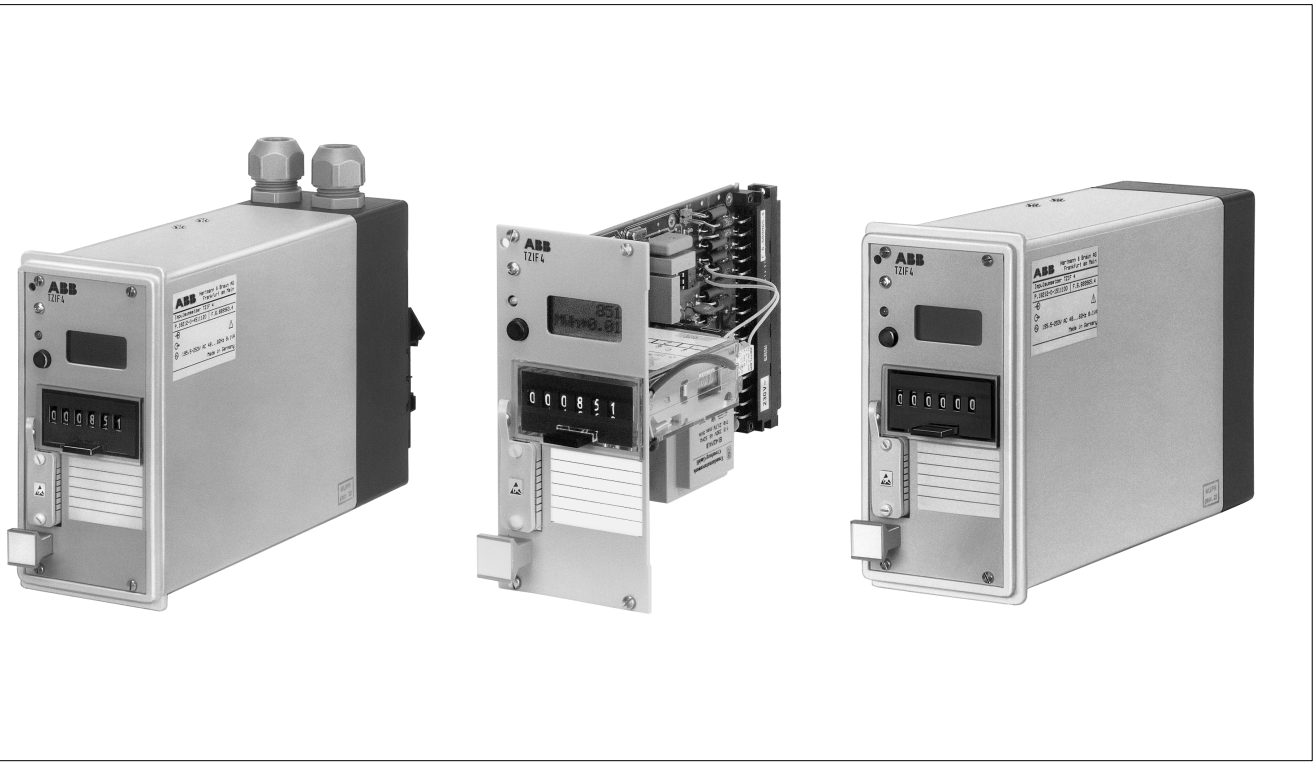
TZIF 4

Current-to-Pulse Converter

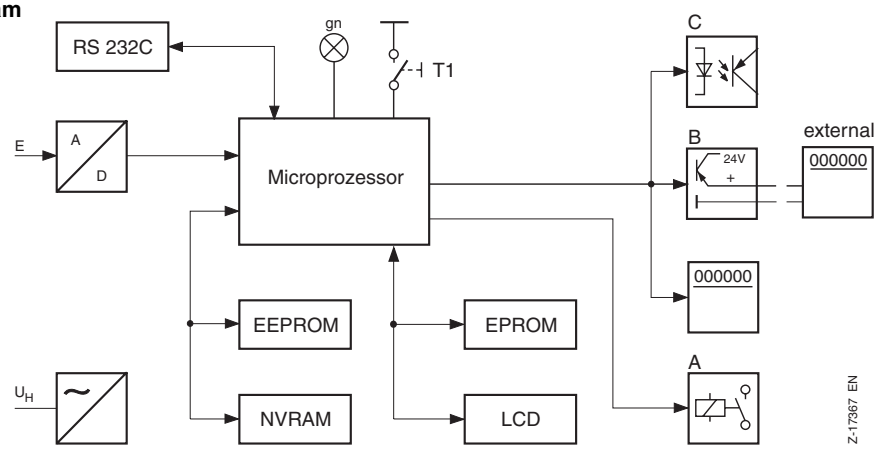
10/18-1.20 EN



- **Conversion of direct current or voltage signals into a proportional pulse frequency**
- **Integration and average value formation of analog signals for quantity counting/remote quantity counting, e.g. for flow rate calculations**
- **Digital measured value processing**
- **Electromagnetic compatibility**
  – Industrial standard to NAMUR recommendation
- **Can be parameterized via the serial interface RS 232 C and parameter definition program TZIKON**
- **Drum-type counter and/or digital display (LCD)**
- **Output stages**
  – passive relay, floating
  – passive optocoupler, floating
  – active transistor
- **Types**
  19“ plug-in card for installation in
  – panel case
  – 19“ subrack
  – surface-mounting case, degree of protection IP 20 for wall or top-hat rail mounting to EN 50022

Technical data

Functional diagram



Parameterizable input

Load-independent direct current
0...20 mA
4...20 mA R_E = 50 Ω
0... 5 mA R_E = 50 Ω
0...20 mA R_E = 50 Ω

Max. permitted input current 40 mA

Load-independent direct voltage
0...10 V $R_E \geq 90$ kΩ
0... 1 V $R_E \geq 90$ kΩ

Max. permitted input current
12 V

Linear overrange
10 % of basic range

Parameterizable range
≥ 20 %

Output

Pulse frequency proportional to input signal

Passive pulse output A (relay)

Contact output with safe electrical isolation, external counter and power supply

Contact load capacity
230 V_{eff}, 5 VA

Frequency range[1)]
0.0001...1 pulses/s[2)]

Pulse duty cycle
≤ 1 : 1

Pulse duration
10 ms...500 ms

