 486 189	0 486 789	1 486 412
200 V AC		0 487 799			
230 V AC	0 487 190	0 487 790	0 486 190	0 486 790	1 486 413

Connection box	Ordering Code 1 405 537
Key-reset system	Ordering Code + SR e.g. 0 487 164 SR
Panel frame, black	Ordering Code 1 405 492

For further accessories see "Accessories"

* on request

** Use only counters with electrical reset.

The connection box is integrated in the module.

Type 886/887

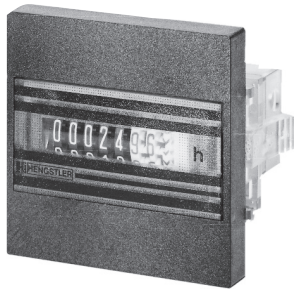


Adding Preset Counter for Front Panel Mounting

Voltage	3 digits		5 digits	
	button reset	el. reset	button reset	el. reset
24 VDC	0 887 264	0 887 214	0 886 264	0 886 214
115 VAC	0 887 289		0 886 289	0 886 239
230 VAC	0 887 290	0 887 240	0 886 290	0 886 240
Voltage	3 digits		5 digits	
	button reset	el. reset	button reset	el. reset
24 VDC	0 887 464	0 887 414	0 886 464	0 886 414
230 VAC	-	-	0 886 490	0 886 440

For key reset add ordering code + SR, e.g. 0 887 264 SR

Type 891



Installation frame



Time Counter with DIN Dimensions for AC and DC Operation

Voltage	Power consumption	50 Hz Ordering code	60 Hz Ordering code
24 VAC	0,1 VA	0 891 201	0 891 202
36 VAC	0,1 VA	0 891 208	
48 VAC	0,2 VA	0 891 209	0 891 219
100 VAC	0,3 VA	0 891 213	0 891 214
115 VAC	0,6 VA	0 891 203	0 891 204
200 VAC	0,7 VA	0 891 215	0 891 216
230 VAC	0,7 VA	0 891 211	0 891 206
380 VAC	0,7 VA	0 891 207	

Voltage	Max. power consumption	Ordering code	external resistor
12... 36 VDC	350 mW	0 891 331	
40... 60 VDC	620 mW	0 891 331	+ 6,8 kΩ/1 W
80...125 VDC	1100 mW	0 891 331	+ 15 kΩ/1 W

Seal: Ordering code 2 405 231 (0.5 mm)

	Size	Installation cutout	Frame Ordering code	Seal Ordering code
A	54 x 29 mm	50 x 25 mm	2 405 218	2 405 232
B	48 x 48 mm	45 x 45 mm	2 405 219	2 405 233
C	52 x 52 mm	∅ 50 mm	2 405 220	2 405 234
D	72 x 72 mm	68 x 68 mm	1 405 672	2 405 235
E	∅ 73 mm	∅ 50 mm	2 405 223	2 405 237
F	∅ 58 mm	∅ 50 mm	2 405 224	2 405 236

Time Counter for Surface Mounting, Suitable for AC and DC Operation

Voltage	Power-consumption	50 Hz Ordering code	60 Hz Ordering code
24 V AC	0,1 VA	0 891 501	0 891 502
48 V AC	0,2 VA	0 891 509	
115 V AC	0,6 VA	0 891 503	0 891 504
230 V AC	0,7 VA	0 891 511	0 891 506
380 V AC	0,7 VA	0 891 507	

Voltage	Power consumption	Voltage tolerance	Ordering code
12- 36 V DC	max. 550 mW	± 10 %	0 891 531
40- 60 V DC	max. 50 mW	± 10 %	0 891 532
80-125 V DC	750 mW	± 10 %	0 891 533

Type 633-DC



Type 633.0

ORDER INFORMATION Counter

Accessories



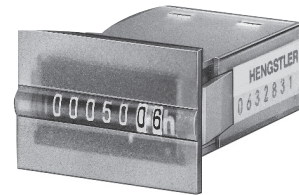
Type 633-AC



Time Counters mini "h", DC Version



Type 633.7



Type 633.8

Voltage	Type 633.0 Ord. code	Type 633.7 Ord. code	Type 633.8 Ord. code
5 VDC	0 633 031	0 633 731	0 633 831
12 VDC	0 633 032	0 633 732	0 633 832
24 VDC	0 633 033	0 633 733	0 633 833
5 - 30 VDC	0 633 034	0 633 734	0 633 834
Flying lead 150 mm red		1 634 008	1 634 008
Flying lead 150 mm black		1 634 007	1 634 007

Miniature Time Counter for 35 mm DIN Rail Attachment

Time counter for supply voltage 5 VDC	0 633 531
Time counter for supply voltage 12 VDC	0 633 532
Time counter for supply voltage 24 VDC	0 633 533

Time Counter mini "h", AC Version

Voltage	Screw- terminals	Connecting- cable	AMP-connector
24 V 50 Hz	0 633 811	0 633 821	0 633 841
24 V 60 Hz	0 633 812		0 633 842
115 V 50 Hz	0 633 813	0 633 823	0 633 843
115 V 60 Hz	0 633 814	0 633 824	0 633 844
230 V 50 Hz	0 633 815	0 633 825	0 633 845
230 V 60 Hz			0 633 846

