

Type 651



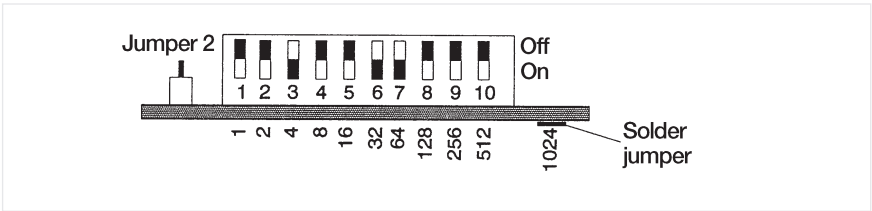
PROGRAMMING

TECHNICAL DATA

Pulse Scaler for DIN Rail Attachment

- Programmable pulse scaling factor up to 2047:1
- NAMUR generator input
- PNP transistor output
- Max. pulse frequency 5 kHz
- 35 mm DIN rail attachment

The divisor is set in binary code by means of DIL switches. To obtain a divisor value of 100, e.g. switches S7, S6, and S3 must be set (100 = 64 + 32 + 4).
Programming the signal duration
Ordering code 0 651 109: 0.2 ... 1 ms (jumper 2 open) or 20 ... 100 ms (jumper 2 closed) Ordering code 0 651 114: 1 ... 20 ms (jumper 2 open) or 100 ms ... 2s (jumper 2 closed).



Supply voltage V _{op}	10 ... 30 VDC ± 10 %
Current consumption	< 10 mA
Operating temperature	- 10 ... + 60 °C
Storage temperature	- 20 ... + 70 °C
Electrical connection	screw terminals
Mounting	35 mm DIN rail attachment
Protection class (IEC 144)	IP 50, connections IP 00
Vibrostability	50 m/s ² acc. to IEC 068-2-6

Inputs	
Amplitude thresholds	< 2 V and > 8 V or NAMUR
Active edge	positive or NAMUR
Pulse shape	random (squarewave 1:1 for max. frequency)
Input resistance	approx. 5 kΩ

Count input	
Min. pulse duration	> 100 μs (5 kHz), 17 ms (30 Hz)
Max. counting frequency	5 kHz or 30 Hz

Control input	
Reset	- external pulse, pulse length > 17 ms - by switching the supply voltage off and on (start-up reset)

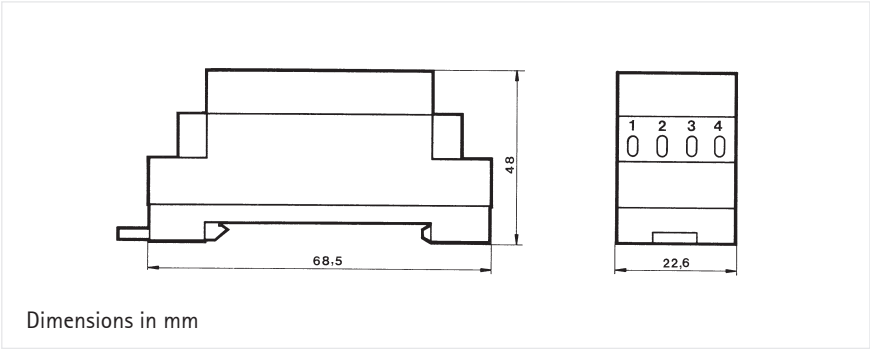
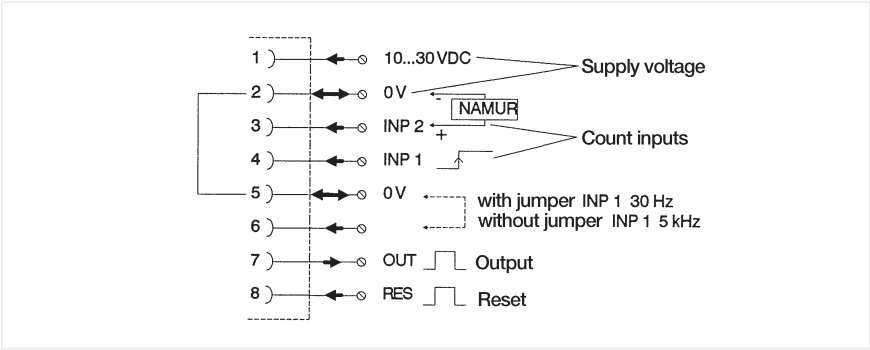
Output	
Signal type	PNP
Signal duration	Ordering code 0 651 109, 0.2 ... 1 ms or 20 ... 100 ms Ordering code 0 651 114, 1 ... 20 ms or 100 ms ... 2 s
Switching voltage	approx. V _{op}
Switching current	100 mA