Active pulse output B (transistor)

Without electrical isolation, internal voltage supply, Highside driver

Frequency range
0.0001...50 pulses/s

Pulse duty cycle
≤ 1 : 1

Pulse duration[3)]
10 ms...500 ms

Load
≥ 180 Ω

Output voltage
approx. 20 V DC, short-circuit proof

Passive pulse output C (optocoupler)

With electrical isolation, external counter and power supply

Open collector

Rating
24 V DC/100 mA

Frequency range
0.0001...50 pulses/s

Pulse duty cycle
≤ 1 : 1

Pulse duration
10 ms...500 ms

Load
≥ 180 Ω, short-circuit proof

Interface

Serial RS 232 interface without electrical isolation

Signal lines	TXD, RXD, GND
Baud rate	9600

Bit sequence
1 start bit, 8 data bits, 1 stop bit, 1 parity bit

Functions which can be parameterized via the interface

– Number of pulses and evaluation
– Physical input variables, e. g. kg/h
– Electrical input variables, e. g. mA, V
– Pulse suppression
– Pulse duration
– Counter reset
– Counter start/stop

1) Lifetime without load: 1.6×10^7 operating cycles
2) Recommended: 0.25 pulses/s
3) For the roller register the following applies: pulse duration ≤ 50 ms parameterizable range ≥ 20 %

Technical data

Display

LC display

Lines	2
Characters/line	8
Character height	4.75 mm
1st line	Signal value and parameter data
2st line	Dimension

Power supply

Rated voltage
230 V AC, 115 V AC, 24 V UC, 24 V DC

Alternating voltage
–15...+10 %; 48...63 Hz

Direct voltage
18 V...30 V

Residual ripple
≤ 20 % within the tolerance range

Power consumption

Power supply	Pulse counter*)	
	without	installed
230 V AC	7.2 W	8.1 W
115 V AC	5.3 W	6.3 W
24 V AC	5.3 W	6.3 W
24 V UC	3.7 W	5.7 W
24 V DC	3.7 W	5.7 W

