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Operating instructions



The unit complies with the corresponding EU guidelines

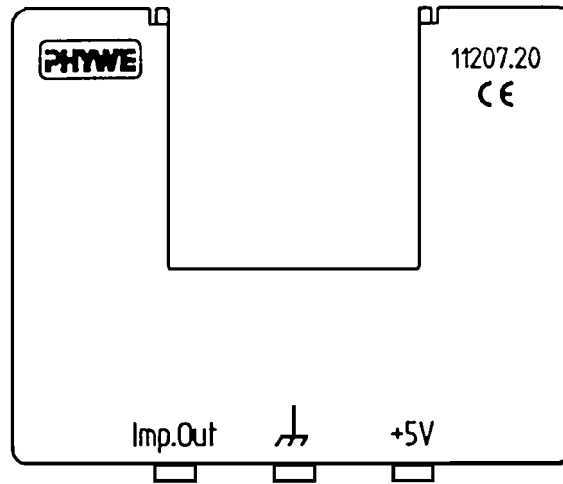


Fig. 1: Light barrier compact 11207-20.

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1 SAFETY PRECAUTIONS



- Carefully read these operating instructions completely before operating this instrument. This is necessary to avoid damage to it, as well as for user-safety.
- Only use the instrument for the purpose for which it was designed.
- Only use the instrument in dry rooms in which there is no risk of explosion.
- Do not connect any other pieces of equipment other than those specified to the instrument.
- The optical path is composed of non-visible infrared radiation. Do not look into the emitter (optical path).

2 PURPOSE AND DESCRIPTION

The fork light barrier (Fig. 1) enables counters, clocks and other equipment to be electronically controlled. Only a very narrow bundle of light reaches the infra-red receiver of the barrier, which is situated deep down in a small drill-hole for complete protection against extraneous light. This ensures a darkening of the receiver by a body with an effective diameter of less than $d = 1.6 \text{ mm}$ at any position in the beam; or even with a diameter of $d = 0.8 \text{ mm}$ when the body is close to the receiver drill-hole. An incremental wheel with groove is supplied with the barrier for optional use (only for 11207-20). This wheel extends the range of applications of the fork light barrier. As an example, when a movable object is connected to the incremental wheel

with a piece of thread which runs in the groove, the distance which the object moves can be determined from the number of interruptions in the beam.

The fork light barrier is ready for use immediately it is switched on.

3 FUNCTION AND OPERATING ELEMENTS

- 1 *TTL output (4 mm socket)*
for controlling peripheral equipment.
- 2 *Ground connection.*
Serves as reference contact for TTL output 1 and power supply connection 3.
- 3 *Power supply connection (4 mm socket).*
Rated voltage +5 V \pm 5% against ground connection 2.
- 4 *Threaded hole (M6)*
for screwing in the rod which is standardly supplied.
- 5 *Holder for the incremental wheel (11207-21) which is standardly supplied.*
- 6 *Receiver drill-hole*

4 HANDLING

4.1 Controlling external equipment

- Connect the connecting sockets 1 and 2 with the gate input of the measuring instrument
- Switch the gate input of the measuring instrument according to requirements

The voltages of the control output are approx. 0 V with illuminated receiver and approx. 5 V with the receiver switched off.

4.2 Electrical supply

The following power supply (+5 V \pm 5%) is suitable:

- Power supply 5V DC/2.4 A 11077-99
- Adapter cable 11077-00

A separate power supply is not required when the fork light barrier is used in combination with the following counting devices:

- Timer 4 - 4 13604-99
- Timer 2-1 13607-99
- Cobra4 Sensor-Unit Timer/Counter 12651-00

5 NOTES ON OPERATION

This high-quality instrument fulfils all of the technical requirements that are compiled in current EC guidelines. The characteristics of this product qualify it for the CE mark.

This instrument is only to be put into operation under specialist supervision in a controlled electromagnetic environment in research, educational and training facilities (schools, universities, institutes and laboratories).

This means that in such an environment, no mobile phones etc. are to be used in the immediate vicinity. The individual connecting leads are each not to be longer than 2 m.

The instrument can be so influenced by electrostatic charges and other electromagnetic phenomena that it no longer functions within the given technical specifications. The following measures reduce or do away with disturbances:

Avoid fitted carpets; ensure potential equalization; carry out experiments on a conductive, earthed surface, use screened cables, do not operate high-frequency emitters (radios, mo-

bile phones) in the immediate vicinity.

6 TECHNICAL SPECIFICATIONS

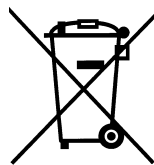
Fork width/depth	40 mm
Wavelength	infra-red
Minimum switch-off time	40 μ s
Output	briefly short circuit proof
Idling voltage	
receiver illuminated	\geq 3.6 V
receiver switched off	approx. 0 V
Input resistance of connected equipment *	$>$ 10 k Ω
Power supply	+5 V \pm 5% ; 80 mA
Polarity protection	briefly
Temperature range	5... 45°C
Thread for rod	M6
Rod length	125 mm

* in this case, with illuminated receiver, a 2 V output voltage for controlling peripheral equipment is ensured.

Incremental wheel	
Number of bars	20
Diameter (groove for thread)	25 mm

7 WASTE DISPOSAL

The packaging consists predominately of environmentally compatible materials that can be passed on for disposal by the local recycling service.



Should you no longer require this product, do not dispose of it with the household refuse.

Please return it to the address below for proper waste disposal.

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