

# CE **VISC**�

#### **Model Number**

#### MLV41-6/82b/92/103

Retroreflective sensor

with 4-pin, M12 x 1 connector

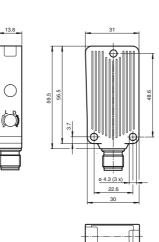
#### **Features**

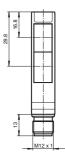
- Rugged series in corrosion-resistant ٠ metal housing
- Extremely high switching frequency ٠
- Clear and functional display concept • for the operating modes
- Resistant against noise: reliable operation under all conditions
- Aluminum housing with high quality ٠ Delta-Seal coated

#### **Product information**

The unique and extremely popular design of the MLV41 series enables it be mounted correctly in confined areas and offers all the functions that are normally only found on larger phototelectric sensors. The MLV41 series comes with a range of functions grouped together under the VISO+ quality symbol. For example, highly visible status LEDs on the front and back, resistance to ambient light, crosstalk protection and universally applicable output stages that permit every possible switching logic and polarity to be realized. The enhanced resistance to ambient light ensures reliable operation even where modern energy-saving lamps with electronic ballasts are in use. The same applies where multiple devices are present, i.e. the use of a number of sensors in the same vicinity causes no problems.

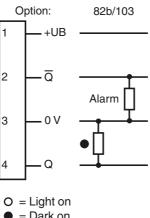








### **Electrical connection**

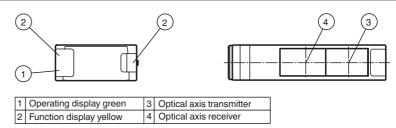


= Dark on

## Pinout



### Indicators/operating means



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Reflector distanceFoil reflector 0.05 3 m Retro-reflector 0.01 9.5 mMLV4Threshold detection range12 mOMH- MountReference targetOFR-22800/76 , H85-2 reflectorV1-G- CableLight sourceLEDV1-G- CableLight typemodulated visible red light , 625 nmV1-G- CableDiameter of the light spotapprox. 300 mm at detection range 8.5 mV1-W- CableAngle of divergence1.5 °CableOptical facefrontalOther	essories
Effection range     09.5 m     Mounting       Reflector distance     Foil reflector 0.09.5 m     Mounting       Threshold detection range     12 m     OMH-       Reference target     OFR-22600/76, H85-2 reflector     Mounting       Light source     LED     Mounting     V1-G-       Cable     approx.300 mm at detection range 8.5 m     Angle of divergence     1.5 *       Optical face     frontal     approx.300 mm at detection range 8.5 m     Other       Angle of divergence     1.5 *     Cable     Other       Optical face     frontal     Angle of divergence     Other       MTFra     940 a     Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (DC)     0 %     Other     Www.p       Mission Time (T <sub>M</sub> )     20 a     Diagnostic Coverage (DC)     0 %       Inclustors/operating means     LED green, statically lif Power on , Undervotage indicator:     Green LED, pulsing (approx. 0.8 Hz), short-circuit 1: LED green       Fourtion display     LED green, statically lif Power on , Undervotage indicator:     Green LED, pulsing (approx. 0.8 Hz), short-circuit 2: LED green       Poreating votage     U <sub>B</sub> .030 V DC     Mounting ontage       Green LED,	
Reflector distance       Foil reflector 0.0 9. 5 m       MULV4         Threshold detection range       12 m       OMH-         Angle detection range       12 m       OMH-         Light source       LED       V1-G.         Light source       LED       V1-G.         Angle deviation       max. ± 1.5 °       Calce         Diameter of the light spot       approx. 300 mm al detection range 8.5 m       Calce         Angle deviation       max. ± 1.5 °       Calce       Calce         Optical face       frontal       Cable       Other         Angle of divergence       1.5 °       Cybical face       Other         MTF4       940 a        Cable         Diagnostic Coverage (DC)       0 %        Cable         Indicators/operating means       Copocal face       frontal       Cable         Operating voltage       Ug       1030 V DC       No.       Cable         Controls       none       Electrical specifications       No mA       Copocal face         Operating voltage       max. 30 V DC       No.       No.       No.         No-load supply current       max. 30 V	
Pattor-reflector 0.01 9.5 m       MUV4         Threshold detection range       12 m       OMH-         Reference target       OFR-22800/76, H85-2 reflector       MUV4         Light source       LED       With source       V1-G.         Light type       modulated visible red light, 625 nm       Angle division       With Source         Diameter of the light spot       approx. 300 mm at detection range 8.5 m       Angle of divergence       15 °         Angle of divergence       15 °       Control       Cable         Opticat face       frontal       20000 Lux       Cable         Threshold type       940 a       Cable       Other         MUTF G       940 a       Source       Source       Www.p         Mission Time (T <sub>M</sub> )       20 a       Control       Source       Source         Indicators/operating means       Coperating display       LED genes, istatically it Power on , Undervoltage indicator: Green LED, Joing (approx. 0.8 H2), short-circuit protected, reverse polarity portor         Function display       LED genes, istatically it Power on, Undervoltage indicator: Green LED, volta, short-circuit protected, reverse polarity portor- tio, spen collector         Switching ourcent       1 PNP function reserve output (alarm), short-circuit protec	nting bracket for Sensors series
