CALMET CF106

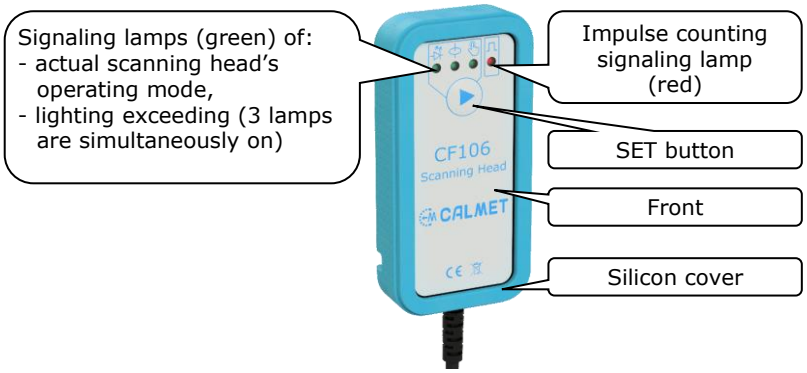
Data Sheet

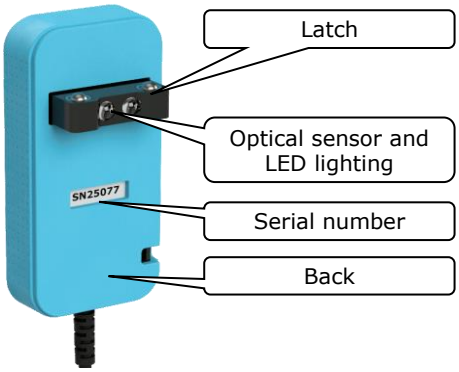
Universal photoelectric scanning head

Calmet CF106 Universal photohead
• Detecting of number of rotating disc turns in inductive electricity meters
• Detecting of LED impulses from electricity meters (without and with 8kHz modulation)
• Detecting of simulated disc marks on LCD displays of electricity meters
• Function of manual impulses triggering
• High immunity to sunlight
• LED detecting with the wavelength 450-1050nm
• Easy mounting to meter by self adhesive Velcro
• Ability to work „by hand" without mounting to meter
• Modular holder with extendable bracket (CF106H option)
• Automatic teaching function
• Small dimensions and weight

Photoelectric scanning head Calmet CF106 together with electricity meter tester is designed for counting (detecting) of:

- pulses emitted by LED diodes of electronic energy meters (without and with 8kHz modulation) in typical colors: blue, green, yellow, red and infrared,
- rotor's turns of inductive energy meters with black or red mark placed on the rotor,
- simulated disc marks on LCD displays of electronic energy meters,
- manually triggered impulses.





Scanning head has 3 operating modes, which are signaled by lightning lamps:

- LED – for electronic meters with LED without and with 8kHz modulation,
- ROTOR – for inductive meters with rotor and for electronic meters with simulated disc mark on LCD display,
- MANUAL – for manually counting of impulses (Start/Stop push button function).

SET ▶ button enables:

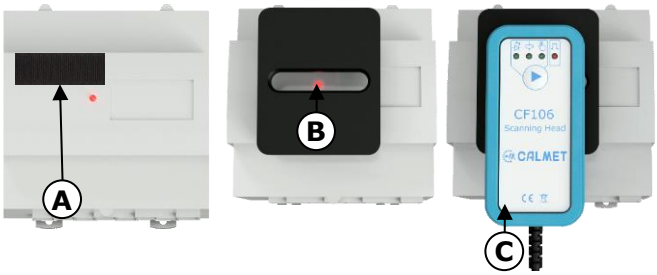
- changing the operating mode:
  - press and hold the SET ▶ button (after 2 seconds begins the change of operating mode),
  - wait until the lamp of required operating mode will start to shine,
  - release the SET ▶ button,
- automatic teaching for ROTOR mode:
  - mount the scanning head on the meter's case,
  - press the SET ▶ button,
  - wait for the full rotor's turn or LCD spot blinking,

  Warning: teaching mode lasts maximum 1 minute. In this time at least 1 rotor's turn or 1 LCD spot blinking is required.
- manual triggering of pulses for MANUAL mode:
  - press the SET ▶ button when the impulse from meter is observed.