Other voltages on request

panel frame 24x36 mm (insert dimensions 22 x 36 mm) Ordering code 1 405 674

Type 478



Plug-in Time Counters for Modular System 400

Voltage	6-digit with reset			7-digit without reset		
	50 Hz	60 Hz	DC	50 Hz	60 Hz	DC
12 V	-	-	0 478 160	-	-	
24 V			0 478 121			0 478 123
115 V	0 478 103	0 478 104	-	0 478 113	0 478 114	-
220 V	0 478 105	0 478 106	-	0 478 115	0 478 116	-

Connection box	Ordering code 1 405 464
Panel frame, black	Ordering code 1 405 491
Key reset system	Ordering code + SR e. g. 0 478 160 SR
Case, covers	see "Accessories"

Type 489



Plug-in Electromechanical Preset Time Counters

Voltage	button reset	electr. reset
115 V/50 Hz	0 489 103)*
230 V/50 Hz	0 489 105	0 489 705
115 V/60 Hz)*)*
230 V/60 Hz	0 489 106)*
24 VDC	0 489 121	
Key reset system	Ordering code + SR e. g. 0 489 101 SR	
Panel frame	1 405 492	
Connection box	1 405 537	

* on request

Types 344–346



Hand Tallys

Hand tallys with thumb ring	Ordering code 0 344 001
Hand tallys for wall-mounting	Ordering code 0 345 001
Hand tallys for table-mounting	Ordering code 0 346 001

Types 101/103 301/309

Revolution- or Stroke Counters



surface-mounting



flush-mounting



without housing

ORDER INFORMATION Revolution Counters

Ratio

Case	Number of digits	Actuation/sense of rotation				
		Bz	Bw	Bz	Bw	
1:1	Surface	4	0 101 605	0 101 606*	0 101 607	0 101 608
		5	0 101 609	0 101 610	–	–
flush		4	0 103 605	0 103 606	0 103 607	0 103 608
		5	–	–	–	–
1:10	Surface	4	0 101 505	0 101 506	0 101 507	0 101 508
		5	0 101 613	0 101 614*	0 101 615*	0 101 616
flush		4	0 103 505	0 103 506	0 103 507	0 103 508

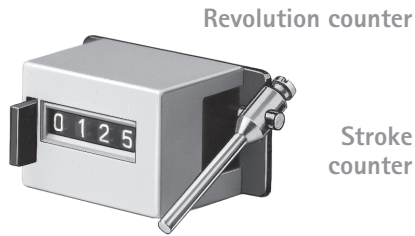
Stroke Counter

Case	Number of digits	Actuation/sense of rotation			
		Bz	Bw	Bz	Bw
Surface	4	0 301 505	0 301 506	0 301 507	0 301 508
	5	0 301 509	0 301 510	0 301 511	0 301 512
flush	4	0 309 505*	0 309 506*	0 309 507*	0 309 508*
	5	0 309 509	0 309 510*	0 309 511*	0 309 512*
without	4	0 301 401*	0 309 402	–	–
	5	0 301 405*	–	0 301 407*	0 301 408*

Stroke lever 0 600 007
For further stroke levers see accessories

* on request
Inquire for other versions

Type 125

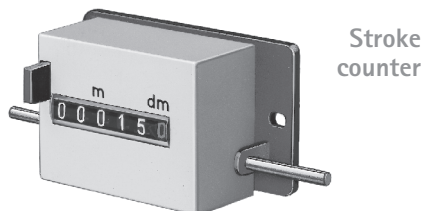


Revolution counter

Stroke counter



Type 150



Revolution counter

Length counter

Stroke counter

Revolution and Stroke Counters with Button Reset

Actuation	Sense of rotation	4-digit, transmission ratio		5-digit, transmission ratio	
		1:1	1:10	1:1	1:10
	Bz	0 125 101	0 125 111	0 125 105	0 125 115
	Bw	0 125 102	0 125 112	0 125 106	0 125 116
	Bz	0 125 103	0 125 113	0 125 107	-
	Bw	0 125 104	0 125 114	0 125 108	0 125 118
	Bz	0 125 301	-	0 125 305	-
	Bw	0 125 302	-	0 125 306	-
	Bz	0 125 303	-	0 125 307	-
	Bw	0 125 304	-	0 125 308	-

Stroke lever ordering code 0 600 026 Other stroke levers available on request.

Hand Tally

Counter	Ordering code 0 125 342
Accessory stroke lever	Ordering code 0 600 065
Magnetic attaching plate	Ordering code 1 125 009

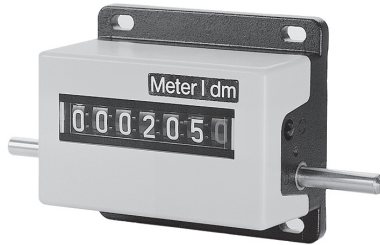
Revolution, Length, Stroke Counters

Actuation	Sense of rotation	Indication	Unit	Transm. ratio	Transm. ratio	Transm. ratio
				1:1	1:2	1:10
				Ordering code	Ordering code	Ordering code
	Bz	999 999		-	-	0 150 103
	Bw	999 999		-	-	0 150 104
	Bz	99 999,9	m/dm	-	0 150 201	-
	Bw	99 999,9	m/dm	-	0 150 202	-
	Bz	999 999		0 150 301	-	-
	Bw	999 999		0 150 302	-	-
	Bz	999 999		0 150 303	-	-
	Bw	999 999		0 150 304	-	-

Stroke lever 0 600 003 For further stroke levers see accessories
Protective cover Ordering code 2 150 056*

* on request
For measuring wheels see accessories. Inquire for other versions.

