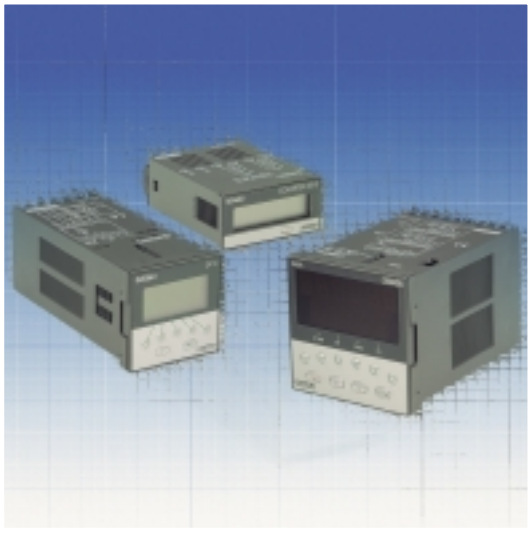
Crouzet®

Counters



- Front Panel Mounting
- Backlit LCD Display
- Totaliser or Preset
- Totaliser / Ratemeter
- Batch Counter

CONTENTS

Counters

TOTALISER 2231/2232 - 24 X 48mm

- **8 digit LCD 7mm high**
- **Solid state, contact or voltage input**
- **Battery powered (8 years of life)**
- **Front panel or remote reset**
- **DIN 24 x 48mm housing**

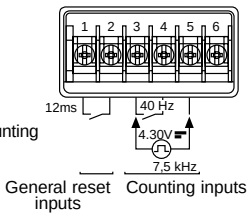
GENERAL SPECIFICATIONS

Display:	8 digit LCD
Height of digits:	7mm
Counting capacity:	0 - 99 999 999
INPUTS	
2231	1 input for slow count signal from volt-free contact or open collector NPN transistor (terminals 3-4)
	1 input for high speed count signal from voltage level (terminals 3-4)
	Low = 0 - 0.7 V dc : High = 4 - 30 V dc
2232	1 input for slow counting 2 voltage levels
	terminals 4 - 5 : 5 - 50 V ac/dc
	terminals 5 - 6 : 48 - 240 V ac
RESET	
Front panel:	Switch no2 to OFF Inhibited Switch no2 to ON Allowed
External:	2231 Volt-free contact or open collector NPN transistor (terminals 1-2)
	2232 Voltage terminals 2 - 3 5 - 50 V ac/dc terminals 1 -2 48 - 240 V ac
	The reset is electrically isolated from the count input

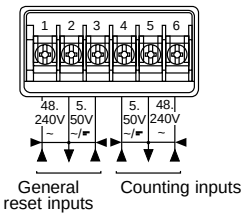
COUNTING SPEED	
Slow counting:	40 Hz max
Minimum pulse time:	Low - 12 ms : High - 12ms
High speed counting (2231):	7. 5 kHz max.
Minimum pulse time:	Low - 70µs : High - 70µs
Input levels:	4 - 30 VDC
Input impedance:	3.5kΩ min.
SUPPLY	
1 lithium battery	8 years life
	Supply can be switched off from dipswitch no 1 situated underneath the unit
PHYSICAL DETAILS	
Material:	Self-quenching ABS
Connection:	by 6 screw terminals at rear of casing
Wire size:	2 x 1.5 mm2
Front panel protection:	IP 66
Temperature limits:	Use -10 + 55 °C : Stored - 20 + 70°C
Conformity:	VDE 0110 - IEC 664 - IEC 348 - IEC 255.4 - IEC 255.5 - IEC 801.2 - IEC 801.4 - UL/CSA
Weight:	2231 60g 2232 65g

TERMINAL IDENTIFICATION

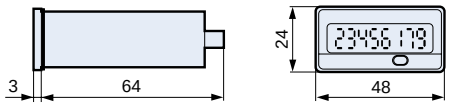
2231
1 - Reset input
2 - 0V Reset
3 - 0V Counting
4 - Slow counting
5 - High-speed counting



2232
1 - Reset 48 to 240V ac
2 - 0V Reset
3 - Reset 5 to 50V ac/dc
4 - 5 to 50 V ac/dc
5 - 0V
6 - 48 to 240 V ac



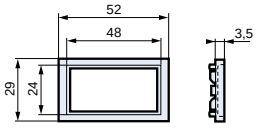
DIMENSIONS



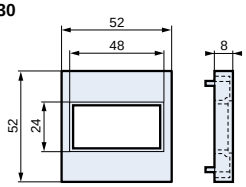
Panel cut-out: 22 x 44.8 mm

ACCESSORIES

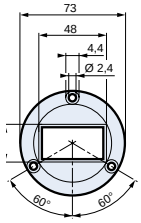
Adaptor for Cut-out 25 x 50 mm
26 546 829



Adaptor for Cut-out 45 x 45 mm
26 546 830



Adaptor for Cut-out Ø 50 mm
26 546 831



ORDERING GUIDE

Type	Input type (count or reset)	Part number
2231	NPN transistor/voltage 4-30Vdc/contact	87 610 040
2232	Voltage 5 to 50Vac/dc or 48 to 240Vac	87 610 050
Adaptor for panel cut-out 25 x 50		26 546 829
Adaptor for panel cut-out 45 x 45		26 546 830
Adaptor for panel cut-out dia 50mm		26 546 831

TOTAL/PARTIAL TOTAL COUNTER
2293/2294 - 24 X 48mm

- **8 digit LCD 7mm high**
- **Solid state, contact or voltage input**
- **Battery powered (5 years life)**
- **Front panel or remote reset**
- **DIN 24 x 48mm housing**

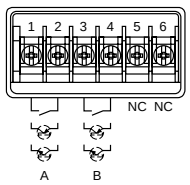
GENERAL SPECIFICATIONS

Display:	8 digit LCD
Height of digits:	7mm
Counting capacity:	0 - 99 999 999
INPUTS	
2293	One count input by volt-free contact or open collector NPN/PNP transistor (terminals 3-4) Minimum time closed 40 ms
2294	1 counting input 2 voltage levels terminals 4 - 5 : 5 - 50 V ac/dc terminals 5 - 6 : 48 - 240 V ac The inputs are electrically isolated from one another
RESET	
Front panel:	Always enabled for partial counter
External (Total counter)	2293 Volt-free contact or open collector NPN transistor (terminals 1-2) Minimum time closed 40 ms 2294 Voltage terminals 2 - 3 : 5 - 50 V ac/dc terminals 1 - 2 : 48 - 240 V ac Minimum time closed 40 ms The reset is electrically isolated from the count input (2294 only)

