BRAUN
Messtechnik GmbH

Total-Counter
FZN-E

8 Periodes & Total
Resolution: 0,01 L
Battery Type 3x AAA

BRAUN
Messtechnik GmbH

NEW!

Total-Counter FZN-E
The universal pulse meter

Whether remotely displaying metering applications or as a standalone pulse or event counter, the Total-Counter counts what must be counted.

Typical Application

■ The «Total Counter» pulse counter is used as a remote display for type HZ-5 oil counters and others with a potential-free contact output.

■ The resolution is 0.01 litres, but the Total Counter is also available programmable as an OEM version.

■ As a comfortable extension to mere counting work, it includes 10 period Counters as well as a total counter that allow it to store the relevant consumption for a period and compare this with the readings from the previous year.

■ The periodic memories are formed as a ring counter, so that when the 10 periods are exceeded, the respective oldest period is overwritten with the new value.

Perfect technology for accurate consumption monitoring.

Total-Counter FZN-E

The Total Counter FZN-E counts pulses provided from the heating oil counter HZ-5 with a resolution of 0.01 litres.

The Counter contains a total counter and 10 counters in which the consumption for individual heating periods can be stored, so it is possible to compare against the previous years.

The device is supplied with 3 normal round batteries. With alkaline batteries, the Counter can be operated for approximately 5 years and with lithium batteries for approximately 10 years.

The batteries should be replaced when the display is no longer readable or only with difficulty. When the batteries are changed, the figures after the decimal point on the counter disappear. This - if the value is set to the decimal places, must be done when the figure after the decimal point is 0 and the burner is switched off. No metering can be done when the batteries are being changed.

The full litres without the decimal places are stored in a non-volatile memory and remain permanently in the counter.

In the counters for the individual heating periods (ring Counter type, the last 10 heating periods can be stored, after that the 1st heating period is overwritten by the 11th and the 2nd by the 12th etc.) only the full litres without the figures after the decimal point can be stored.

Each time a heating period is stored, a counter that shows the current heating period is increased by 1 to a maximum of 255, so that it can always be seen which period has just been counted.

The device does not need any operation or configuration, but is equipped with operating buttons that call up the meter readings and the permanently stored meter contents (even when the battery has been changed).

Pulse Description

The Total Counter FZN-E is a display device which evaluates and meters the pulse flanks generated by means of pulse forms (potential-free contacts, reed contacts with or without protective circuits).

Many battery-powered devices do not have a pulse Output as this cannot protect the internal battery against discharge when passing on a voltage pulse, rather it is probably that the internal battery discharges, as the receiver of the pulse or its internal resistance is only very rarely known.

Even if there is an input resistance, this would have to be several megaohms in order not to overload the battery of the pulse generator significantly.

A pulse former, on the other hand, expects a voltage which is formed by the switching contact into a pulse, the + line then carries the voltage provided by the counter if the contact is open and does not carry it or only carries a low voltage potential, if the contact is closed.

The oil meter HZ5 with switching output provides such a pulseformer stage which makes it possible to record, pass or display the meter reading precise to the pulse to a remote location.

Total-Counter FZN-E

Ölzähler HZ 5 DR / HZ 6 DR with switching Output

Description of Metering

The Total Counter FZN-E counts pulse flanks, therefore falling (contact closed) or rising (contact open) voltage Curves, which enables a higher resolution with the smallest consumption of power.

For 50 pulses of the HZ-5 (50 times falling and rising voltage) a resolution of 0.01 litres is, therefore, produced.

it contains a 9+2 figure total counter and 10 Counters that store the consumption of the individual heating periods. The period counter is programmed as a ring memory that saves the 11th heating period in the 1st period counter, the 12th period in counter 2 etc.

There are two types of counter in the Counter FZN-E, a RAM memory that updates every time each pulse flank is encountered, and the content of the memory is maintained as long as the device is supplied with power. With alkaline manganese batteries, this is approximately 5 years long.

The other one is an EEProm memory that is updated with every full litre, and the memory content remains even if there is a power failure.

Even if the display can no longer be read (battery voltage is now below 3.5V, rather than 4.5 V for a new one), the meter Continues to work until the battery voltage has dropped to 1.8 V, so that the batteries are completely flat. All memory contents are also written in the non-volatile memory (EEProm).

Operating Buttons

If the Counter is connected, the software counter first counts the figures after the decimal point. For each full litre, the reading is transferred to the hardware counter. The reading of the total counter and period counter 1 are identical and the end of heating period 1. Pressing the ‹#› button shows the reading of the period meter for 5 seconds, then changes the display to the total meter for a further 5 seconds.

If no other button is pressed, the display disappears. Pressing the ‹<› button terminates a heating period. This process must be confirmed by pressing the ‹#› button 3 times, to avoid inadvertently storing a reading.

If this triple confirmation is done, the reading of the 1st period is stored to the litre, the counter for the heating period is set to 2, displayed and then the period counter is zeroed. Pressing any other button other than ‹#› causes the termination of the heating period to interrupt.

Pressing the ‹<› button shows the content of the EEProm memory. In the first position is located the reading of the total counter, in the 2nd - 11th position the readings of periods 1 - 10 (or 11 - 20, 21 - 30 etc.). This memory range will store only every 100 litres. The next positions contain the number of the current heating period, followed by a pointer that points to the number of bytes for all values below 100 litres. All meter readings below 100 litres are in the following memory ranges, in which a value of 255 shows that this byte has not yet been erased. With the «>» button, you can navigate to the relevant next entry. If no button is pressed for 10 seconds, the display is shut down.

BRAUN oil meters have proven themselves a hundred thousand times.