Type 110/111 Type 205, 312



Revolution counter Type 110/111

Length counter Type 205

Stroke counter Type 312

Revolution counter, Length counter, Stroke counter with key reset

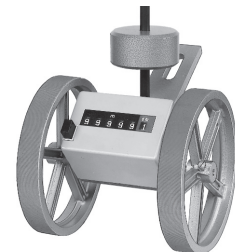
Actuation	Sense of rotation	Transm. ratio 1:1	Transm. ratio 1:2	Transm. ratio 1:5	Transm. ratio 1:10
<input type="checkbox"/>	Bz/Bw	0 110 001			
<input type="checkbox"/>	Bz	0 111 001			
<input type="checkbox"/>	Bw	0 111 002			
<input type="checkbox"/>	Bz		0 205 003	0 205 001	0 205 005
<input type="checkbox"/>	Bw		-	0 205 002	0 205 006
<input type="checkbox"/>	Bz	0 312 001			
<input type="checkbox"/>	Bw	0 312 002			

* on request

For measuring wheels and stroke lever see accessories.
Replacement key 2 312 002

Type 225

Revolution, Length, Stroke Counters



	Actuation	Sense of rotation	Indication	Transm. ratio 1:1 Ordering code	Transm. ratio 1:5 Ordering code	Transm. ratio 1:10 Ordering code	Transm. ratio 1:50 Ordering code
Revolution counter	<input type="checkbox"/>	Bz	999 999	0 225 001	-	0 225 021	-
	<input type="checkbox"/>	Bw	999 999	0 225 002	-	0 225 022	-
Length counter	<input type="checkbox"/>	Bz	99 999,9 m/dm	-	0 225 003 m/dm	-	0 225 007 m/cm
	<input type="checkbox"/>	Bw	99 999,9 m/dm	-	0 225 004 m/dm	-	0 225 008 m/cm
Length counter with suspension device	<input type="checkbox"/>	Bz	99 999,9 m/dm	-	0 225 501 m/dm	-	0 225 505 m/cm
	<input type="checkbox"/>	Bw	99 999,9 m/dm	-	0 225 502 m/dm	-	0 225 506 m/cm
Stroke counter	<input type="checkbox"/>	Bz	999 999	0 225 301	-	-	-
	<input type="checkbox"/>	Bw	999 999	0 225 302	-	-	-

Stroke lever Ordering code 0 600 005 For other stroke levers see accessories
Panel frame Ordering code 1 250 056 See accessories for description

* on request

For measuring wheel see accessories, they are not included in normal delivery

Type 250



Revolution counter
Length counter

Stroke counter

Accessories

Preset Revolution, Length Measuring or Stroke Counter

Actuation	Transmis- sion ratio	Display	Unit	Bz	Bw
<input type="checkbox"/>	1:1	99999		0 250 001	0 250 002
<input type="checkbox"/>	5:1	99999	m	0 250 013	0 250 014
<input type="checkbox"/>	2:1	99999	m	0 250 019	0 250 020
<input type="checkbox"/>	1:5	9999,9	m/dm	0 250 023	0 250 024
<input type="checkbox"/>	1:1	99999		0 250 301	0 250 302

Stroke lever Ordering code 0 600 005

For other stroke levers, measuring wheels and installation frames see "Accessories"

Notes

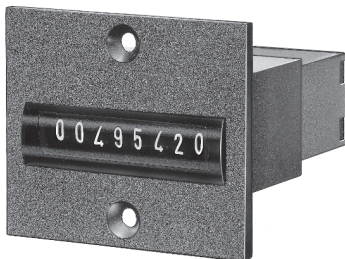
Type 490

ORDER INFORMATION



Actuating magnets (North pole)

Type 495



for surface mounting



Colibri With Magnetic Actuator

	Ordering code	Ordering code	Ordering code
Counter without attachment accessories	North pole	South pole	Fe
6-digits	0 490 001	0 490 002	0 490 003
7-digits	0 490 004	0 490 005	0 490 006
Attachment plates	ZBO	ZBL	ZBH
	2 490 011	2 490 012	2 490 005
Hose clamps	20 ... 32 mm	25 ... 40 mm	40 ... 60 mm
	3 515 055	3 515 050*	3 515 057
Distance 10 mm	Distance 30 mm	Magnetic plate 6 mm	
3 532 023	3 532 024	3 532 025	

* on request

Actuating distance Fe: 0,5 mm

Pneumatic Totalizing Counter

Connection	Frontpanel	6-digit manual/pneumatic reset	8-digit without reset
Hose coupler M5	56 x 40	0 495 474	0 495 420
Rapid-fit connector	56 x 40	0 495 473	0 495 422
Hose coupler M5	60 x 50	0 495 464	
Rapid-fit connector	60 x 50	0 495 465	0 495 422
Protective cover IP 55		with knob	1 405 611
		with lock	1 405 612
Fittings for hose M5 x 1		3 641 733	

Connection

Hose coupler M5	0 495 462
Rapid-fit connector	0 495 461
Fittings for hose M5 x 1	3 641 733

Typ 497

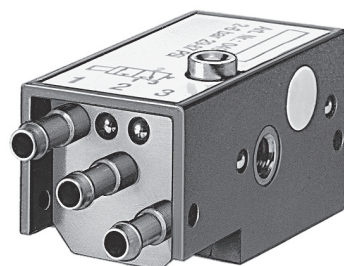
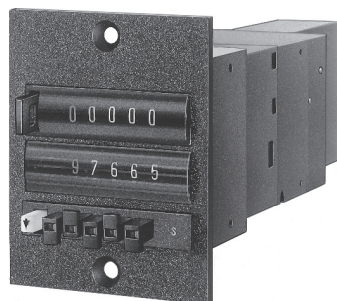
adding



subtracting

Standard accessories

Preset Time Counter



Pneumatic Preset Counter

Connection	Button and pneum. reset		with automatic reset	
	3-digit	5-digit	3-digit	5-digit
Hose coupler M5	0 497 619	0 497 486	0 497 493	0 497 472
Rapid-fit connector	0 497 618	0 497 487	0 497 479	0 497 473

