



# PENTRONIC

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## Specifikation Instrument Program

[www.pentronic.se](http://www.pentronic.se)





## FOP Series and OPTV Fibre-Optic Amplifier and Receiver

### Features

- Interference-free pulse detection
- No electrical connection to OPTV receiver
- Blue-anodised aluminum housing
- Light weight and handy design



The FOP is a fibre-optic amplifier for KEM gear flow meters used in high-voltage applications. Its integral pickup detects the r.p.m. of the gears and the FOP provides a flow-proportional light pulse signal. The OPTV receiver will convert the light pulses into a current or voltage squarewave signal which may be used for evaluation.

**Technical Data**

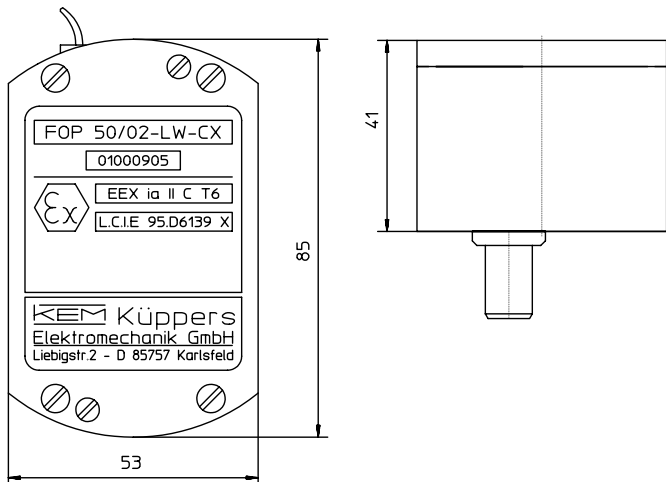
**FOP fibre-optic amplifier**

|                      |   |
|----------------------|---|
| power supply:        | lithium battery   |
| battery lifetime:    | max. 15 months (FOP 50), max. 2 years (FOP 60) with 24h-operation |
| ambient temperature: | -20 up to +50°C   |
| frequency range:     | 3 up to 1,000Hz   |
| weight:              | approx. 350g (FOP 50), approx. 190 g (FOP 60)                     |
| Ex-protection, IS:   | EEx ia IIC T6 , L.C.I.E. 95.D6139X (FOP 50), BVS97D.2001 (FOP 60) |
| housing:             | IP65, anodised aluminium (for dimensions please see drawings)     |

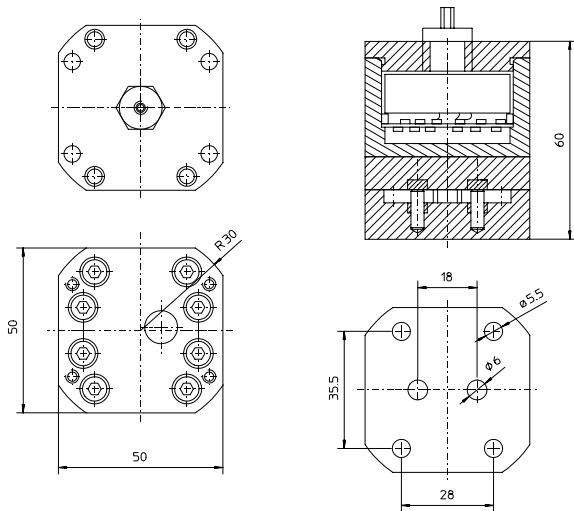
**Fibre-optic cable, silicone-free, ready-to-wire**

|   |                            |
|---|----------------------------|
| type:                                     | OKE1000-C, orange-coloured |
| cable diameter:                           | 5.5mm                      |
| plug diameter:                            | < 8.5mm                    |
| bending radius:                           | > 10/50mm                  |
| tensile strength:                         | 250/100N                   |
| bending strength in alternate directions: | > 10,000                   |
| ambient temperature:                      | -30 up to +80°C            |
| plug type:                                | 2 off LWST1000 65          |
| protection class:                         | IP 65                      |
| cable length:                             | max. 10m                   |
| wire tip material:                        | nickel-silver (ARCAP)      |

