

## LED Preset Counters – Codix 716 / Codix 717 / Codix 717 EX

with ATEX-approval



### Your benefit

- Very bright 8 mm [0.315"] high display
- Programmable as a pulse counter, frequency meter or an operating time preset counter
- Wide range Power supply  
90 ... 260 V AC or  
10 ... 30 V DC
- approval
- -proof version

### Further product features

- Display range –199 999 ... 999 999 with zero blanking
- Easy to use and programmable with only 4 keys
- Option: serial interface  
RS 232, RS 422, RS 485
- Relay or optocoupler output
- Scaling factor 0.0001 ... 99.9999
- 716:** one preset
- 717:** two presets

### Technical data:

Supply voltage:	10 ... 30 V DC, max. 1.2 W with reverse polarity protection 90 ... 260 V AC, max. 5 VA
Display:	6-digit 7-segment red LED; 8 mm [0.315"] high
Counting inputs:	2 counting inputs, 4 types of programmable inputs
Polarity of the inputs:	programmable, common for all inputs
Input resistance:	approx. 10 kΩ
Counting frequency:	20 kHz, can be reduced to 30 Hz
Minimum pulse duration for inputs:	5 ms
Input switching level:	DC version: Low: $0 \dots 0,2 \times U_B$ [V DC] High: $0,6 \times U_B \dots 30$ V DC AC version: Low: 0 ... 4 V DC High: 12 ... 30 V DC
Pulse shape:	any shape (Schmitt-Trigger)
Output 1 Relay:	with potential-free contacts, programmable as normally-closed (NC) or normally-open (NO) switching voltage max. 250 V AC/125 V DC switching current max. 3 A. switching current min. at DC 30 mA switching power at DC: 90 W at AC: max. 750 VA
or npn optocoupler:	with open collector and emitter switching power 30 V DC/15 mA

Output 2 Relay:	with potential free switching contact, programmable opening or closing. switching voltage max. 250 V AC/300 V DC, switching current max. 3 A. switching current at DC min. 30 mA switching power at DC 50 W at AC max. 2000 VA
or npn-optocoupler:	with open collector and emitter switching power 30 V DC/15 mA
Accuracy:	<0,1 % (at frequency meter mode) ±50 ppm (at time counter mode)
Output response time:	relay: approx. 7 ms optocoupler: approx. 2 ms
Data storage:	min. 10 years or $10^6$ memory cycles
Transmitter voltage:	24 V DC –40 %/+15 %, 100 mA at AC version
Ambient temperature:	–10 ... +50 °C [14 ... 122 °F]
Storage temperature:	–25 ... +70 °C [–13 ... 158 °F]
EMC:	Interference emissions EN55011 Class B Interference resistance EN 61000-6-2
Device safety:	design to: EN61010 Part 1 protection: Class: 2 application area: Soiling Level 2 protection: IP 65 (front side) EX-proof IP54
Weight:	approx. 200 g [7.055 oz] Ex-execution 2 kg [70.548 oz]
only for EX proof:	Counter in EX proof version acc. to explosion-proof class EEx D IIC T6, with encapsulated cable 2 x 3 m [2.188 x 3.281 yards] PTB approval no. Ex-96.D. 1024 hardcoated AL-housing function mode as type 717 Note: the EX-proof version has an additional fuse.

### Inputs:

#### 2 counting inputs

The maximum frequency is 20 kHz (20 kHz in the phase discriminator mode); it can be reduced to 30 Hz.

#### Gate

##### Static gate input

pulse count mode: no counting, when the input is active

timer mode: Counting when active gate.lo or not activated gate.hi programmable

#### Reset

Dynamic reset input with the same function as the reset key. Resets the counter to zero, when counting up and sets it to the preset value when counting down

#### Key

Static key lock input. The keys are locked as long as this input is on. The preselection display key remains active

### Interfaces:

The devices can be fitted with the optional RS 232, RS422 or with the RS 485 interfaces. These interfaces can be used to program the devices as well as for remote reading. They are simply controlled by ESC sequences, max. 4800 Baud

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### Programming:

The counters 716/717 are programmed by means of the 4 front keys. The operator guidance on this display allows a simple and intuitive programming. All settings can be carried out by selecting the corresponding parameters in this menu.