CF106 set consists of:

To perform a test of electricity meter (mounted to meter by self adhesive Velcro) one should:

- stick the velcro on meter's case (A) over observed spot (LED)
- fix the mounting handle to velcro so that the observed spot (LED) is in the middle of scanning head's mounting handle window (B)
- mount the scanning head to mounting handle by pushing the scanning head's latch into window of mounting handle (C)
- choose the operating mode (SET ▶ button)
- for the meter with rotor or LCD (⌖ ROTOR mode) start the automatic teaching (SET ▶ button).



To perform a quick test of electricity meter (work „by hand" without mounting to meter) one should:

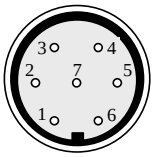
- place the mounting handle on meters case so that the observed spot (LED) is in the middle of scanning head's mounting handle window (A)
- by holding the mounting handle in a fixed position mount the scanning head to mounting handle by pushing the scanning head's latch into window of mounting handle (B)
- choose the operating mode (SET ▶ button)
- for the meter with rotor or LCD (⌖ ROTOR mode) start the automatic teaching (SET ▶ button).

Warning: In case all 3 signaling lamps are simultaneously on (lighting exceeding), then one should move away the scanning head from the front of meter's case or place it at an angle.

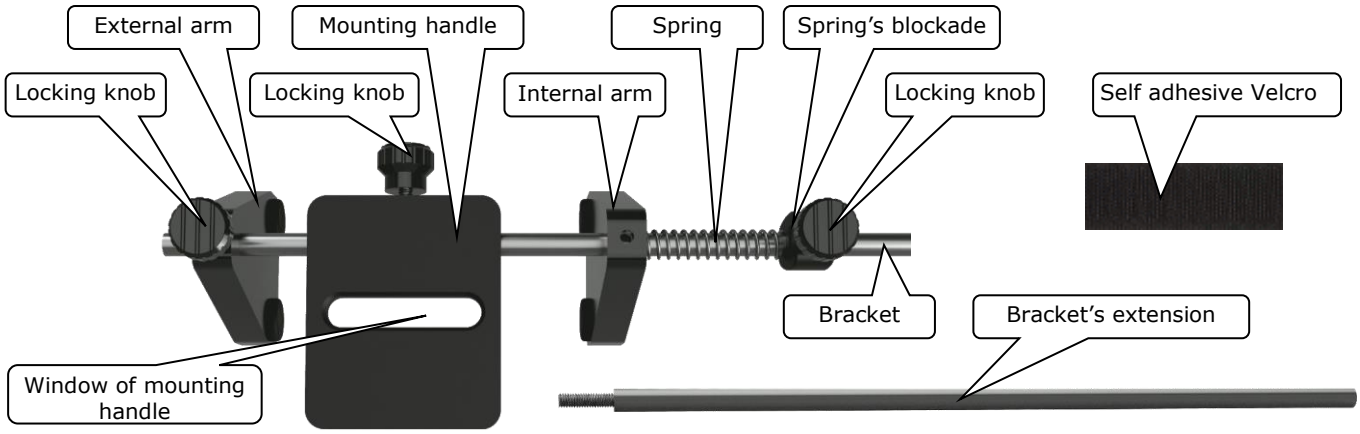
Technical parameters of scanning head

Power Supply	5V...12V...15V	
Supply current	Max 30mA	
Output	Open collector (NPN), max 24V/100mA	
Reading distance	0...45mm	
Reading angle	0...±15⁰	
Max frequency of impulses	LED	2500Hz
	LED modulated 8kHz	800Hz
	Inductive meter	40Hz
	Simulated disc mark on LCD	40Hz
	Manual triggering	5Hz
LED 8kHz modulation range	6kHz...8kHz...10kHz	
Connector type	Plug C091A T3475-001 Amphenol	
Cable length	2.5m	