**Dimensional drawing FOP 50 (mm)**



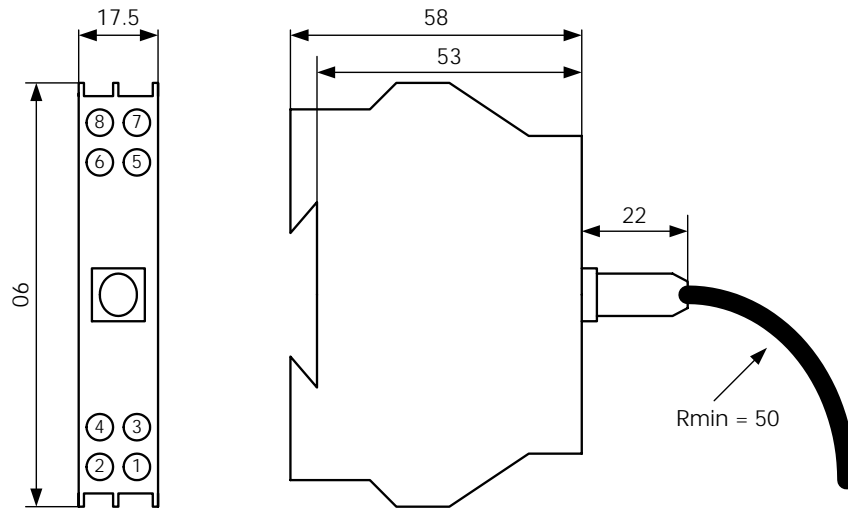
Dimensional drawing FOP 60 (mm)



OPTV-02/X light pulse receiver and converter

- ambient temperature: -20 up to +60°C
- supply voltage: UB: +7 up to +30V
- quiescent current: IR < 1.1mA
- output: frequency output, constant pulsetime 500 asec
- electrical data, alternatively: *voltage outputs (3-wire connection)*
  - a) active output
    - high level:  $U_{high} > U_B - 0.6V - 2.5k\Omega \times I_{out} \text{ (mA)}$
    - low level:  $U_{low} < 0.6V + 1.3k\Omega \times I_{out} \text{ (mA)}$
  - b) passive output
    - high level:  $U_{high} > U - I_{out} \text{ (mA)} \times 1.3k\Omega$
    - low level:  $U_{low} < 0.6V + 1.3k\Omega \times I_{out} \text{ (mA)}$
- U is the voltage applied at the output, max. 30V*
- current output (2-wire connection)*
  - a) for UB < 9V (NAMUR supply units)
    - high level:  $I_{high} > 2.2mA$
    - low level:  $I_{low} < 1.1mA$
  - b) for UB 7 up to 30V
    - high level:  $I_{high} = (U_B - 0.6V)/1.3k\Omega + I_{Low}$
    - low level:  $I_{low} = (U_B - 4V)/7.5k\Omega$
- frequency range: 3 up to 2,000Hz according to flow meter
- electrical connection: two off 4-pin screw terminals for supply and output signals (cf. wiring schemes, page 5)
- Ex protection: EEx ia IIC T6 intrinsically safe, L.C.I.E. 91.C 6033X
- housing: grey-coloured polycarbonate for DIN hat top rail mounting

Dimensional drawing OPTV (mm)

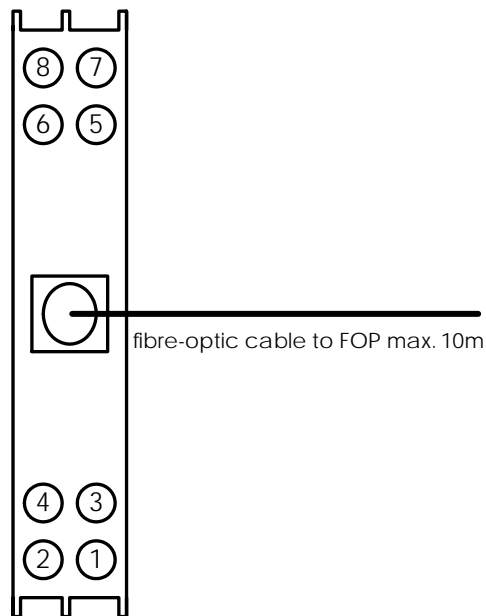


Pin connections OPTV

- 1 = signal/out+
- 2 = 0V
- 3 = n.c.
- 4 = UB+
- 5 = detection of line breakage
- 6 = detection of line breakage
- 7 = 2-wire active
- 8 = 2-wire active