*) Pulse frequency 10 Hz
Pulse duration 50 ms

Characteristics under reference conditions to IEC 770

Calibration error[1)]	± 0.1 %
Linearity error of A/D conversion	≤ 0.2 %

Effects

Ambient temperature	≤ 0.2 %/10 K
Power supply	≤ 0.1 %/10 %

General and safety characteristics

Environment conditions

	19"-Plug-in card	Panel-mounting	With drum-type counter	with LCD
Storage/ transport-temperature	–30...+ 80 °C		–10...+55 °C	–20...+70 °C
Operating temperature	0...+60 °C	0...+50 °C	0...+50 °C	
Humidity	≤ 95 % r. h.		≤ 85 % r. h.	≤ 75 % r. h.
Condensation	not legal			
Includes class of influence variables to DIN IEC 721-3-2	2K3			
DIN IEC 721-3-3	3K3			

Mechanical stress

Tests to DIN IEC 68 Part 2-27 and Part 2-6

Transport

Shock	30 g/18 ms
Vibration	10 mm/2 g/...150 Hz

In operation

Vibration	10 mm/2 g/2...150 Hz

Fulfils seismic stress, test class III to DIN IEC 68-3-3, 02.91 for severe and very severe earthquakes.

Electrical safety

Test to DIN VDE 0411 Part 1/IEC 348

Class of protection 1

Test voltage
2.3 kV power supply against input/output

Safe isolation
Power supply against signal circuits

Signal circuits
Functional extra-low voltage with proof isolation to DIN VDE 0100, Part 410 and VDE 0106, Part 101/11.86 with transformer to DIN VDE 0551, Part 1/09.89

Overvoltage category/degree of pollution
2/2 for power supply and signal circuits

Electromagnetic compatibility

Interference immunity
Tested to IEC 801 and VDE 0843
The standard requirements of the NAMUR recommendation are fulfilled.

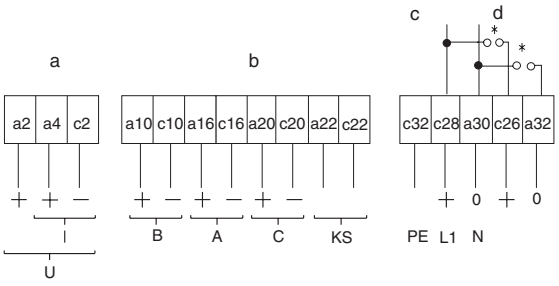
Noise suppression to EN 55011

Connection, case und mounting

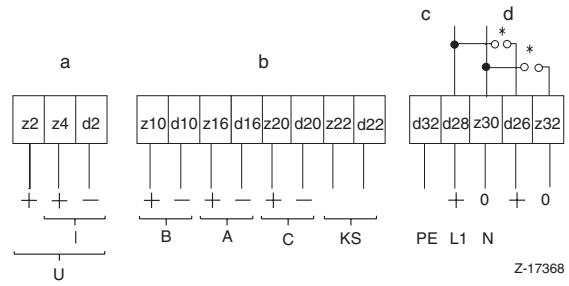
	19" plug-in card	Panel mounting case	Surface mounting case
Electrical connections	32-pole blade connector to DIN 41612 type D or F	Blade connector 6.3 mm or screw terminals for 2.5 mm²	Screw terminals for 2.5 mm²
Interface	9-pole, socket for D connector		
Degree of protection to DIN 40050	IP 00	IP 20	IP 20
Weight	approx. 0.8 kg	approx. 1.3 kg	approx. 1.4 kg
Color	RAL 7032		
Mounting orientation	Arbitrary		

Connection diagrams

Connector D
19“, IP 20



Connector F
19“, IP 20



a) Input
b) Output
   A... Relay contact
   B... Transistor output
   C... Optocoupler
   KS... Control loope (only with 19“)

c) Grounding
d) Power supply
   *) only with 19“ and power supply
   24 V DC (compatible pinout for TZIF 3)

Standard parameter

Measuring point No.	Test
Tag description	default
Type	19“ plug-in card
Pulse counter	without
Power supply	230 V AC
Parameterization	without
Active output	without
Passive output	output stage A