Peteronce target       OFF-22800/76, H85-2 reflector       Mount         Light source       LED       Mount         Light type       modulated visible red light , 625 nm       Mount         Angle deviation       max. ± 15 "       Cable         Diameter of the light spot       approx. 300 nm at detection range 8.5 m       Cable         Angle of divegence       1.5 "       Cable         Optical face       frontal       Ambient light limit       20000 Lox         Functional safety related parameters       MUTF       940 a       Other         Mission Time (Tw)       20 a       Diagnostic Coverage (DC)       0 %         Indicators/operating means       Doperating (approx. 0.4 Hz)       Sintro-triccult : LED green         Function display       LED green, cialically lift Power on. Undervoltage indicator:       Green LED, pairing (approx. 0.8 Hz), short-circult : LED green         Function display       LED yellow, lights up when light beam is free, flashes when fal-ling short of the stability control       ED green cialically lift power on. Undervoltage indicator:         Operating voltage       max. 10 %       No-tocicult protected, ror reverse polarity protected, protected, protected, protected, protected, protected, protected, ror reverse polarity protected, open collector         Signal output       1 PNP func	41 for M12 rod mounting
Reference target   OFR-22800/76, H85-2 reflector   Mount     Light source   LED   Mount     Light type   modulated visible red light , 625 nm   Mount     Angle deviation   max. ± 15 *   Cable     Diameter of the light spot   approx. 300 nm al detection range 8.5 m   Cable     Angle of divergence   1.5 *   Cable     Optical face   frontal   Cable     Ambient light limit   20000 Lux   Cable     Functional safety related parameters   Mount   Other     MTF-G   940 a   Mission Time (Tru)   20 a     Diagnostic Coverage (DC)   0 %   Indicators/approx. 0.8 Hz), short-circuit : LED green     Indicators/approxaming means   UED yealow, lights up when light beam is free, flashes when fal-     Operating display   LED yealow, lights up when light beam is free, flashes when fal-     Electrical specifications   none     Electrical specifications   none     Operating voltage   Ug     Pre-fault Indication output   1 PNP function reserve output (alarm), short-circuit protected, protected for reverse polarity protected, open collector     Signal output   1 PNP poutput, short-circuit protected, open collector     Switching ourent   max. 30 v DC     Switching requency   f   1000 Hz     Res	40
Instruction larger     CIT PECOD 07, Trock Tentector       Light source     LED       Light type     modulated visible red light, 625 nm       Angle deviation     max: 1.5 °       Diameter of the light spot     approx. 300 mm at detection range 8.5 m       Angle deviation     1.5 °       Diameter of the light spot     approx. 300 mm at detection range 8.5 m       Angle deviation     1.5 °       Punctional safety related parameters     WWW.p       MTFTG     940 a       Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicators/operating means     Operating display       Operating display     LED yelow, lights up when light beam is free, flashes when failing (approx. 0.8 Hz), short-circuit protected, protected, portoclast supply current       Operating voltage     Ug     10 30 V DC       Ripple     max. 10 %       No-toad supply current     0 max. 30 mA       Output     1 PNP function reserve output (alarm), short-circuit protected, protected, port collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protected, open collector       Switching output     1 PNP output, short-circuit protected, reverse polarity protected, for, reverse polarity, open collector <td></td>	
Light type   modulated visible red light , 625 nm   Cable     Angle deviation   max. ± 15 *   Cable     Diameter of the light spot   approx. 300 nm at detection range 8.5 m   Cable     Angle of divergence   1.5 *   Cable     Optical face   frontal   Cable     Ambient light limit   20000 Lux   Cable     Functional safety related parameters   Uther   Www.p     MTTF_g   940 a   Cable     Indicators/operating means   Do %   Cable     Operating display   LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.6 Hz), short-circuit 1: LED green flashing (approx. 4 Hz)   ED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.6 Hz), short-circuit protected, protected form reverse polarity open collector     Function display   LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.6 Hz), short-circuit protected, protected form reverse polarity open collector     Function display   1030 V DC     Prefault indication output   1 NP function reserve output (alarm), short-circuit protected, reverse polarity open collector     Prefault indication output   1 NP function reserve output (alarm), short-circuit protected, reverse polarity open collector     Signal output   1 NP function reserve output (alarm), short-circuit protected, reverse polarity open collector     Signal output </td <td>nting bracket</td>	nting bracket