The follow modes can be programmed

1. Pulse counter
2. Frequency meter
3. Time meter

### Programmable are:

#### Input polarity:

Positive (pnp) or negative (npn). The selection is valid for all inputs.

#### Pulse or time counting modes:

- adding with counting; start at 0
- subtracting with counting start at the preset (716) and at preselection 2 (717)
- adding with automatic reset when the preset (716) or the preset 2 (717) is reached
- subtracting with automatic positioning at the preset (716) or preset 2 (717) when 0 is reached

#### Input types in pulse counter mode:

- Cnt.Dir 1 counting input  
1 counting direction input
- uP.dn Differential counting  
1 adding input  
1 subtracting input

- quad Phase discriminator  
to connect encoders with 2 signals shifted by 90°
- quad2 Phase discriminator  
with double pulse processing, to connect pulse sources with 2 signals shifted by 90°

### Decimal places:

Data can be displayed with one, two or three decimal places

### Factor:

For an optimum matching of the measuring signal, the displayed values can be weighted by a scale factor between 0.0001 and 99.9999.

### Output signal:

The function of the output signal can be preselected (independently for both outputs of model 717) as a normally closed, normally open or a negative pulse signal.

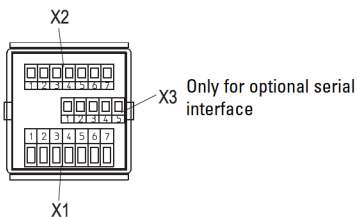
### Maximum counting frequency:

The maximum counting frequency can be set to 30 Hz or 20 kHz.

### Timer:

Counting can be carried out in h, min, s or in h:min:s. The number of decimal places determines the resolution. A resolution up to the ms-range can be achieved.

### Connection diagram:



Pin connection X2:

Pin	Description	AC version	DC-Version
1	+24 V DC	Transmitter voltage	n.c.
2	0 V DC (GND)	GND	n.c.
3	INP A	Count input A	
4	INP B	Count input B	
5	Reset	Reset input	
6	Gate	Gate input	
7	Key	input for key lock	

Pin connection X1:

Pin	AC version	DC version
1	Output1 Relay Collector for Optocoupler output	
2	Output 1 Relay Emitter for Optocoupler output	
3	Output 2 Relay common contact (C) Emitter for Optocoupler output	
4	Output 2 Relay closing contact (NO)	
5	Output 2 Relay opening contact (NC) Collector for Optocoupler output	
6	Power supply 90 ... 250 V AC	10 ... 30 V DC
7	90 ... 250 V AC	0 V DC (GND)

Pin connection X3:

PIN No.	RS232	RS 422	RS 485
1	GND	—	—
2	RxD	RI+	DO/RI+
3	TxD	RI-	DO/RI-
4	RTS	DO+	—
5	CTS	DO-	—

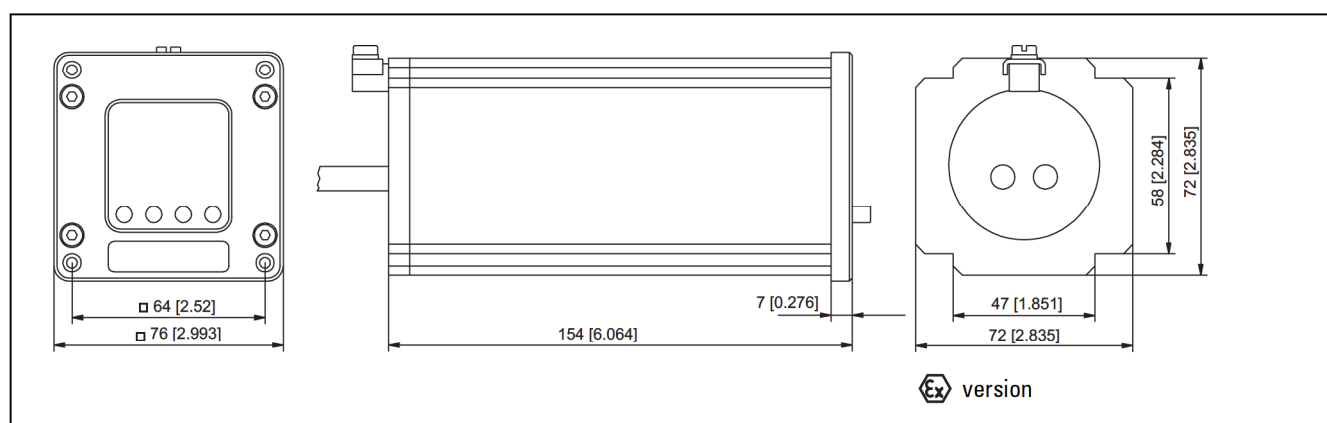
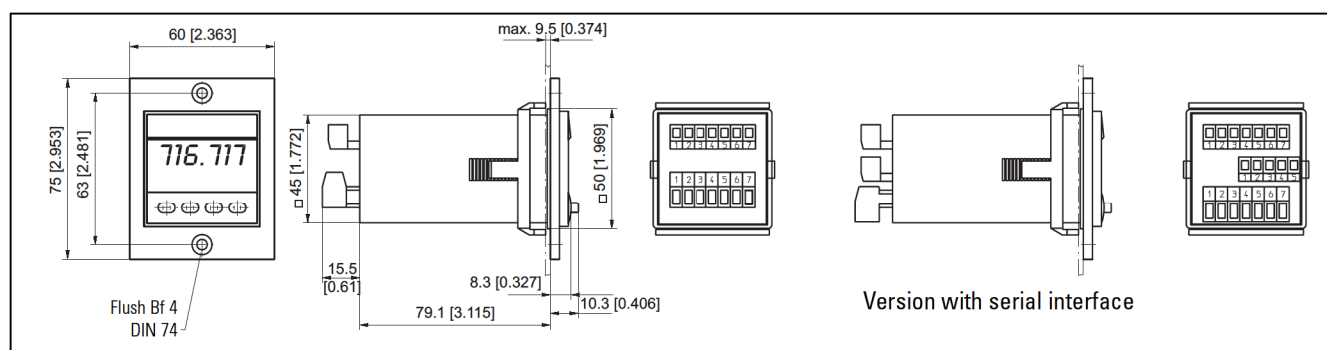
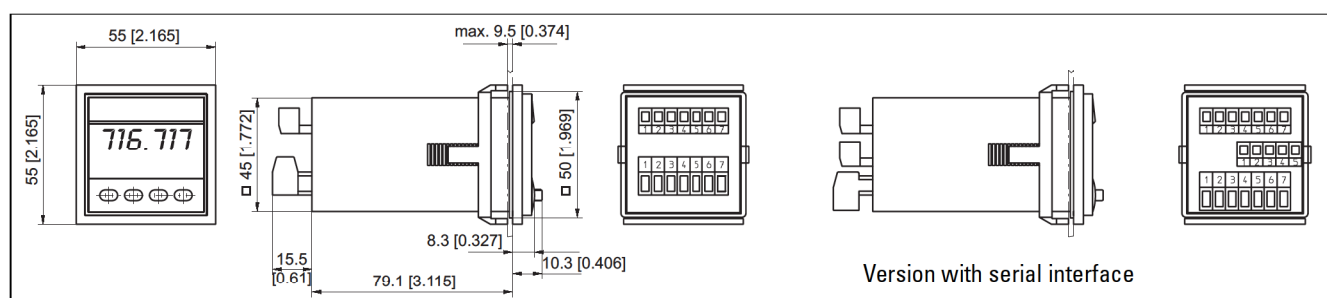
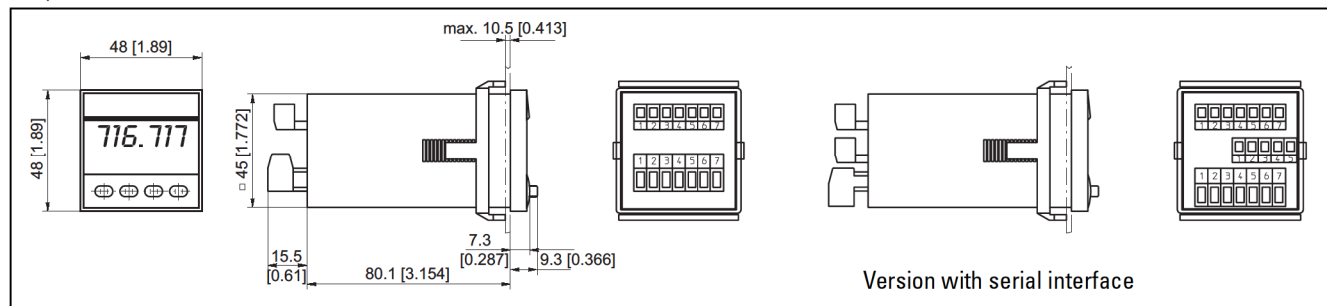