CONNECTION DIAGRAM

DIMENSIONED DRAWING

ORDER INFORMATION

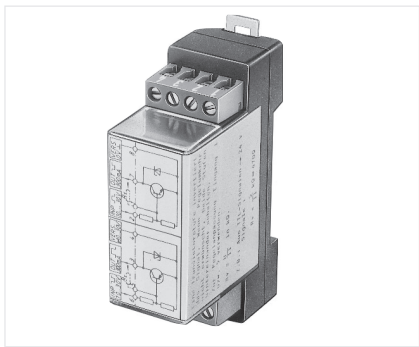
Technical data



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!

Type 654



TYPICAL APPLICATIONS

TECHNICAL DATA

DIMENSIONED DRAWING

Pulse Amplifier for DIN Rail Attachment

- Input NPN or PNP
- Output NPN or PNP
- For electromechanical or electronic counters
- 35 mm DIN rail attachment

- Pulse amplifier for weak signals
- Inverter when PNP signals are to be converted into NPN signals (or vice versa)

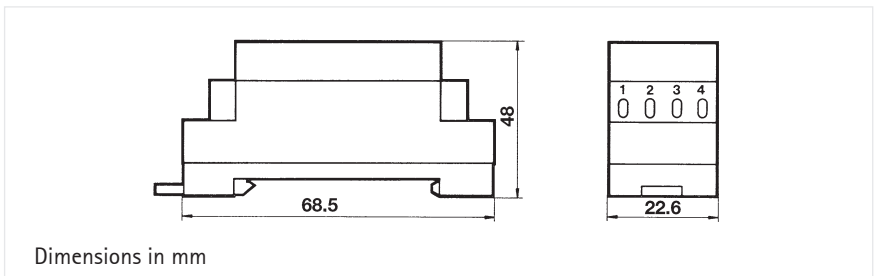
Supply voltage V_{op}	10 ... 30 VDC, not to be connected to a DC-Network*
Current consumption	= switching current < 300 mA
Residual ripple	< 5 %
Operating temperature	- 10 ... + 50 °C
Storage temperature	- 20 ... + 70 °C
Electrical connection	screw terminals, cable length < 30 m
Mounting	35 mm DIN rail attachment
General design	acc. to EN 61010-1, EN 50178
Protection class (IEC 144)	IP 50, connections IP 00

* For further information see manual

Input	
Amplitude thresholds	> 5.5 VDC or < with ext. resistor
Active edge	PNP or NPN
Pulse shape	random
Input resistance	2.2 k Ω
Min. pulse duration	1 μ s
Max. counting frequency	1 MHz

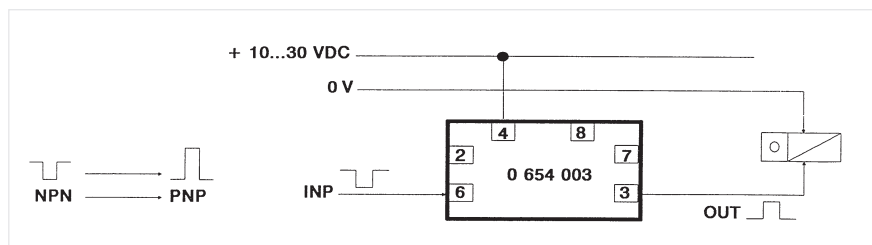
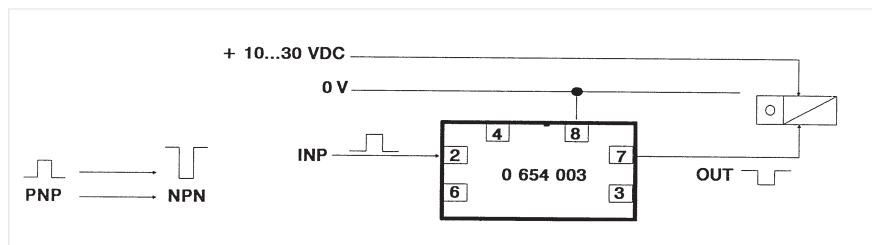
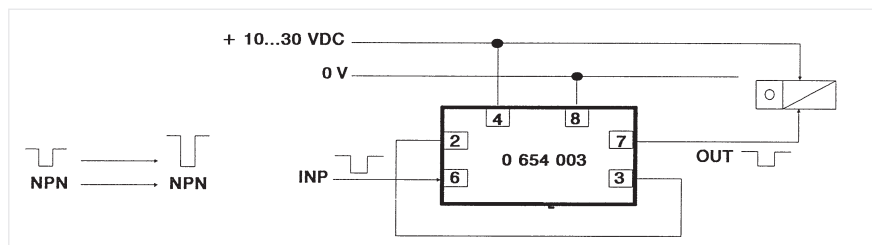
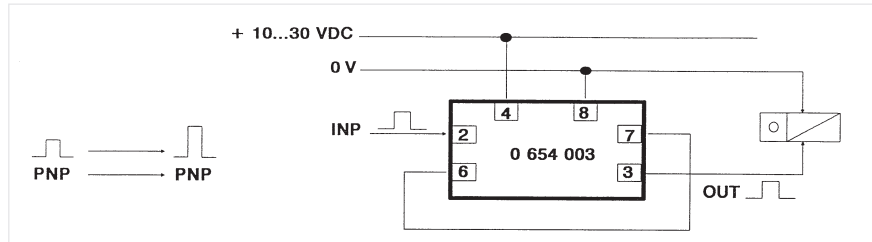
Output	
Signal type	PNP or NPN
Signal duration	= input pulse
Switching voltage	PNP V_{op} (- 1V), NPN 0 V (+ 1 V)
Switching current	max. 300 mA