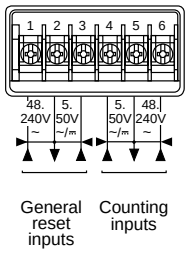
COUNTING SPEED	
2293	Selectable from DIP switch no.4 14 or 100 Hz max
2294	14 Hz max
Slow counting:	(14 Hz max.)
Minimum pulse time:	Low = 35 ms : High = 35 ms
High speed counting:	100 Hz max.
Minimum pulse time:	Low = 5 ms : High = 5 ms
SUPPLY	
1 lithium battery	5 years life Supply can be switched off from dipswitch no 3 situated underneath the unit
PHYSICAL DETAILS	
Material:	Self-quenching ABS
Connection:	by 6 screw terminals at rear of casing
Wire size:	2 x 1.5 mm2
Front panel protection:	IP 66
Temperature limits:	Use -10 + 55 °C : Stored - 20 + 70°C
Conformity:	VDE 0110 - IEC 664 - IEC 348 - IEC 255.4 - IEC 255.5 - IEC 801.2 - IEC 801.4
Weight:	2293 - 60g : 2294 - 65g

TERMINAL IDENTIFICATION

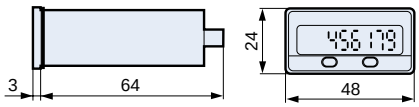
2293
1 - General reset input
2 - General reset common
3 - Count common
4 - Counting
5 - Not connected
6 - Not connected



2294
1 - Reset 48 to 240V ac
2 - General reset common
3 - Reset 5 to 50V ac/dc
4 - 5 to 50 V ac
5 - Count common
6 - 48 to 240 V ac



DIMENSIONS

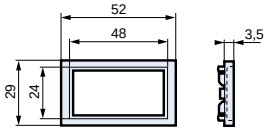


Panel cut-out : 22 x 44.8 mm

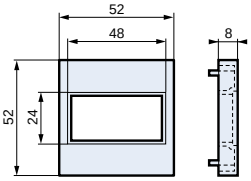
ACCESSORIES

Dimensions

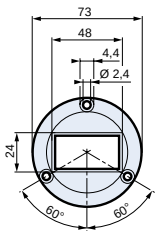
Adaptor for Cut-out 25 x 50 mm
26 546 829



Adaptor for Cut-out 45 x 45 mm
26 546 830



Adaptor for Cut-out Ø 50 mm
26 546 831



ORDERING GUIDE

Type	Input type (count or reset)	Part number
2293	NPN-PNP transistor/contact	87 610 240
2294	Voltage 5 to 50Vac/dc or 48 to 240Vac	87 610 250
Adaptor for panel cut-out 25 x 50		26 546 829
Adaptor for panel cut-out 45 x 45		26 546 830
Adaptor for panel cut-out dia 50mm		26 546 831

TOTALISER/HOURS COUNTER

2108/2108H 24x48mm

- **8 digit totaliser (2108)/6 digit hours counter (2108H)**
- **Low cost**
- **Battery powered up to 8 years life**
- **7mm high LCD display**
- **DIN 24 x 48mm housing**

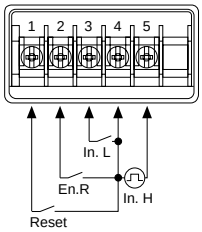
GENERAL SPECIFICATIONS

		2108	2108H
Function:		Impulse counter	Hour counter/chronometer
Solid state input:		✓	✓
Display:		8-digit LCD	6-digit LCD
Height of digits:		7 mm	7 mm
Counting capacity:		0 - 99,999,999	
Time ranges:			0 - 99,999.9 h 0 - 99,999.9 min 0 - 99,999.9 s 0 - 99 h 59 min 59 s
Time base:			Quartz (precision ± 50 ppm)
Possibility of reloading current value:			✓
INPUTS			
Volt-free contact:			1 Start/Stop input 40 ms min (terminals 3-5)
			1 Reset input 100 ms min (terminals 1-3)
			1 Prog input (terminals 3-4)
			1 Authorised reset input (terminals 1-2)
Slow counting input:		40 Hz max.	
In.L:	T OFF	12 ms min.	
	T ON	12 ms min.	
	Current output	52 µA max.	
	Leakage current in OFF state	0.2 µA max.	
	Residual voltage	0.4 V max.	
	Volt-free contact or transistor	✓	
	NPN open collector	✓	

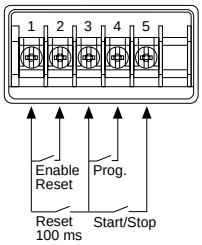
		2108	2108H
High-speed input:		7 kHz max	
In.H:	T OFF.	70 ms min.	
	T ON	70 ms min.	
	Level 0	0 at 1 VDC	
	Level 1	4 at 30 VDC	
	Current consumption	6 mA max. at 24 VDC	
Reset:	Volt-free contact or transistor	✓	✓
	NPN open collector	12 ms min.	100 ms min.
Reset via:		Front panel	Front panel
OPERATION AND USE			
Material		Self-extinguishing	Self-extinguishing
Connection via screw terminals on rear		5 terminals	5 terminals
Terminal capacity		2 x 1.5 mm²	2 x 1.5 mm²
Fixed using bracket		-	-
Front panel protection		IP 64	IP 64
Temperature limits	Use	0 + 55° C	0 + 55° C
	Stored	- 25 + 70° C	- 25 + 70° C
Conformity to standards		VDE 0110 - IEC 664 - IEC 348 - IEC 255.4 - IEC 255.5 - IEC 801.2 - IEC 801.4	
Weight		60 g	60 g
POWER SUPPLY			
1 lithium battery - Service life		8 years	5 years

TERMINAL IDENTIFICATION

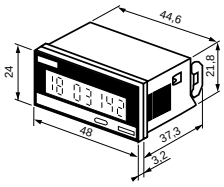
2108
Terminals:
1 - Reset input
2 - Enable Reset
3 - Slow counting
4 - 0V
5 - High-speed counting



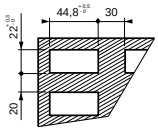
2108H
Terminals :
1 - Reset input
2 - Enable Reset
3 - Common
4 - Prog.
5 - Start/Stop



DIMENSIONS

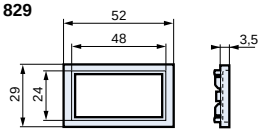


Panel cut-out

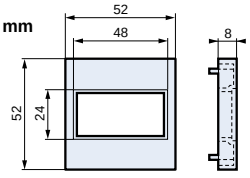


ACCESSORIES

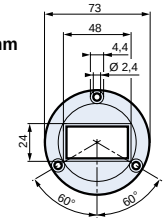
Adaptor for Cut-out 25 x 50 mm
26 546 829