Connection	Button and pneum. reset	
	3-digit	5-digit
Hose coupler M5	0 497 530	0 497 550
Rapid-fit connector	0 497 532	0 497 552

Transparent cover (description see "Accessories")		
	with knob	1 405 613
	with lock	1 405 614
Fittings M5 for hose M 5 x 1		3 641 733

Version		Hose coupler M5	Rapid fit connection
3-digit,	second indication	0 497 621	0 497 620
	minute indication	0 497 622	-
5-digit,	second indication	0 497 652	0 497 653
	with automatic reset	0 497 665	0 497 663
5-digit,	minute indication	0 497 654	0 497 655
	with automatic reset	0 497 666	0 497 664

Transparent cover as described under "Accessories"		
	with key	1 405 614
	with knob	1 405 613
Fittings M5 for hose M5 x 1		3 641 733

Pneumatic Proximity Switch

Ordering code	
Pneumatic proximity switch	0 490 300
Strap retainer attachment up to 100 mm ø	1 490 205

Type 499



Pneumatic Timer

	Time range	Time range	Time range	Time range
Connection	0.2 ... 3 s	2 ... 30 s	8 ... 120 s	20 ... 300 s
Hose coupler M5	0 499 520	0 499 500	0 499 540	0 499 550
Rapid-fit connection	0 499 521	0 499 501		0 499 551

Dimensions	Installation dimensions	Ordering code
48 x 48 mm	45 x 45 mm	2 405 219
52 x 52 mm	45 x 45 mm	2 405 220
54 x 29 mm	50 x 25 mm	2 405 218
∅ 59 mm	∅ 50 mm	2 405 224
60 x 75 mm	52 x 52 mm	1 499 512
72 x 72 mm	68 x 68 mm	1 405 672

Socket for DIN rail attachment

- Hose screw coupler 1 499 511
- Rapid-fit connector 1 499 513

Please do not forget to add one of the following

Bypass slides to your order:

- Bypass slide for 35 mm H-rail 3 513 306
- Bypass slide for C-rail 3 513 307

Automatic reset see automatic reset module

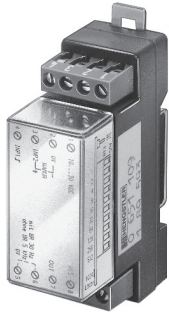
Automatic Reset Module for Pneumatic Timers



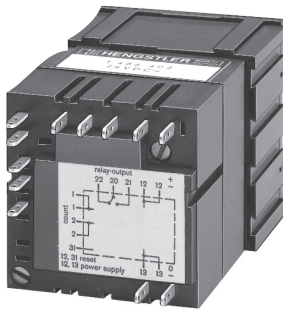
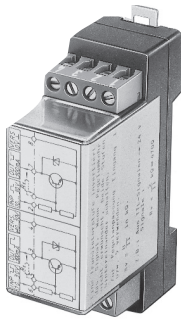
	Ordering code
Pneum. reset module M5	0 499 350
Pneum. reset module rapid-fit coupling	0 499 351
Front panel 54 x 29 mm	2 405 218

(For further accessories, please refer to the pneumatic timers)

Type 651



Type 654



Pulse Scaler for DIN Rail Attachment

Setting range of the output impuls		
Input	max. 100 ms	max. 2 s
PNP	0 651 109	--
PNP and NAMUR	0 651 108	0 651 114

Attention:

If Version 0 651 108 or 0 651 114 is operated with the PNP input INP 1, then the NAMUR input INP 2 must be connected to 0 V. The simultaneous use of both inputs is not possible!

Pulse Amplifier for DIN Rail Attachment

Pulse amplifier	Ordering code 0 654 003
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Automatic Reset Module for Preset Counters

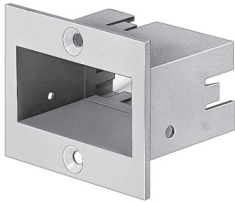
Supply voltage	Ordering code	Supply voltage	Ordering code
24 VDC	1 486 402	115 VAC	1 486 412
24 VAC	1 486 409	220 VAC	1 486 413

Inquire for other voltages

Note: When this module is used, the counter no longer requires a connection box.