- Easy parameter software for counter type 716/717 and process displays 55x.
- Upload and download function
- Monitor- and terminal program for easy diagnostic functions
- Online display of the measurement values
- German and English.

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### Dimensions:

716 / 717 and Ex



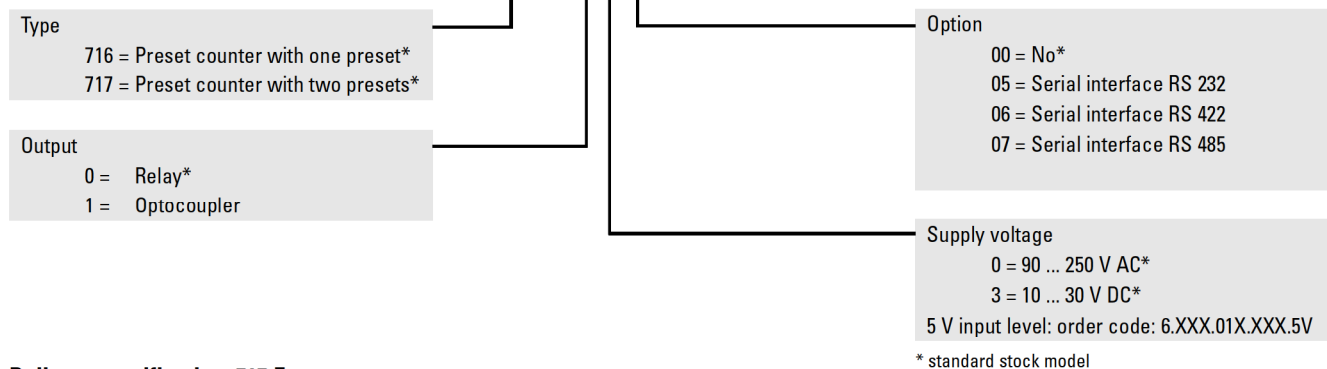
## LED Preset Counters – Codix 716 / Codix 717 / Codix 717 EX

### Delivery includes: 716/717

Counter 716/717	1 Bezel for clip mounting panel cut-out 50 x 50 mm [1.969 x 1.969"]
1 Screw terminal 7 pin, RM 5.08	1 Mounting clip
1 Screw terminal 7 pin, RM 3.81	1 Template for cut-out
1 Bezel for screw mounting panel cut-out 50 x 50 mm [1.969 x 1.969"]	1 Operating instruction

### Order code:

**6.71X.01X.XXX**

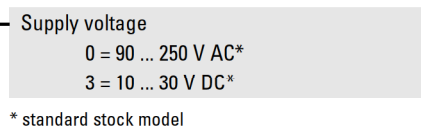


### Delivery specification: 717 Ex

Counter 717 in Ex-proof housing acc. to explosion-proof class EEx D IIC T6 with encapsulated cable 2 x 3 m [2.188 x 3.281 yards], various mounting parts, PTB approval certificate

### Order code for Ex proof version:

**6.717.010.X00.Ex**



### Replacement parts:

7-pin screw terminal RM 5.08 1 ... 7: N100548  
 7-pin screw terminal RM 3.81 1 ... 7: N100387  
 5-pin screw terminal RM 3.81 1 ... 5: N100399