Adaptor for Cut-out 45 x 45 mm
26 546 830



Adaptor for Cut-out Ø 50 mm
26 546 831



ORDERING GUIDE

Type	Input type (count or reset)	Part number
2108	NPN transistor/voltage 4-30Vdc/contact	87 610 340
2108H	contact	87 610 440
Adaptor for panel cut-out 25 x 50		26 546 829
Adaptor for panel cut-out 45 x 45		26 546 830
Adaptor for panel cut-out dia 50mm		26 546 831

HOURS COUNTER 2213/2214 - 24 X 48mm

CE

- **6 digit LCD 7mm high**
- **Solid state, contact or voltage input**
- **Battery powered (5 years of life)**
- **Front panel or remote reset**
- **DIN 24 x 48mm housing**

GENERAL SPECIFICATIONS

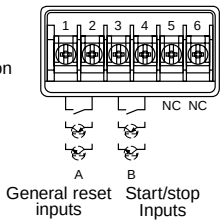
Display:	6 digit LCD
Height of digits:	7mm
TIME RANGES	
	0 - 99 999.9 h 0 - 99 999.9 min 0 - 99 999.9 s 0 - 99 h 59 min 59 s
	Possibility to load the current value
INPUTS	
2213	One start/stop input by volt-free contact or open collector NPN/PNP transistor (terminals 3-4)
	Minimum time closed 40 ms
2214	One start/stop input 2 voltage levels
	terminals 4 - 5 : 5 - 50 V ac/dc
	terminals 5 - 6 : 48 - 240 V ac
	Minimum pulse time (ac) 50 ms
	Minimum pulse time (dc) 35 ms
RESET	
Front panel:	DIP switch no.2 to OFF Inhibited DIP switch no.2 to ON Allowed

External	2213	Volt-free contact or open collector transistor (terminals 1-2) Minimum time closed = 40 ms
	2214	Voltage terminals 1 - 2 : 48 - 240 V ac terminals 2 - 3 : 5 - 50 V ac/dc Minimum pulse time = 40 ms
		The reset is electrically isolated from the count input (2214 only)
SUPPLY		
1 lithium battery		5 years life
		Supply can be switched off from dipswitch no 1 situated underneath the unit
PHYSICAL DETAILS		
Material:		Self-quenching ABS
Connection:		(by 6 screw terminals at rear of casing)
Wire size:		2 x 1.5 mm2
Front panel protection:		IP 66
Temperature limits:		Operation -10 + 55 °C : Storage - 20 + 70°C
Conformity:		VDE 0110 - IEC 664 - IEC 348 - IEC 255.4 - IEC 255.5 - IEC 801.2 - IEC 801.4
Weight:		2213 - 60g 2214 - 65g

TERMINAL IDENTIFICATION

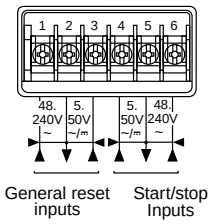
2213

1 - Reset input
2 - Reset common
3 - Start/stop common
4 - Start/stop input
5 - Not connected
6 - Not connected

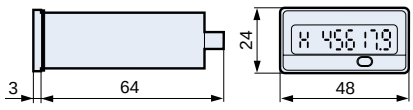


2214

1 - Reset 48 to 240V ac
2 - Reset common
3 - Reset 5 to 50V ac/dc
4 - 5 to 50 V ac
5 - Start/stop common
6 - 48 to 240 V ac



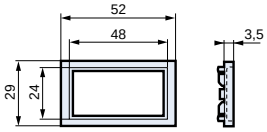
DIMENSIONS



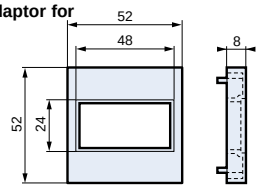
Panel cut-out : 22 x 44.8 mm

ACCESSORIES

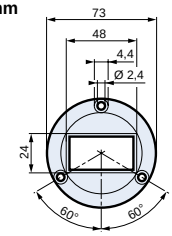
Adaptor for
Cut-out 25 x 50 mm
26 546 829



Cut-out 45 x 45 mm
26 546 830
Adaptor for



Cut-out Ø 50 mm
26 546 831
Adaptor for



ORDERING GUIDE

Type	Input type (count or reset)	Part number
2213	NPN-PNP transistor/contact	87 610 140
2214	Voltage 5 to 50Vac/dc or 48 to 240Vac	87 610 150
Adaptor for panel cut-out 25 x 50		26 546 829
Adaptor for panel cut-out 45 x 45		26 546 830
Adaptor for panel cut-out dia 50mm		26 546 831

TOTALISER/RATEMETER 3253/3293 - 36 X 72mm

CE

- **8 digit LCD 10mm high (6 digit for ratemeter mode)**
- **Solid state, contact or voltage input**
- **Battery powered (8 years life)**
- **Front panel or remote reset**
- **DIN 36 x 72mm housing**
- **3253 = ratemeter: 3293 = totaliser + ratemeter**

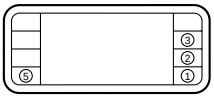
GENERAL SPECIFICATIONS

Types	3253	3293
Totalizer/counter:		
Ratemeter:	✓	
Totalizer and Ratemeter:		✓
Display:		
Totaliser mode	–	8 digit LCD, height 10mm
Tachometer mode	6 digit LCD, height 10mm	6 digit LCD, height 10mm
Overrun of max. count capacity indicated by asterisk at bottom right:	–	✓
INPUTS		
1 low-speed count input for contact closure or open-collector NPN transistor input:	terminals 1 and 2	terminals 1 and 2
Max. frequency:	20 Hz	20 Hz
Min. contact-closed time:	10 ms	10 ms
Min. contact-open time:	20 ms	20 ms
1 input for high speed count signal from voltage level:	terminals 1 and 3	terminals 1 and 3
Max. frequency:	5 kHz (5/coef. if coef>1)	5 kHz (5/coef. if coef>1)
High:	3 - 30 V dc	3 - 30 V dc
Low:	0 - 0.7 V dc	0 - 0.7 V dc
Minimum pulse time:	–	–
RESET		
External: terminals 1 and 4 Volt-free contact	–	✓
Open collector NPN transistor	–	(Only for totalizer mode)
Minimum pulse time	–	12 ms
Front panel:	–	if enabled at time of programming