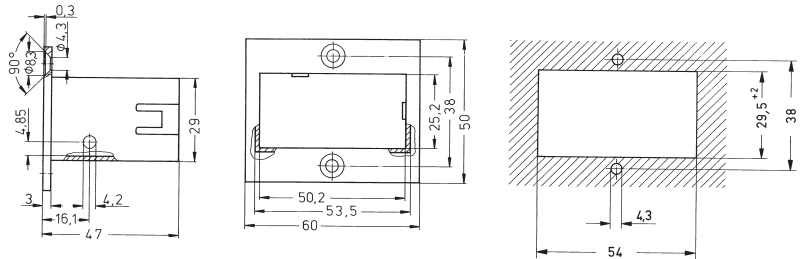
Panel Frames

for Hengstler Modular System 400



Size 1

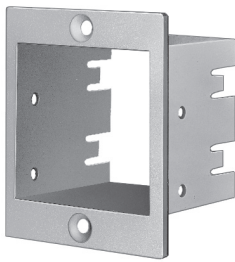
Attachment by two countersunk screws M4



Plastic, black
Plastic, grey

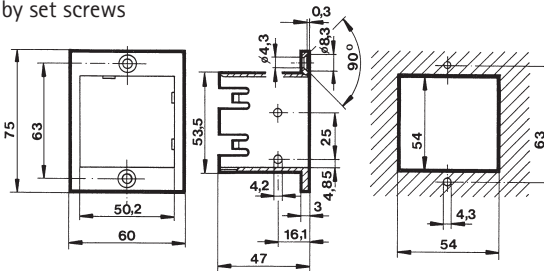
Ordering code 1 405 491
Ordering code 1 405 452

Dimensions in mm



Size 2

Attachment by set screws



Plastic, black
Plastic, grey

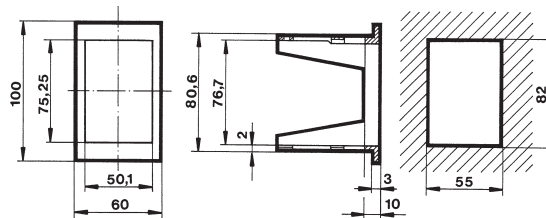
Ordering code 1 405 492
Ordering code 1 405 453

Dimensions in mm



Size 3

Attachment by set screws



Die-cast

Textured paint, matt black
silver

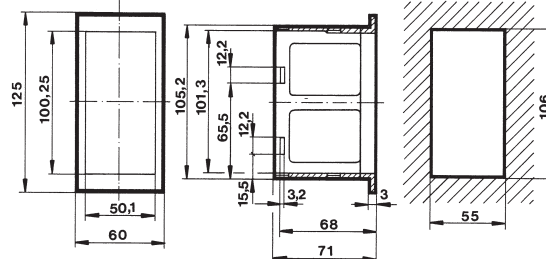
Ordering code 1 405 010
Ordering code 1 405 009

Dimensions in mm



Size 4

Attachment by set screws



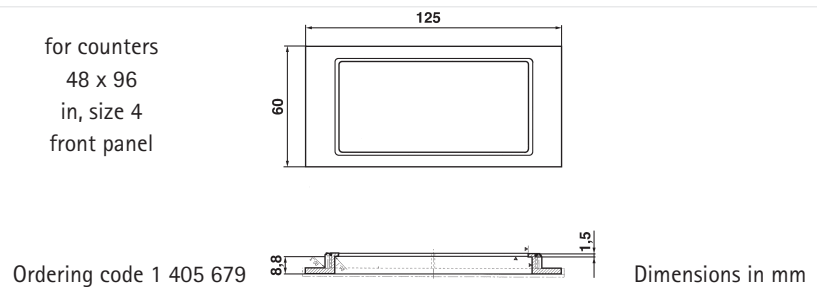
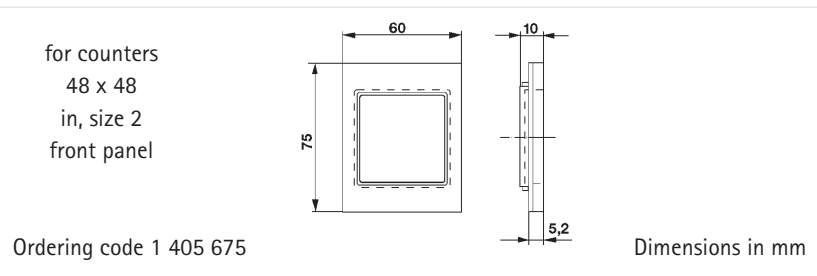
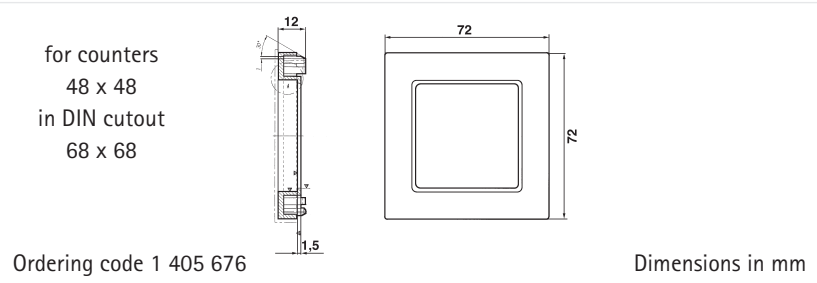
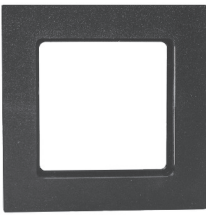
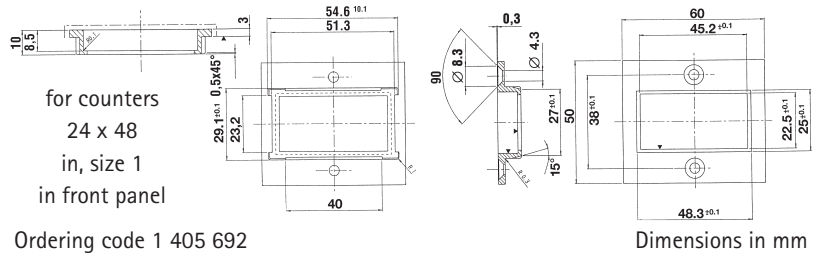
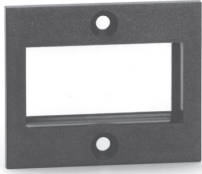
Sheet steel
Textured paint, matt black

