

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 | 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 |
| Display: | 6-digit 7-segment red LED; 8 mm [0.315"] high | or npn-optocoupler: | with open collector and emitter switching power 30 V DC/15 mA |
| Counting inputs: | 2 counting inputs, 4 types of programmable inputs | Accuracy: | <0,1 % (at frequency meter mode) ±50 ppm (at time counter mode) |
| Polarity of the inputs: | programmable, common for all inputs | Output response time: | relay: approx. 7 ms optocoupler: approx. 2 ms |
| Input resistance: | approx. 10 kΩ | Data storage: | min. 10 years or 10 ⁶ memory cycles |
| Counting frequency: | 20 kHz, can be reduced to 30 Hz | Transmitter voltage: | 24 V DC –40 %/+15 %, 100 mA at AC version |
| Minimum pulse duration for inputs: | 5 ms | Ambient temperature: | –10 ... +50 °C [14 ... 122 °F] |
| Input switching level: | DC version: Low: 0 ... 0,2 x U _B [V DC] High: 0.6 x U _B ... 30 V DC AC version: Low: 0 ... 4 V DC High: 12 ... 30 V DC | Storage temperature: | –25 ... +70 °C [–13 ... 158 °F] |
| Pulse shape: | any shape (Schmitt-Trigger) | EMC: | Interference emissions EN55011 Class B Interference resistance EN 61000-6-2 |
| 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 | Device safety: | design to: EN61010 Part 1 protection: Class: 2 application area: Soiling Level 2 protection: IP 65 (front side) EX-proof IP54 |
| or npn optocoupler: | with open collector and emitter switching power 30 V DC/15 mA | 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.

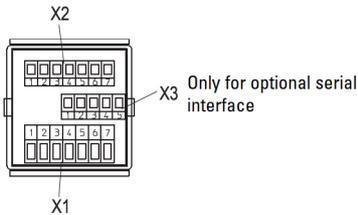
Maximum counting frequency:

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- | – |

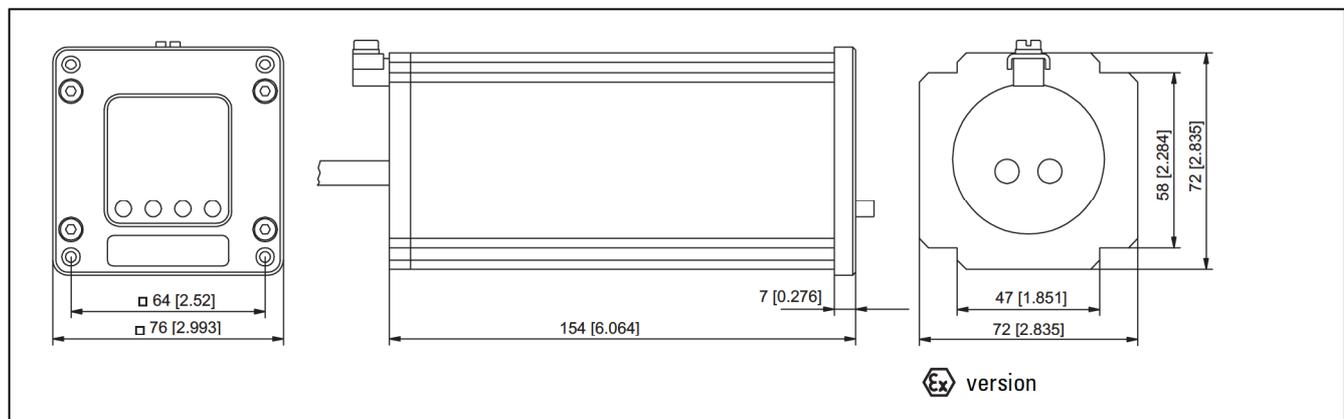
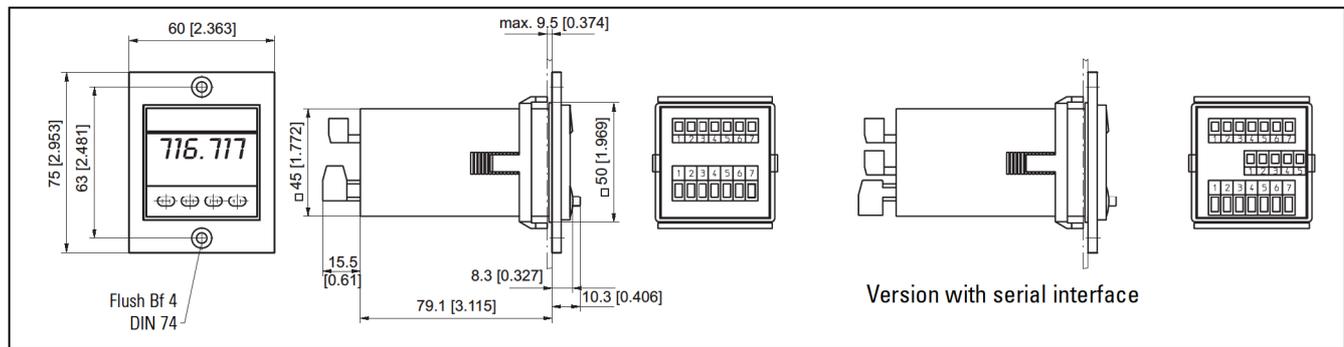
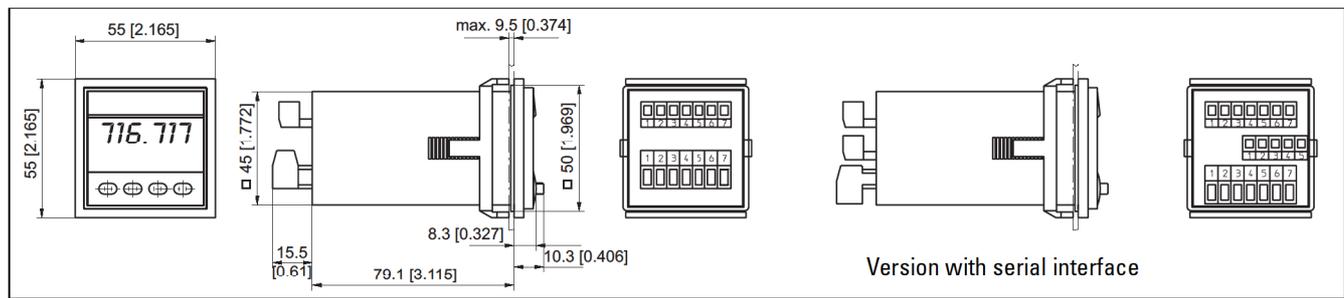
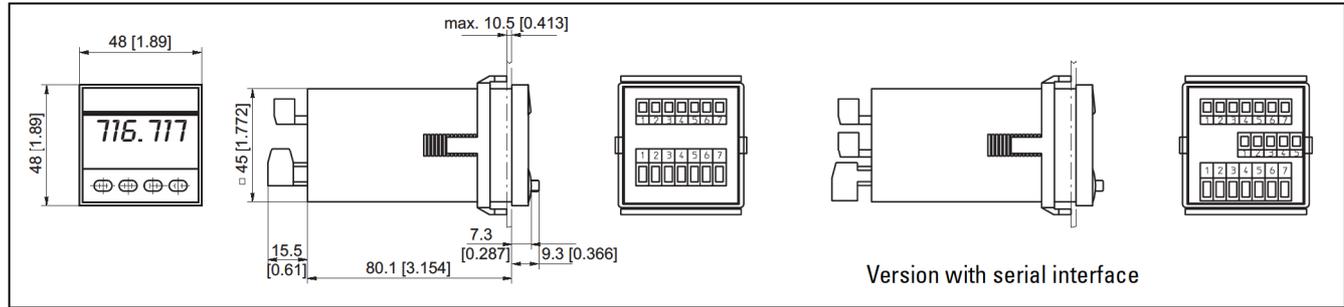