Types	3253	3293
Input impedance:	26 KΩ/+3 V dc (High speed counting) 100kΩ/+3V dc (Slow counting)	26 KΩ/+3 V dc (High speed counting) 100kΩ/+3V dc (Slow counting)
Tachometer mode: Type	Reciprocal 1/Tau	Reciprocal 1/Tau
Accuracy	±0.2%	±0.2%
Sampling time	0.7s	0.7s
Timit limit for measuring	10 s	10 s
Scale factor: Tachometer mode	0.001 - 9999 (0 not permitted)	0.001 - 9999 (0 not permitted)
Totaliser mode	–	0.0001 - 99.9999
Decimal point: Tachometer mode	4 programmable positions	4 programmable positions
Totaliser mode	–	5 programmable positions
Rate:	x1 or x10	x1 or x10 only for ratemeter
Time base:	Crystal controlled	Crystal controlled
Lithium battery:	3 V dc	3 V dc
Life:	8 years	8 years
A power supply must be provided for a sensor (12V):	✓	✓
PHYSICAL DETAILS		
Material:	Self-quenching (UL94VO)	
Front panel protection:	IP56	IP56
Mounting:	Panel-mounting - slide-action clips	
Connections at rear of case:	Screw terminals	Screw terminals
Waterproof gasket for panel sealing:	✓	✓
Temperature limits: Use	0 °C + 55 °C	0 °C + 55 °C
Stored	0 °C + 70 °C	0 °C + 70 °C
Weight:	60g	60g

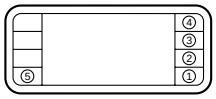
TERMINAL IDENTIFICATION

Type 3253



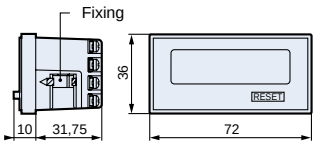
1 - Common 0 V
2 - Slow counting input
3 - High-speed counting input
5 - Programming

Type 3293



1 - Common 0 V
2 - Slow counting input
3 - High-speed counting input
4 - Remote reset
5 - Programming

DIMENSIONS



Panel cut-out : 33 x 68

ORDERING GUIDE

Type	Function	Input type (count or reset)	Part number
3253	Ratemeter	NPN-PNP transistor/contact/voltage	87 614 340
3293	Totaliser/ratemeter	NPN-PNP transistor/contact/voltage	87 614 440

PRESET UP/DOWN COUNTER
4141/4142/4144 - 48 X 48mm

- **5 digit back-lit LCD display**
- **Solid state, contact or voltage input**
- **Simultaneous display of count and preset value**
- **Front panel or remote reset**
- **DIN 48 x 48mm housing**
- **Built in sensor supply (12Vdc)**

GENERAL SPECIFICATIONS

Function:	Preselection up/down counter
Number of presets:	1 or 2
Back-lit LCD display:	Current value 5 digits
	Preset 5 digits
Height of digits:	Current value 8 mm
	Preset 4 mm
Display details:	-9999 +99 999
	Simultaneous readout of count value and preset
INPUT	
	2 counting inputs IN1, IN2
Input modes:	4141/4142 UP, DN, PH
	4144 DIR, IND, CUMUL, PH
Input by contact, voltage or solid state device for 3-wire and 2-wire detection using external resistor (NPN or PNP if present)	
Counting speed:	5 kHZ or 30 Hz (debounce mode)
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10KΩ
RESET	
Reset to zero or to preset:	From front panel: if not protected in programming phase
	Electrical: by contact, voltage or solid state device (NPN or PNP if present)

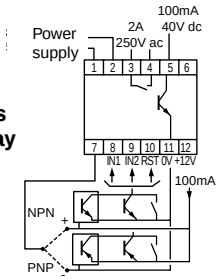
Minimum pulse time:	5 ms
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10KΩ
Option to protect against reset from front panel	
Scale factor (each input pulse is multiplied by this figure):	00.001 - 99.999
Decimal point selectable for ease of reading:	XXXXX, XXXX.X, XXX.XX, XX.XXX
Sensor supply:	Version ac : 12V/100 mA Version dc : Un - 2V/100 mA
Configuration:	Settings and current count saved in EEPROM memory
OUTPUTS	
Solid state	
Type:	NPN open collector
Maximum current:	100 mA
Maximum voltage:	40 V dc
Voltage drop:	<1.5V
Response time:	<250µs
Relay	
Current rating:	2 A
Maximum voltage:	250 V ac
Max. contact rating (resistive) AC1:	500 VA
Response time:	< 10 ms
Mechanical life:	$3x10^6$ (operations)

No of operations. at 2 A, AC1:	$3x10^5$
Output modes:	maintained or pulsed t = 500 ms
Single shot or repetitive (immediate auto reset)	
Supply:	10 - 30 V dc
(min/max values)	20 - 55 V ac
	80 - 260 V ac
Consumption:	dc Version 4 W ac Version 11 VA
PHYSICAL DETAILS	
Immunity from micro power cuts:	10 ms
Relative humidity (without condensation):	95%
Material:	Self-extinguishing ABS
Connection:	by screw terminals
Terminal capacity:	2 x 1.5 mm^2
Front panel fixing:	by clip
Front panel protection:	IP54
Temperature limits:	Use 0 +55 °C Stored -25 +70 °C
Weight:	dc Version : 150 g ac Version : 170 g

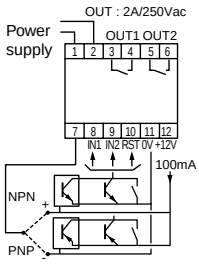
WIRING DIAGRAMS

87 618 018
87 618 014
87 618 012

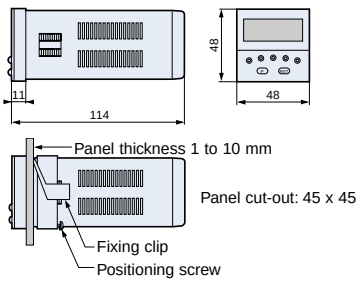
N.B versions with c/o relay are also available



87 618 028
87 618 024
87 618 022
87 618 038
87 618 034
87 618 032



DIMENSIONS



ORDERING GUIDE

Type	Supply voltage	Input modes	Output type	Part number
4141	80 - 260 Vac	UP/DN/PH	1 preset contact and solid state output	87 618 018
4141	20 - 55 Vac	UP/DN/PH	1 preset contact and solid state output	87 618 014
4141	10 - 30 Vdc	UP/DN/PH	1 preset contact and solid state output	87 618 012
4142	80 - 260 Vac	UP/DN/PH	2 preset contact output	87 618 028
4142	20 - 55 Vac	UP/DN/PH	2 preset contact output	87 618 024
4142	10 - 30 Vdc	UP/DN/PH	2 preset contact output	87 618 022
4144	80 - 260 Vac	DIR/IND/CUMUL/PH	2 preset contact output	87 618 038
4144	20 -55 Vac	DIR/IND/CUMUL/PH	2 preset contact output	87 618 034
4144	10 - 30 Vdc	DIR/IND/CUMUL/PH	2 preset contact output	87 618 032

PRESET UP/DOWN COUNTER
4341/4342/4344 - 48 X 48mm

- **5 digit red illuminated display**
- **Solid state, contact or voltage input**
- **Simultaneous display of count and preset value**
- **Front panel or remote reset**
- **DIN 48 x 48mm housing**
- **Built in sensor supply (12Vdc)**