Ordering code 1 405 093

Dimensions in mm

Panel Frames

"signo" + "tico"

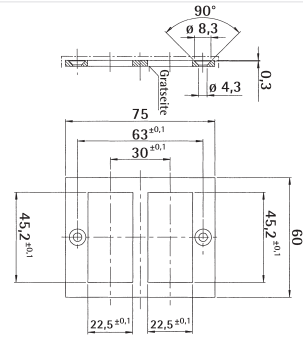


Panel Frames

Signo and tico



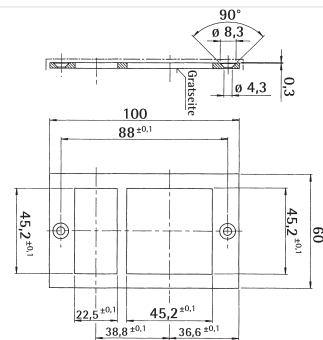
2 counters
24 x 48 mm
in front panel size 2



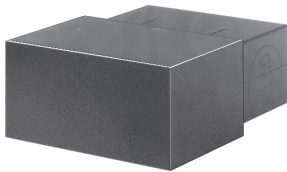
Order-Nr. 1 405 696



1 counter 24 x 48 mm
1 counter 48 x 48 mm
in front panel size 3



Order-Nr. 1 405 693



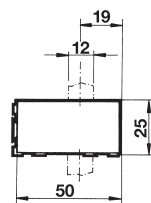
ORDER INFORMATION



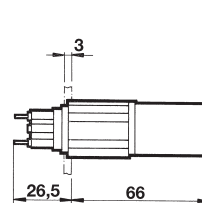
■ For filling a prepared counter cutout

Dummy cap size 1	Ordering code 2 651 009
Dummy cap size 2	Ordering code 1 651 018

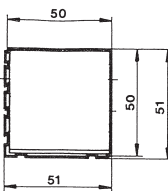
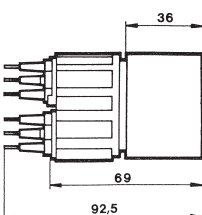
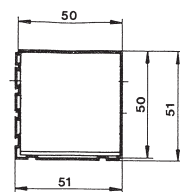
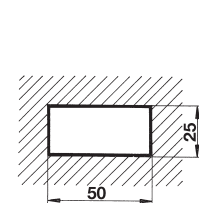
Front view



Side view



Installation cutout



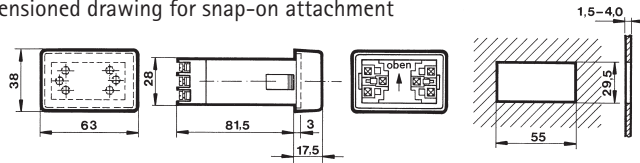
Dimensions in mm

Protective Cases with Screw Terminal Connection

Size 1

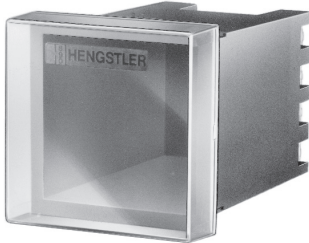


Dimensioned drawing for snap-on attachment

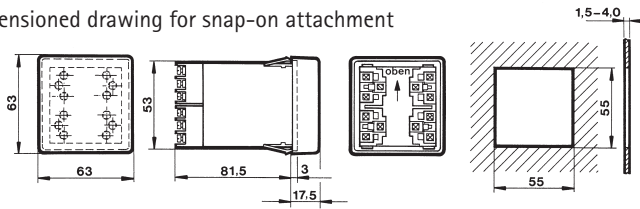


Colour: light grey Ordering code 1 405 588 Spare cover Ordering code 2 405 191*
Dimensions in mm

Size 2

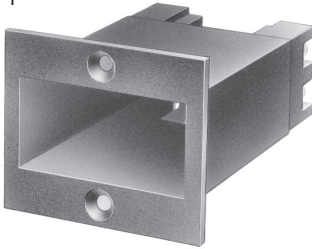


Dimensioned drawing for snap-on attachment

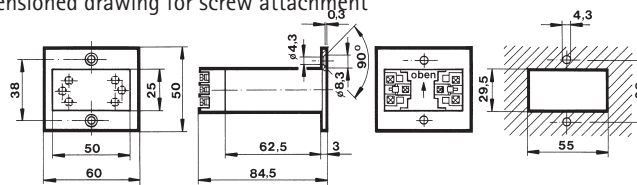


Colour: light grey Ordering code 1 405 666 Spare cover Ordering code 2 405 192*
Dimensions in mm

Size 1

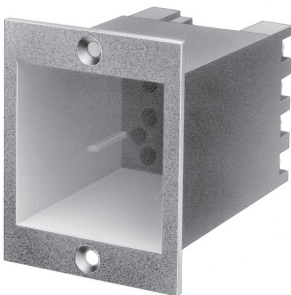


Dimensioned drawing for screw attachment

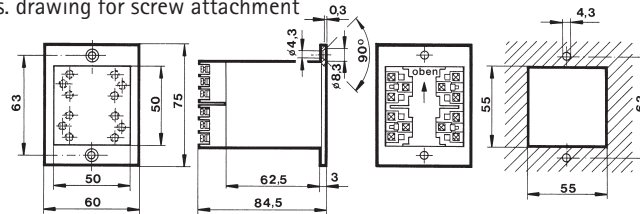


Colour: light grey Ordering code 1 405 562
Colour: black Ordering code 1 405 640 Dimensions in mm

Size 2



Dimens. drawing for screw attachment



Colour: light grey Ordering code 1 405 667
Colour: black Ordering code 1 405 669 Dimensions in mm

* On request

Sealing Covers • Transparent Covers with Protection to IP 65



Size 1



Size 2



Size 1



Size 2

Flexible Vestolit sealing cover with metal frame for panel frames or protective cases size 1-2.