Input TZIF 4

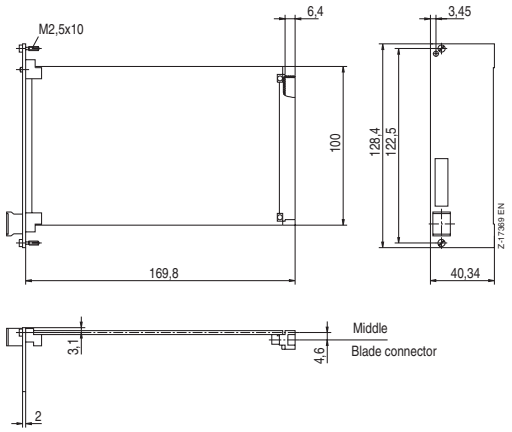
electrical	0...20 mA
physical	0...3600

Output TZIF 4

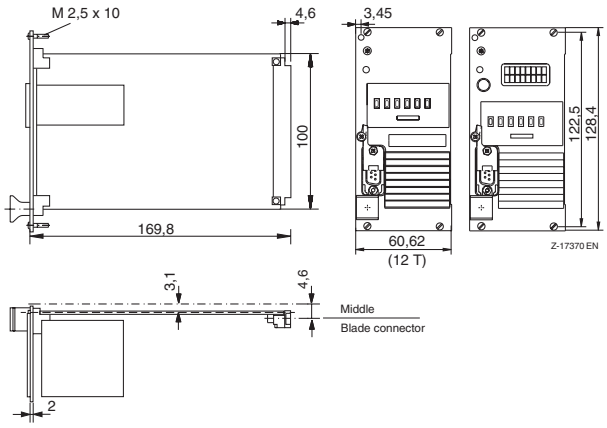
Pulse value (resolution)	1
Pulse count	3600 pulses/h
Pulse duration	50 ms
Crawl	0 %

Dimensional drawings (Dimension in mm)

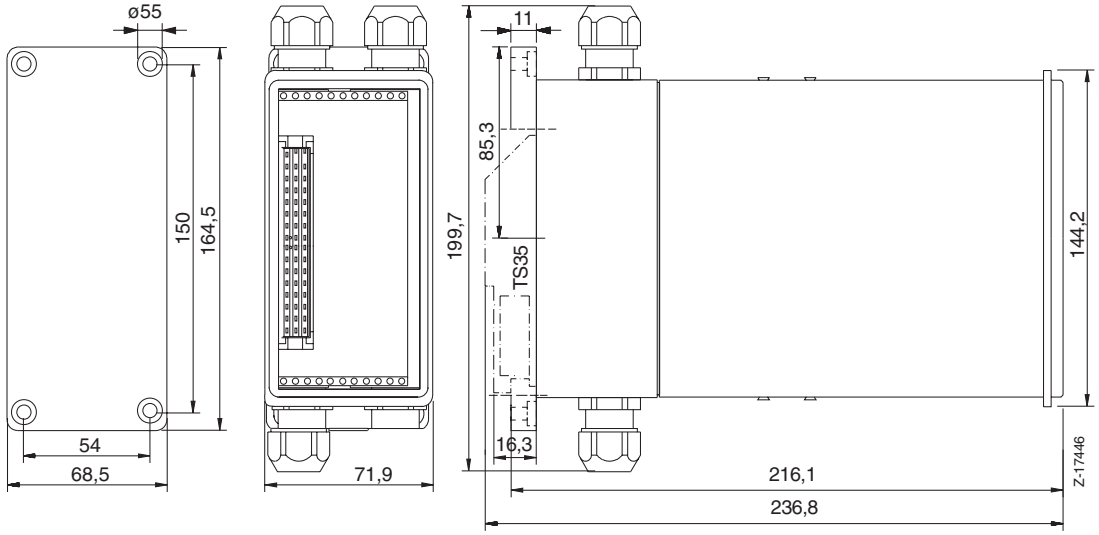
19“ plug-in card, 8 T (without drum-type counter)