GENERAL SPECIFICATIONS

Function:	Preselection up/down counter	
Number of presets:	1 or 2	
Red illuminated display:	Current value	5 digits
	Preset	5 digits
Height of digits:	Current value	8 mm
	Preset	4 mm
Display details:	-9999 +99 999	
	Simultaneous readout of count value and preset	
INPUT		
	2 counting inputs IN1, IN2	
Input modes:	4341 4342 UP, DN, PH	
	4344 DIR, IND, CUMUL, PH	
Input by contact, voltage or solid state device for 3-wire and 2-wire detection using external resistor (NPN or PNP if present)		
Counting speed:	5 kHZ or 30 Hz(de - bounce mode)	
Low level:	0 - 1 V dc	
High level:	4 - 30 V dc	
Impedance:	10KΩ	
RESET		
Reset to zero or to preset:	From front panel: if not protected in programming phase	
	Electrical: by contact, voltage or solid state device (NPN or PNP if present)	

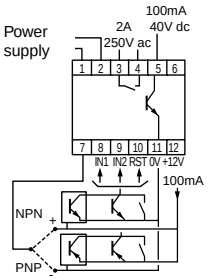
Minimum pulse time:	5 ms
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10 KΩ
Option to protect against reset from front panel	
Scale factor (each input pulse is multiplied by this figure):	00.001 - 99.999
Decimal point selectable for ease of reading:	XXXXX, XXXX.X, XXX.XX, XX.XXX
Sensor supply:	ac Version : 12Vdc/100 mA dc Version : Un - 2V/100 mA
Configuration:	Settings and current count saved in EEPROM memory
OUTPUTS	
Solid state	
Type:	NPN open collector
Maximum current:	100 mA
Maximum voltage:	40 V dc
Voltage drop:	<1.5V
Response time:	<250µs
Relay	
Current rating:	2 A
Maximum voltage:	250 V ac
Max. contact rating (resistive) AC1:	500 VA
Response time:	< 10 ms
Mechanical life:	$3x10^6$ (operations)

No of operations at 2 A, AC1:	$3x10^5$
Output modes:	maintained or pulsed t = 500 ms
Single shot or repetitive (immediate auto reset)	
Supply: (min/max values)	10 - 30 V dc
	20 - 55 V ac
	80 - 260 V ac
Consumption:	dc Version 4 W ac Version 11 VA
PHYSICAL DETAILS	
Immunity from micro power cuts:	10 ms
Relative humidity (without condensation):	95%
Material:	Self-extinguishing ABS
Connection:	by screw terminals
Terminal capacity:	2 x 1.5 mm2
Front panel fixing:	by clip
Front panel protection:	IP54
Temperature limits:	Use 0 +55 °C Stored -25 +70 °C
Weight:	dc Version 150 g ac Version 170 g

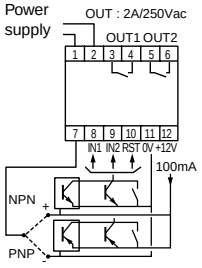
WIRING DIAGRAMS

87 618 118
87 618 114
87 618 112

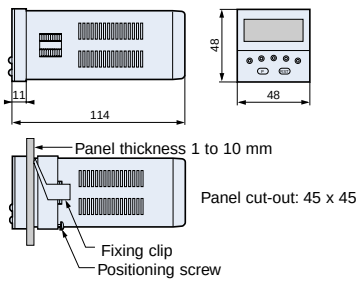
N.B versions with c/o relay are also available



87 618 128
87 618 124
87 618 122
87 618 138
87 618 134
87 618 132



DIMENSIONS



ORDERING GUIDE

Type	Supply voltage	Input modes	Output type	Part number
4341	80 - 260 Vac	UP/DN/PH	1 preset contact and solid state output	87 618 118
4341	20 - 55 Vac	UP/DN/PH	1 preset contact and solid state output	87 618 114
4341	10 - 30 Vdc	UP/DN/PH	1 preset contact and solid state output	87 618 112
4342	80 - 260 Vac	UP/DN/PH	2 preset contact output	87 618 128
4342	20 - 55 Vac	UP/DN/PH	2 preset contact output	87 618 124
4342	10 - 30 Vdc	UP/DN/PH	2 preset contact output	87 618 122
4344	80 - 260 Vac	DIR/IND/CUMUL/PH	2 preset contact output	87 618 138
4344	20 -55 Vac	DIR/IND/CUMUL/PH	2 preset contact output	87 618 134
4344	10 - 30 Vdc	DIR/IND/CUMUL/PH	2 preset contact output	87 618 132

PRESET UP/DOWN COUNTER

7141/7142 - 72 X 72mm

- **6 digit back-lit LCD display**
- **Solid state, contact or voltage input**
- **Simultaneous display of count and preset value**
- **Front panel or remote reset**
- **DIN 72 x 72mm housing**
- **Built in sensor supply (12Vdc)**
- **7141 = 1 preset output**
- **7142 = 2 preset outputs**

GENERAL SPECIFICATIONS

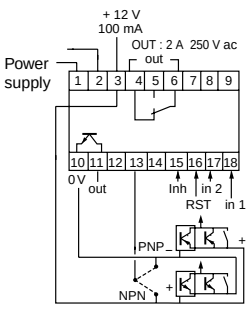
Function:	Preselection up/down counter
Number of presets:	1 or 2
Back-lit LCD or red illuminated display:	Current value 6 digits Preset 6 digits
Height of digits:	Current value 10 mm Preset 5.5 mm
Display details:	-99 999 +999 999
INPUTS	
	2 counting inputs IN1, IN2, 1 inhibit input
Input modes:	UP, DN, CUMUL, DIR, PHASE, PHASE x 2, PHASE x 4
Input by Contact, voltage or solid state (NPN/PNP by switch)	
Counting speed:	5 kHZ (2.5 kHz in phase x 4)
	30 Hz in debounce mode
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10KΩ
RESET	
Reset to zero or preset value during count cycle:	From front panel: if not protected in programming phase
	Electrical: by contact, voltage or solid state device (NPN or PNP if present)

Minimum pulse time:	5 ms
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10 KΩ
Option to protect against reset from front panel	
Scale factor (each input pulse is multiplied by this figure):	00.0001 - 99.9999
Decimal point selectable for ease of reading:	XXXXXX, XXXXX.X, XXXX.XX, XXX.XXX, XX.XXXX
Sensor supply:	ac Version :12Vdc/100 mA dc Version : Un - 2V/100 mA
Configuration:	Programming and current value backed up via EEPROM memory
OUTPUTS	
Solid state	
Type:	NPN open collector
Maximum current:	100 mA
Maximum voltage:	40 V dc
Voltage drop:	<1.5V
Response time:	<250µs
Electrical life at I max. resistive:	10^5
Relay: 1 or 2 changeover relays	
Current rating:	2 A
Maximum voltage:	250 V ac
Max. contact rating (resistive) AC1:	500 VA
Response time:	< 10 ms