Pins description

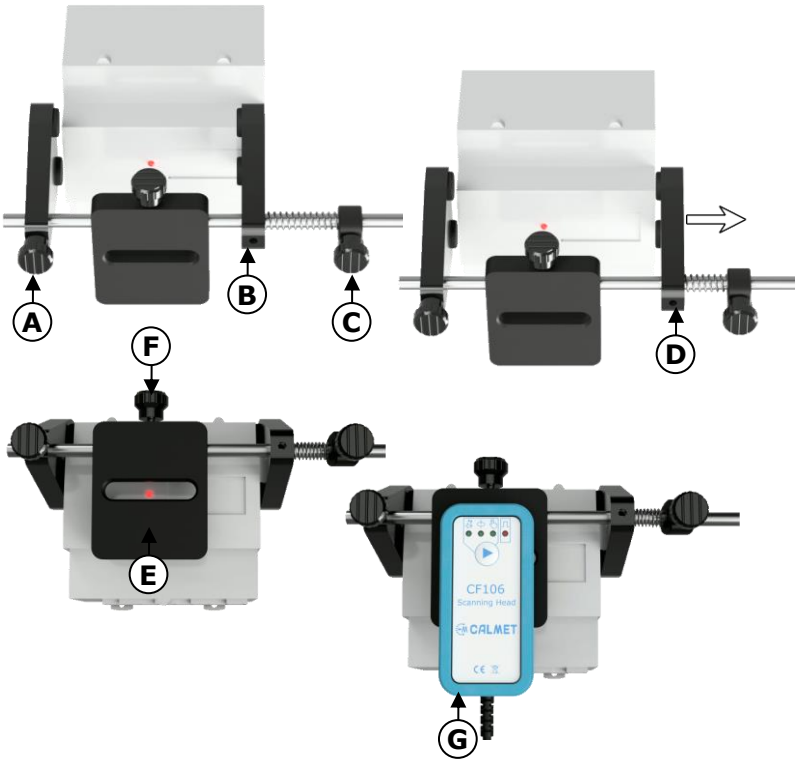
Pin	Signal	Description	
1, 2, 6	NC	Not connected	
4	GND, OUT LO	Ground, impulse output open collector	
5	VCC	Power supply	
3, 7	OUT HI	Impulse output open collector	

CF106H scanning head (option) includes a modular holder UCF106 which consists of:



To mount the scanning head on meter using UCF106 holder and perform a test one should:

- choose the mounting position of scanning head (vertical or horizontal)
- block with locking knob the external arm outside the meter's contour (A)
- set the internal arm inside the meter's contour (B)
- block with locking knob the spring's blockade (C)
- pull away the internal arm (D) and mount the holder on meter
- set the mounting handle so that the observed LED diode (rotor or spot) is placed in the middle of scanning head's mounting handle window (E)
- block the mounting handle with locking knob (F)
- mount the scanning head to holder by pushing of scanning head's latch into window of mounting handle (G)
- choose the operating mode (SET ▶ button)
- for the meter with rotor or LCD (⌖ ROTOR mode) start the automatic teaching (SET ▶ button).



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Technical parameters of holder

Adjustment range of holder mounting on the meter's case	45...190mm (single bracket) 45...420mm (double bracket)
Adjustment range of distance between scanning head and the front of meter's case	0...35mm (by changing the mounting of bracket's arm on the meter's case)

Typical applications:

Test of electricity meter with LED
(scanning head mounted by self adhesive Velcro)

Quick test of electricity meter with rotor
(work „by hand" without mounting to meter)

Test of electricity meter with LED (scanning head mounted by using holder – CF106H option)

Test of electricity meter with rotor (scanning head mounted by using holder – CF106H option)

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