Note: For actuation of electronic counters an additional load resistor of 1 k Ω must be connected in parallel to the count input



Dimensions in mm

CONFIGURATION EXAMPLES

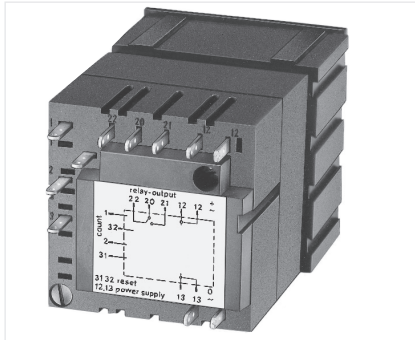


ORDER INFORMATION

Pulse amplifier

Ordering code 0 654 003

Automatic Reset Module for Preset Counters



- 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

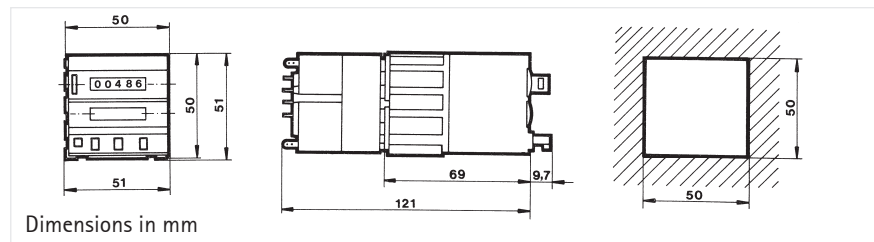
TECHNICAL DATA

Supply voltage V_{op}	acc. to order information
Power consumption	DC version 12 W, AC version 16 VA
Operating temperature	- 10 ... + 50 °C
Electrical connection	AMP connector 0.8 x 2.8 mm, cable length < 30 m
Mounting	modular system 400
Protection class (IEC 144)	IP 00
Maintenance-free operation	1.5 x 10 ⁶ resets
General design	acc. to EN 61010-1, EN 50178

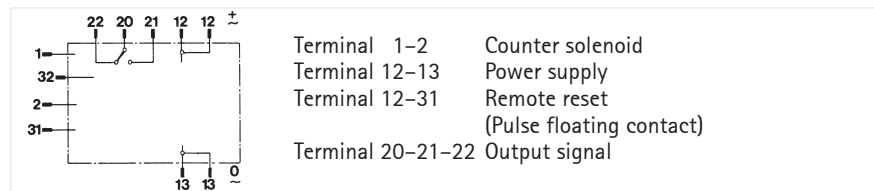
Output

Signal duration	DC version approx. 200 ms, AC version approx. 250 ms
Contact type	floating changeover contact
Switching voltage	max. 220 V
Switching current	max. 20 VA/2.5 A
Reset frequency	DC version max. 1 per s, AC version max. 1 per 2 s

DIMENSIONED DRAWING Automatic reset module with preset counter



CONNECTION DIAGRAM TERMINAL ASSIGNMENT



ORDER INFORMATION

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.

INFORMATION

This is a class A device. This device may cause radio interferences in residential environments. In this case, the user may be asked to take care of reasonable action.