The sealing set enables you to operate a counter through the cover.

Size 1

for screwed front panel 60 x 50 mm

Ordering code 1 405 615, silver colour

Size 2

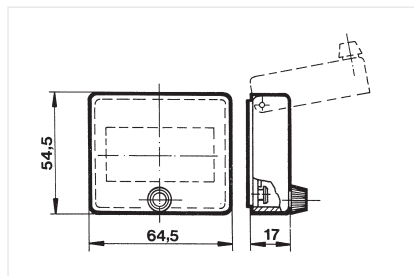
for screwed front panel 60 x 75 mm

Ordering code 1 405 404, silver colour

Ordering code 1 405 587, black

Parts supplied:

Sealing set including metal frame, cover and retaining screws.



Size 1

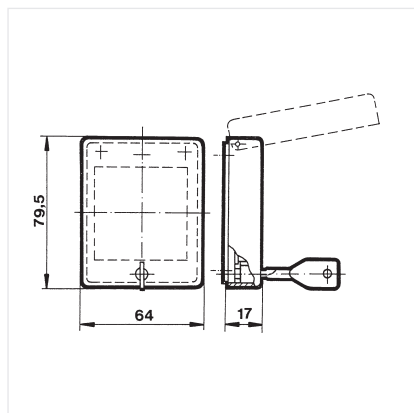
for screwed front panel 60 x 50 mm

with knob

Ordering code 1 405 611

with key lock

Ordering code 1 405 612



Size 2

for screwed front panel 60 x 75 mm

with knob

Ordering code 1 405 613

with key lock

Ordering code 1 405 614

Type 732



Case for Surface- and DIN- Rail Attachment

Case (without counter) Ordering code 1 732 031

Accessories (included):

- circuit board
- screw-connecting terminal
- blindcaps
- wiring material
- supplemental sealings
- frame

(no soldering required)

Type 680



Case for Surface Mounting and DIN Rail Attachment

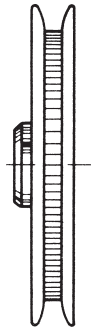
Case (without counters) Ordering code 1 680 089

Delivery includes case compl. with protective case size 2 (12-way connectors) without counters.

Measuring Wheels

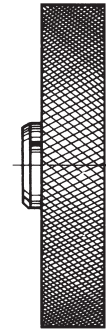
OVERVIEW

Profile 1



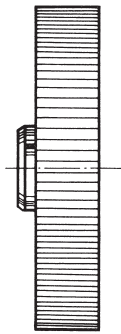
1 with rims, aluminium with fine cross knurling
Used e.g. for threads and yarns

Profile 2



2 Rubber profile, glued on
Used e.g. for paper and cardboard, cable measurement, non-greasy metal, fleece, wood (rough or finished), soft and hard plastic materials;
A = soft, highly adhesive rubber coating
B = good-grip, low-wear rubber

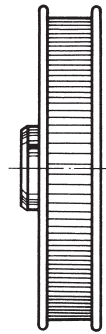
Profile 3/4



3 Rubber coating with parallel knurling, vulcanized
Used e.g. for rubber, leather, textiles, floorings, glass

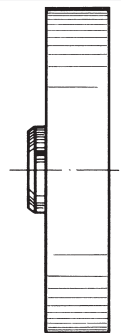
4 Aluminium with parallel knurling
Used e.g. for rubber, soft plastic materials, wood with rough surface, certain textiles

Profile 5



5 With rims, aluminium with parallel knurling
Used e.g. for threads, yarns, ribbons

Profile 6



6 Plastic coated
Used e.g. for wire, greased metals, steel profiles

Measuring Wheels

Use the following measuring wheels for different transmission ratios of counters:

Counter transmission ratio	measuring wheel circumference
5 : 1	0,2 m (1/5 yd.)
2 : 1	0,5 m (1/2 yd.)
1 : 2	0,2 m (1/5 yd.)
1 : 5	0,5 m (1/2 yd.)
1 : 20	0,2 m (1/5 yd.)
1 : 50	0,5 m (1/2 yd.)

ORDER INFORMATION Aluminium

Circumf.	Profile	Width of contact surf. mm	Bore \varnothing			
			4.0 mm	6.0 mm	7.0 mm	10.0 mm
0,2 m	1	4	0 601 014		0 601 017	--
	2 A	12	0 601 018	--	--	--
	2 B	12	0 601 118	0 601 048	--	0 601 049
	2 A	24	0 601 020	--	0 601 092	--
	2 B	24	--	--	0 601 192	--
	4	20,5	0 601 023	--		
	4	20	--		0 601 093	--
0,5 m	5	16,5	0 601 026	--	0 601 094	--
	2 A	25	--	--	0 601 050	--
	2 B				0 601 150	0 601 151
	3	25	--	--	0 601 059	0 601 156
	4	25	--	--	0 601 121	0 601 157
	6	25	--	--	0 601 063	0 601 163
1/5 yd.	1	4	0 601 034	--	0 601 037	--
	5	16,5	--	--	0 601 096	--
1 ft	2 A	25	--	--	0 601 071	--
	2 B	25	--	--	0 601 171	--
0,2 m	1	4	0 601 100	--	--	--
0,5 m	4	25			0 601 301	--
	6	25	--	--	0 601 300	--