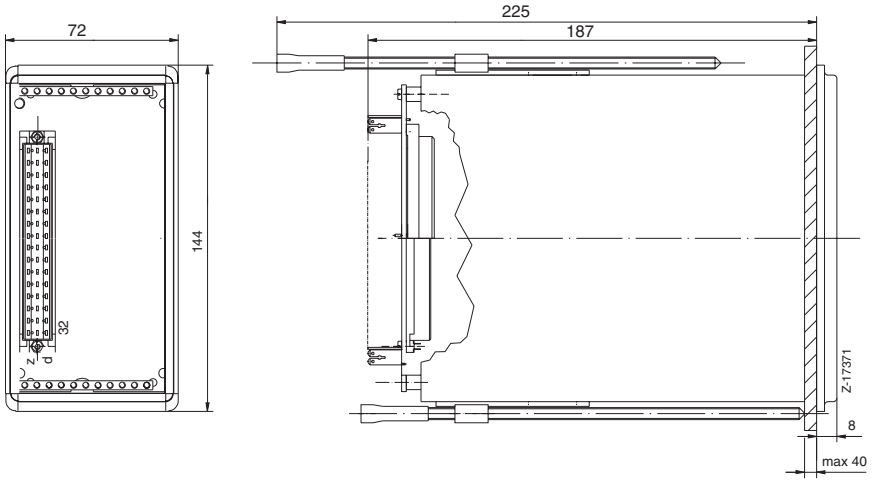
19“ plug-in card, 12 T (with drum-type counter)



Surface mounting case, type of protection IP 20
Wall mounting (dash-type line: rail mounting)



Panel mounting case



Ordering information

	Catalog No.								
Current-to-pulse Converter TZIF 4	**V18212A-**						**0**		
Type of construction									
Panel-mounting (blade connector type D)		1							
19" plug-in card, blade connector type D		2							
19" plug-in card, blade connector type F		3							
Surface-mounting case IP 20 for rail mounting									
with 19" plug-in card (blade connector D)		4							
with 19" plug-in card (blade connector F)		5							
For fastening and connections see Suppl. No. 311 and 312									
Pulse counter									
without			0						
6-digit, without zero reset			1						
6-digit, with zero reset			2						
8-digit, without zero reset			3						
6-digit, without zero reset, with digital display (LCD)[1]			4						
6-digit, with zero reset, with digital display (LCD)[1]			5						
8-digit, without zero reset, with digital display (LCD)[1]			6						
with digital display (LCD)[2]			7						
Power supply									
230 V AC				1					
115 V AC				2					
24 V AC				3					
24 V UC				4					
24 V DC (without electrical isolation)				5					
Parameterization									
without (standard parameters)					1				
according to customer specification					2				
Active output									
without						0			
output stage B (transistor)[3]						1			
Passive output									
without							0		
output stage A (Relay)							1		
output stage C (optocoupler)							2		

The Catalog No. must be supplemented with Code-Nos.

[1] For display of measured values and parameters

[2] For 8-digit count value, measured value and parameter display

[3] Always necessary if drum-type counter is installed

Additional ordering information							
				Code		
Measuring point No.		(16 digits)		V01		
Electrical input variable:[1]	lower range	(2 digits, 4 decimals)		V51		
	upper range	(2 digits, 4 decimals)		V52		
	unit mA	yes/no (clear text)		V55		
	V	yes/no (clear text)		V56		
Physical input variable:	lower range	(6 digits, 2 decimals)		V61		
	upper range	(6 digits, 2 decimals)		V62		
	unit	(8 digits)	(clear text)	V63		
Output:[2] (0,3...180.000 pulses/h)		(8 digits)		V64		
Pulse duration: [3] (10...500 ms)		(4 digits)		V65		
Suppression: (up to 50 % of physical span)		(2 digits, 1 decimal)		V68		
Fasteners for wall mounting (surface-mounting case IP 20)				311		
Srew terminal connection (panel-mounting case)				312		
Label:	insert plate[4]		(clear text)	381		
	adhesive label	1st line	(clear text)	382		
		2nd line	(clear text)	383		
		3rd line	(clear text)	384		
Operating manual (indicate total number of copies)						
...German (for 1 copy no entry)				Z2D		
...English (Code-No. always required)				Z2E		
...French (Code-No. always required)		42/18-49-3; 42/18-49-1 XL		Z2F		

	Catalog No.	Code		
Parameter definition program TZIKON				
(3 1/2"-diskette, 1,44 MB)	18295-4-0346070			
RS 232 C extension cable	11492-4-0743305			

[1] Measuring range > 20 % of basic measuring range
<110 % of basic measuring range

[2] max. 3600 pulses/h for relay output A, max. 36.000 pulses/h for mechanical pulse counter

[3] Pulse duration ≤ 50 ms for drum-type counter

[4] not in combination with digital display

Notice
Data for Code-Nos. V51...V68 are required for customer-specific parameter definition.
If not available, standard parameters will be defined.



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