Mechanical life:	$3x10^7$ (operations)
Electrical life at I max. resistive AC1:	$3x10^5$
Output modes:	maintained or pulsed (fixed pulse duration) t = 500 ms
Single shot or repetitive (immediate auto reset)	
Supply (min/max values)	10 - 30 V dc
	20 - 55 V ac
	80 - 260 V ac
Consumption:	dc Version < 4 W
	ac Version < 11 VA
PHYSICAL DETAILS	
Immunity from micro power cuts:	10mS
Relative humidity (without condensation):	95%
Material:	Self-extinguishing ABS
Connection:	by screw terminals
Terminal capacity:	2 x 1.5 mm2
Front panel fixing:	by clip
Front panel protection:	IP54
Temperature limits:	Use 0 +55 °C Stored -25 +70 °C
Weight:	dc Version 260 g ac Version 290 g

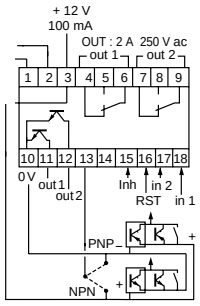
WIRING DIAGRAMS

87 619 018
87 619 014
87 619 012

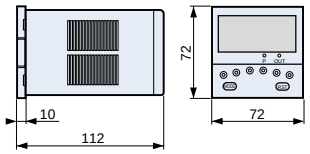


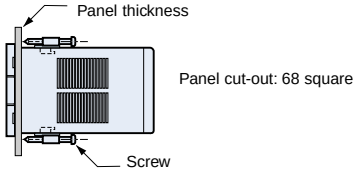
87 619 028
87 619 024
87 619 022

Power supply



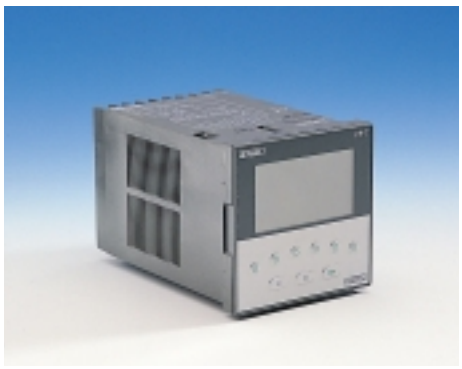
DIMENSIONS





ORDERING GUIDE

Type	Supply voltage	Input modes	Output type	Part number
7141	80 - 260 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	1 preset contact and solid state output	87 619 018
7141	20 - 55 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	1 preset contact and solid state output	87 619 014
7141	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	1 preset contact and solid state output	87 619 012
7142	80 - 260 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 028
7142	20 - 55 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 024
7142	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 022



PRESET UP/DOWN COUNTER

7341/7342 - 72 X 72mm

- **6 digit red illuminated display**
- **Solid state, contact or voltage input**
- **Simultaneous display of count and preset value**
- **Front panel or remote reset**
- **DIN 72 x 72mm housing**
- **Built in sensor supply (12Vdc)**
- **7341 = 1 preset output**
- **7342 = 2 preset outputs**

GENERAL SPECIFICATIONS

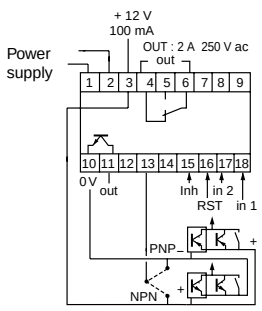
Function:	Preselection up/down counter
Number of presets:	1 or 2
Red illuminated display:	Current value 6 digits
	Preset 6 digits
Height of digits:	Current value 10 mm
	Preset 5.5 mm
Display details:	-99 999 +999 999
INPUTS	
	2 counting inputs IN1,IN2, 1 inhibit input
Input modes:	UP, DN, CUMUL, DIR, PHASE, PHASE x 2, PHASE x 4
Input by Contact; voltage or solid state (NPN/PNP by changeover switch)	
Counting speed:	5 kHZ (2.5 kHz in phase x 4)
	30 Hz in debounce mode
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10KΩ
RESET	
Reset to zero or preset value during count cycle:	From front panel: if not protected in programming phase
	Electrical: by contact, voltage or solid state device (NPN or PNP if present)

Minimum pulse time:	5 ms
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10 KΩ
Option to protect against reset from front panel	
Scale factor (each input pulse is multiplied by this figure):	00.0001 - 99.9999
Decimal point selectable for ease of reading:	XXXXXX, XXXXX.X, XXXX.XX, XXX.XXX, XX.XXXX
Sensor supply:	ac Version : 12Vdc/100 mA
	dc Version : Un - 2V/100 mA
Configuration:	Programming and current value backed up via EEPROM memory
OUTPUTS	
Solid state	
Type:	NPN open collector
Maximum current:	100 mA
Maximum voltage:	40 V dc
Voltage drop:	<1.5V
Response time:	<250µs
Electrical life at I max. resistive:	10^5
Relay: 1 or 2 changeover relays	
Current rating:	2 A
Maximum voltage:	250 V ac
Max. contact rating	

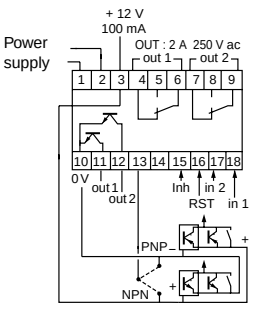
(resistive) AC1:	500 VA
Response time:	< 10 ms
Mechanical life:	3x10 > (operations)
Electrical life at I max. resistive AC1:	3x10 [5]
Output modes:	maintained or pulsed (fixed pulse duration) t = 500 ms
Single shot or repetitive (immediate auto reset)	
Supply (min/max values)	10 - 30 V dc
	20 - 55 V ac
	80 - 260 V ac
Consumption:	dc Version < 4 W
	ac Version < 11 VA
PHYSICAL DETAILS	
Immunity from micro power cuts	10 ms
Relative humidity (without condensation):	95%
Material:	Self-extinguishing ABS
Connection:	by screw terminals
Terminal capacity:	2 x 1.5 mm2
Front panel fixing:	by clip
Front panel protection:	IP54
Temperature limits:	Use 0 +55 °C
	Stored -25 +70 °C
Weight:	dc Version 260 g
	ac Version 290 g