PLASTIC

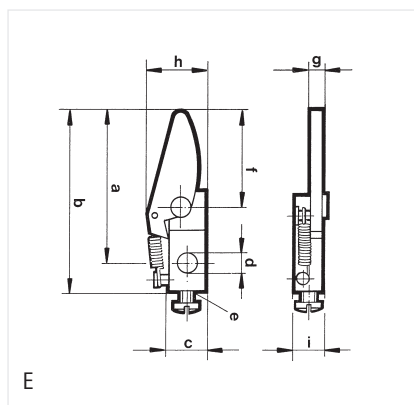
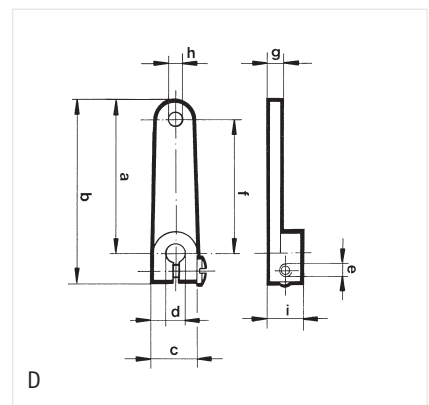
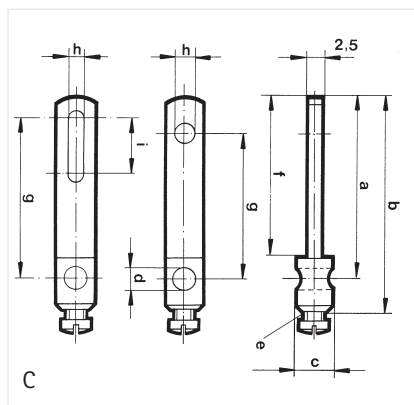
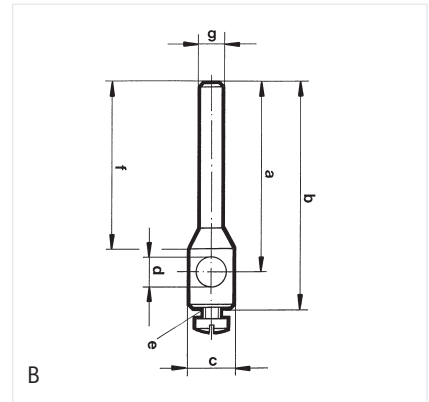
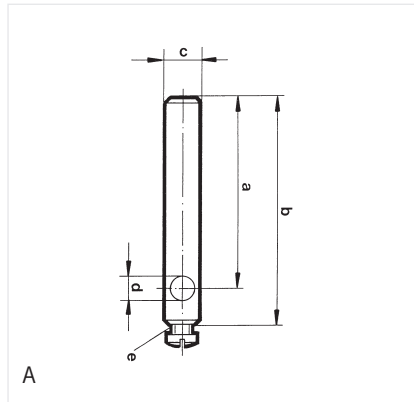
Inquire for other measuring wheels

Stroke Levers

OVERVIEW

This overview shows different kinds of levers available. The stroke levers are not supplied with the counters and must be ordered separately.

A "standard lever" is stated with the order information for mechanical stroke counters.



DIMENSION TABLE

Technical data

Stroke Levers

Ordering code	a	b	c	d	e	f	g	h	i
0 600 003	34	40,5	∅ 8	∅ 5	M 3	29,5	∅ 4	--	--
0 600 005	45	55	∅ 10	∅ 7	M 4	41	∅ 5	--	--
0 600 007	26	31,5	∅ 7	∅ 3	M 2,6	21,2	--	--	--
0 600 009	22	28	∅ 7	∅ 4	M 4	18	18	3	11
0 600 010	28,7	33,7	8	∅ 3	M 2,6	25,4	1,8	2,5	5,5
0 600 012	28,2	33,5	7	∅ 3	M 2,6	17,8	2	10,7	5
0 600 013	28,2	33,5	7	∅ 4	M 4	17,8	2	10,7	5
0 600 026	35,5	41,5	∅ 7	∅ 4	M 4	31,5	∅ 3,5	--	--
0 600 047	27,5	35	7	∅ 4	M 3	24	2,5	2	6
0 600 126	35	41,5	∅ 6	∅ 4	M 4	--	--	--	--

ORDER INFORMATION

Bore ∅ mm	A	B	Shape C	D	E
3	--	--	0 600 007	0 600 010	0 600 012
4	0 600 126	0 600 026	0 600 009*	0 600 047*	0 600 013
5	--	0 600 003	--	--	--
7	--	0 600 005	--	--	--

* on request
Inquire for other stroke levers



Flat steel bar

Mounting Frame

This mounting frame is designed for the installation of mechanical counters type 225 and 250.

The mounting frame is attached by means of four countersunk screws (supplied with the frame). The counter

can easily be installed once the frame is in place. Slide the counter into the mounting frame and fasten to the baseplate from below.

Mounting frame for counters type 225 or 250, complete Ordering code 1 250 056

Flat steel bar for the installation of connection boxes of the modular system 400
12 x 3 x 105 mm
For description see installation instructions

Order information Ord. code 2 405 058