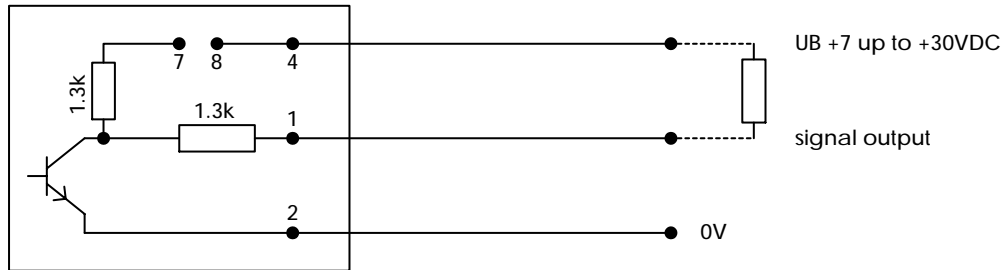
connection via  
screw terminals

- U<sub>max.</sub> = 30V
- I<sub>max.</sub> = 185mA
- C<sub>i</sub> = 30nF
- L<sub>i</sub> = 265μH

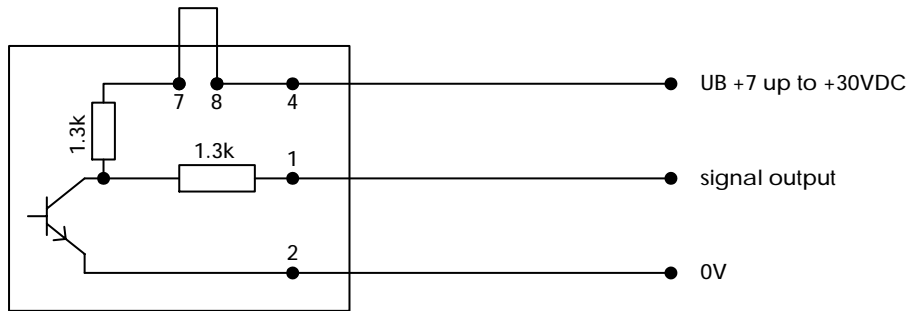


Wiring schemes OPTV

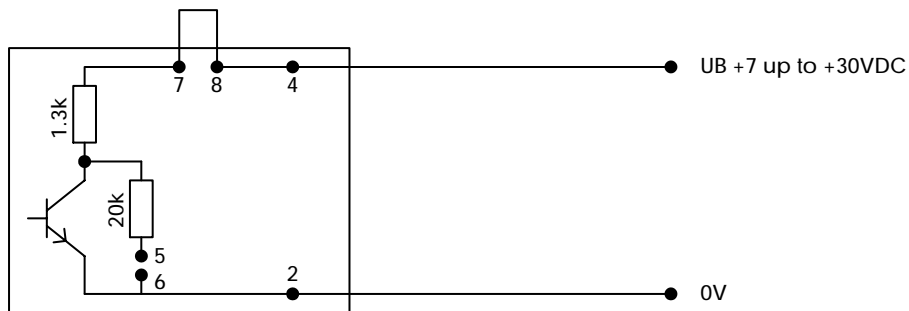
*3-wire passive*



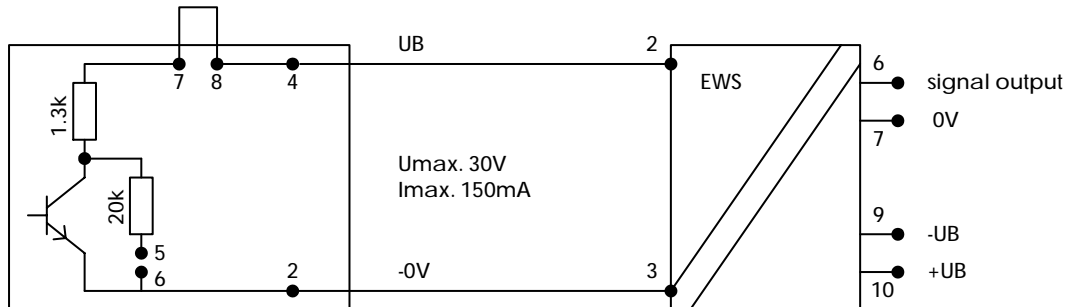
*3-wire active*



*2-wire*



*2-wire with KEM separation amplifier type EWS*



## Ordering Information

FOP \*\*/\*\*\_\*\*\_\*\*

C\* = with threadless pickup coil

SK = short pickup coil with thread M 14 x 1.5 for ZHM 02-04

SR = short pickup coil with thread M 14 x 1.5 for ZHM 01/\*

SS = long pickup coil with thread M 14 x 1.5 for ZHM 02

50/02-LW = FOP with threadless pickup coil for ZHM...LW

50/XX-XX = pickup coil with thread for ZHM series

60/01/1-CT = with threadless pickup coil for ZHM...CT

\*\* -CM = with threadless pickup coil for LFM 10