WIRING DIAGRAMS

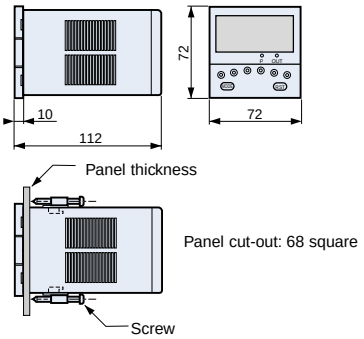
87 619 118
87 619 114
87 619 112



87 619 128
87 619 124
87 619 122



DIMENSIONS



ORDERING GUIDE

Type	Supply voltage	Input modes	Output type	Part number
7341	80 - 260 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	1 preset contact and solid state output	87 619 118
7341	20 - 55 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	1 preset contact and solid state output	87 619 114
7341	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	1 preset contact and solid state output	87 619 112
7342	80 - 260 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 128
7342	20 - 55 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 124
7342	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 122

MULTIFUNCTION PRESET COUNTER

4192/4392 - 48 X 48mm

- **Counter, batch counter, tachometer or chronometer**
- **5 digit back-lit LCD (4192) or red illuminated display (4392)**
- **Solid state, contact or voltage input**
- **Simultaneous display of count and preset value**
- **Front panel or remote reset**
- **DIN 48x48 mm housing**
- **Built in sensor supply (12Vdc)**
- **2 preset outputs**

GENERAL SPECIFICATIONS

Function:	Preselection up/down counter	
Number of presets:	2	
4192 = LCD (backlit)	Current value	5 digits
4392 = red illuminated	Preset	5 digits
Height of digits:	Current value	8 mm
	Preset	4 mm
display details:	-9999 +99 999	
	Simultaneous readout of count value and preset	

INPUT

	2 counting inputs IN1, IN2
Input modes:	UP, DN, IND, CUMUL, DIR, PH, PHx2, PHx4

Input by contact, voltage or solid state device for 3-wire and 2-wire detection using external resistor (NPN or PNP if present)

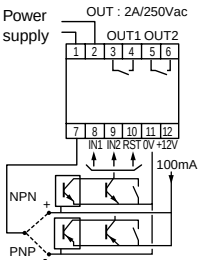
Speed	**Counter**	**Tacho**
UP, DOWN, DIR	7.5 kHz	9.0 kHz
IND, CUMUL (IN1 & IN2 non simultaneous)	7.5 kHz	9.0 kHz
IND,CUMUL (IN1 & IN2 simultaneous)	4.0 kHz	5.0 kHz
PH, PH2	5.0 kHz (Except in batch mode 4.0 kHz)	
PH4	2.5 kHz	4.0 kHz
debounce mode	30Hz	
Low level:	0 - 1 V dc	
High level:	4 - 30 V dc	
Impedance:	10KΩ	

RESET	
Reset to zero or to preset:	From front panel: if not protected in programming phase
	Electrical: by contact, voltage or solid state device (NPN or PNP if present)
Minimum pulse time:	5 ms
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10KΩ
Option to protect against reset from front panel	
Scale factor (each input pulse is multiplied by this figure):	00.001 - 99.999
Decimal point selectable for ease of reading:	XXXXX, XXXX.X, XXX.XX, XX.XXX
Sensor supply:	ac Version : 12V/100 mA dc Version : Un - 2V/100 mA
Configuration:	Settings and current count saved in EEPROM memory
OUTPUTS	
Solid state	
Type:	NPN open collector
Maximum current:	100 mA
Maximum voltage:	40 V dc
Voltage drop:	<1.5V
Response time:	<250µs
Relay	
Current rating:	2 A
Maximum voltage:	250 V ac

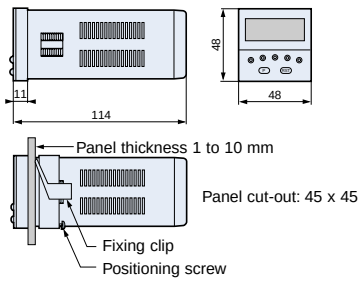
Max. contact rating (resistive) AC1:	500 VA
Response time:	< 10 ms
Mechanical life:	$3x10^6$ (operations)
No of operations at 2 A, AC1:	$3x10^5$
Output modes:	maintained or pulsed where t = 0.1s to 9.9s
Single shot or repetitive (immediate auto reset)	
Supply:	10 - 30 V dc
(min/max values)	20 - 55 V ac
	80 - 260 V ac
Consumption:	dc Version : 4 W ac Version : 11 VA
PHYSICAL DETAILS	
Immunity from micro power cuts:	10 ms
Relative humidity: (without condensation)	95%
Material:	Self-extinguishing ABS
Connection:	by screw terminals
Terminal capacity:	2 x 1.5 mm2
Front panel fixing:	by clip
Front panel protection:	IP54
Temperature limits:	Use 0 +55 °C Stored -25 +70 °C
Weight:	dc Version 150 g ac Version 170 g

WIRING DIAGRAMS

87 618 228
87 618 224
87 618 222
87 618 328
87 618 324
87 618 322



DIMENSIONS



ORDERING GUIDE

Type	**Supply voltage**	**Input modes**	**Output type**	**Part number**
4192	80 - 260 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact output	87 618 228
4192	20 - 55 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact output	87 618 224
4192	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact output	87 618 222
4392	80 - 260 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact output	87 618 328
4392	20 - 55 Vac	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact output	87 618 324
4392	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact output	87 618 322

MULTIFUNCTION PRESET COUNTER

7192/7392 - 72 X 72mm

- **Counter, batch counter, tachometer or chronometer**
- **6 digit back-lit LCD (7192) or red illuminated display (7392)**
- **Solid state, contact or voltage input**
- **Simultaneous display of count and preset value**
- **Front panel or remote reset**
- **DIN 72x72 mm housing**
- **Built in sensor supply (12Vdc)**
- **2 preset outputs**

GENERAL SPECIFICATIONS

Function:	Preselection up/down counter
Number of presets:	2
Back-lit LCD or red illuminated display:	Current value 6 digits Preset 6 digits
Height of digits:	Current value 10 mm Preset 5.5 mm
Display details:	-99 999 - +999 999
INPUTS	
	2 counting inputs IN1, IN2, 1 inhibit input
Input modes:	UP, DN, CUMUL, DIR, PHASE, PHASE x 2, PHASE x 4

Input by Contact, voltage or solid state (NPN/PNP by switch)

Counting speed	**Counter**	**Tacho**	**Totalizer**
UP, DOWN, DIR	7.5 kHz	9.0 kHz	6.0 kHz
IND, CUMUL (IN1 & IN2 non simultaneous)	7.5 kHz	9.0 kHz	6.0 kHz
IND,CUMUL (IN1 & IN2 simultaneous)	4.0 kHz	5.0 kHz	3.0 kHz
PH, PH2	5.0 kHz	4.0 kHz	3.5 kHz
	(Except in batch mode)		
PH4	2.5 kHz	4.0 kHz	1.5 kHz
debounce mode	30Hz		