- Easy parameter software for counter type 716/717 and process displays 55x.
- Upload and download function
- Monitor- and terminal program for easy diagnostic functions
- Online display of the measurement values
- German and English.

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Dimensions:

716 / 717 and Ex



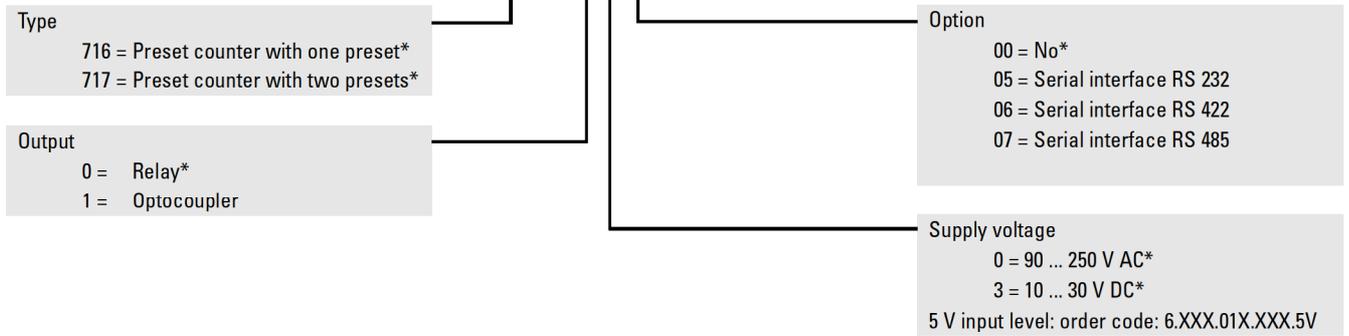
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Delivery includes: 716/717

- | | |
|---|--|
| 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



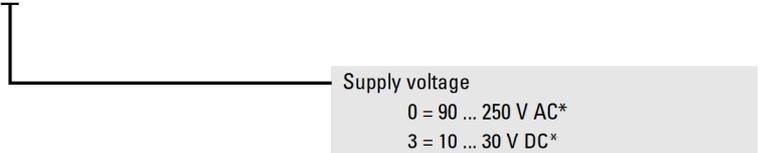
* standard stock model

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 mm [2.188 x 3.281 yards], various mounting parts, PTB approval certificate

Order code for Ex proof version:

6.717.010.X00.Ex



* standard stock model

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