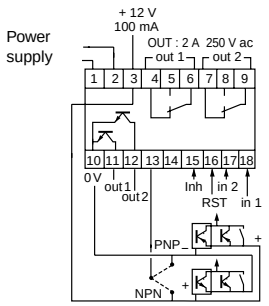
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10KΩ

RESET	
Reset to zero or preset value during count cycle:	From front panel: if not protected in programming phase
	Electrical: by contact, voltage or solid state device (NPN or PNP if present)
Minimum pulse time:	5 ms
Low level:	0 - 1 V dc
High level:	4 - 30 V dc
Impedance:	10 KΩ
Option to protect against reset from front panel	
Scale factor (each input pulse is multiplied by this figure):	00.0001 - 99.9999
Decimal point selectable for ease of reading:	XXXXXX, XXXXX.X, XXXX.XX, XXX.XXX, XX.XXXX
Sensor supply:	ac Version : 12Vdc/100 mA dc Version : Un - 2V/100 mA
Configuration:	Programming and current value backed up via EEPROM memory
OUTPUTS	
Solid state	
Type:	NPN open collector
Maximum current:	100 mA
Maximum voltage:	40 V dc
Voltage drop:	<1.5V
Response time:	<250µs

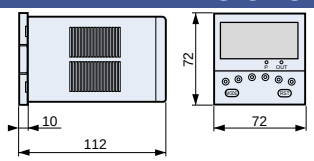
Electrical life at I max. resistive:	10^5
Relay: 1 or 2 changeover relays	
Current rating:	2 A
Maximum voltage:	250 V ac
Max. contact rating (resistive) AC1:	500 VA
Response time:	< 10 ms
Mechanical life:	$3x10^7$ (operations)
Electrical life at I max. resistive AC1:	$3x10^5$
Output modes:	maintained or pulsed where t = 0.9s to 9.9s
Single shot or repetitive (immediate auto reset)	
Supply (min/max values)	10 - 30 V dc 20 - 55 V ac 80 - 260 V ac
Consumption:	dc Version : < 5 W ac Version : < 13 VA
PHYSICAL DETAILS	
Immunity from micro power cuts:	10mS
Relative humidity (without condensation):	95%
Material:	Self-extinguishing ABS
Connection:	by screw terminals
Terminal capacity:	2 x 1.5 mm2
Front panel fixing:	by clip
Front panel protection:	IP54
Temperature limits:	Use 0 +55 °C Stored -25 +70 °C
Weight:	dc Version 260 g ac Version 290 g

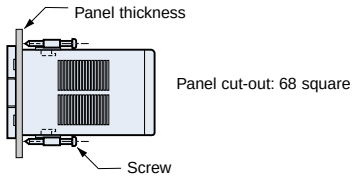
WIRING DIAGRAMS

87 619 228
87 619 224
87 619 222
87 619 328
87 619 324
87 619 322



DIMENSIONS





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7392	10 - 30 Vdc	UP/DN/IND/CUMUL/DIR/PH/PHx2/PHx4	2 preset contact and solid state outputs	87 619 322

INPUT AND OUTPUT MODES FOR THE PRESET COUNTERS

Input modes — **Outline diagram** Counter function

On : Contact closed, solid state ON, voltage level 0V for NPN or 30 V max for PNP.
OFF : Contact open, solid state OFF, voltage level 0V for PNP or 30 V max for NPN.

PNP count on rising edge

NPN count on falling edge

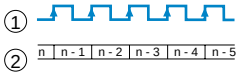
Output modes — **Output modes** Up/down counter and chronometer functions

DOWN

1 - Input IN1
2 - Display

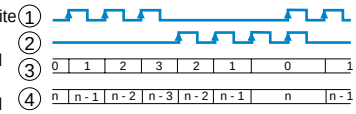
UP

1 - Input IN1
2 - Display



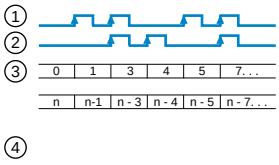
IND

1 - Input IN1 Count in the direction of the cycle
2 - Input IN2 Count in the opposite direction from the cycle
3 - Display (0 → PR) 2-channel up/down counter
4 - Display (PR → 0) 2-channel up/down counter



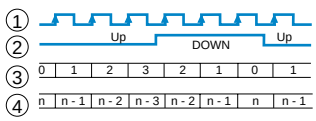
CUMUL

1 - Input IN1 Count in the direction of the cycle
2 - Input IN2 Count in the direction of the cycle
3 - Display (0 → P) 2-channel up/down counter
4 -Display (P → 0) 2-channel up/down counter



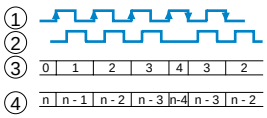
DIR

1 - Input IN1 Input pulses
2 - Input IN2 Change of direction of cycle
3 - Display (0 → PR) 1-channel up/down counter
4 - Display (PR → 0) 1-channel up/down counter



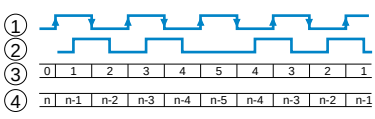
PHASE

1 - Input IN1
2 - Input IN2
Signals 90° out of phase
3 - Display (0 → PR)
4 - Display (PR → 0)



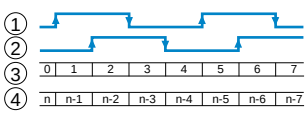
PHASE X2

1 - Input IN1
2 - Input IN2
Signals 90° out of phase
3 - Display (0 → PR)
4 - Display (PR → 0)



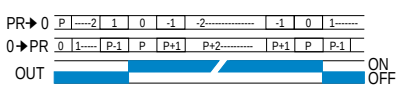
PHASE X4

1 - Input IN1
2 - Input IN2
Signals 90° out of phase
3 - Display (0 → PR)
4 - Display (PR → 0)



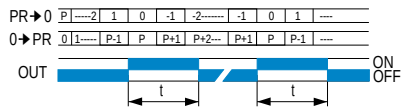
Output modes — **Repetitive cycles**

1 — Maintained with overflow

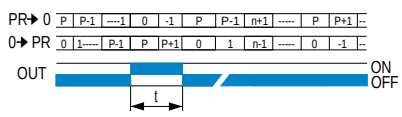


2 — Maintained without overflow

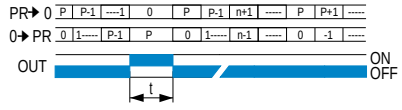
3 — Pulsed (transient pulse)



4 — Pulsed with delayed auto reset and overflow



5 — Pulsed with delayed auto reset and no overflow



6 — Pulsed with immediate auto reset