Light type       modulated visible red light , 625 nm       Cable         Angle deviation       max. ± 15 °       Cable         Angle deviation       maprox. 300 mm at detection range 8.5 m       Cable         Angle of divergence       1.5 °       Cable         Optical face       frontal       Cable         Ambient light limit       20000 Lux       Cable         Functional safety related parameters       MTTF_g       940 a         Mission Time (T <sub>N</sub> )       20 a       Cable         Diagnostic Coverage (ICC)       0 %       Indicators/operating means         Operating display       LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0 & Hz), short-circuit 1. LED green fashing (approx. 4 Hz)       Function display         Function display       LED yelow, lights up when light beam is free, flashes when fat- ling short of the stability control       Controls         Prevalut indication output       10 30 V DC       Ripple         Protection reserve polarity, pone collector       protected from reserve polarity, pone collector         Operating voltage       max. 10 %       No-modellector         Protection gorent       max. 30 V DC       Signal output       1 PNP function reserve output (alarm), short-circuit protec- ted, open collector	
Angle diversion       max. ± 15 *       Callel         Diameter of the light spot       approx. 300 mm at detection range 8.5 m       Callel         Angle of divergence       1.5 *       Callel         Optical face       frontal       Callel         Ambient light mint       20000 Lux       Other         Functional safety related parameters       MTTF_g       940 a         Mission Time (T <sub>M</sub> )       20 a       Diagnostic Coverage (DC)       0 %         Indicators/operating means       Operating (approx. 0.6 Hz), short-circuit 1: LED green flashing (approx. 0.6 Hz), short-circuit 1: Directed, protected from reverse polarity, open collector         Pre-fault indication output       1 PNP function reserve output (alarm), short-circuit protected, reverse polarity protected, protected from reverse polarity, open collector         Signal output       1 PNP function reserve output (alarm), short-circuit protected, reverse polarity protected, from reverse polarity, open collector         Switching ou	-
Diameter of the light spot   approx. 300 mm at detection range 8.5 m   V1-W-Cable     Angle of divergence   1.5 °   Collabolity     Angle of divergence   1.5 °   Collabolity     Ambient light limit   20000 Lux   Collabolity     Functional safety related parameters   MTTFq   940 a     MTTFq   940 a   Collabolity     Diagnostic Coverage (DC)   0 %   Other     Indicators/operating means   Collabolity   LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz), short-circuit : LED green flashing (approx. 4 Hz)     Function display   LED pellow, lights up when light beam is free, flashes when falling short of the stability control     Controls   nore     Perfault indication output   1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity protected, switching current     Signal output   1 PNP output, short-circuit protected, reverse polarity protected, switching requency     Signal output   1 PNP output, short-circuit protected, reverse polarity protected, open collector     Switching switching requency   1000 Hz     Response time   0.5 ms     Ambient conditions   Ambient conditions     Ambient conditions   Ambient conditrons	e socket, M12, 4-pin, PUR cable
Angle of divergence     1.5°     Cable       Optical face     frontal     Cable       Ambient light limit     20000 Lux     Other       Functional safety related parameters     MTTFg     940 a       Mission Time (T <sub>W</sub> )     20 a     Diagnostic Coverage (DC)     0 %       Indicators/operating means     ED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz), short-circuit : LED green flashing (approx. 4 Hz)     Function display       Function display     LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz), short-circuit : LED green flashing (approx. 4 Hz)     Function display       Function display     LED yealow, lights up when light beam is free, flashes when fal- ling short of the stability control     Inspect       Opticating voltage     Ug     1030 V DC     No-load supply current       No-load supply current     1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity protec- ted, open collector     Signal output     1 PNP output, short-circuit protected, protected from reverse polarity protec- ted, open collector       Switching voltage     max. 30 V DC     Signal output     1 PNP output, short-circuit protected, protected from reverse polarity protec- ted, open collector       Switching requency     f 000 Hz     Response time     0.5 m	
Optical face   frontal   Cubic     Amisent light limit   20000 Lux   Other     MTFG   940 a   Mission Time (T <sub>N</sub> )   20 a     Diagnostic Coverage (DC)   0 %   Mission Time (T <sub>N</sub> )   20 a     Diagnostic Coverage (DC)   0 %   Secondary   EED green, statically lit Power on , Undervoltage indicator: Green EED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit : cleD green flashing (approx. 0.8 Hz) , short-circuit : protected, protected from reverse polarity condicion: : : : : : : : : : : : : : : : : : :	
Ambient light limit   20000 Lux   Other     Functional safety related parameters   Www.p     MTTF_0   940 a     Mission Time (T <sub>M</sub> )   20 a     Diagnostic Coverage (DC)   0 %     Indicators/operating means   EED green, statically lit Power on , Undervoltage indicator: Green LED, public gaprox. 0.8 Hz) , short-circuit : LED green Itashing (approx. 4 Hz)     Function display   LED yellow, lights up when light beam is free, flashes when fal- ling short of the stability control     Controls   none     Electrical specifications   Electrical specifications (operating voltage)     Up and the stability control   max. 10 %     No-load supply current   max. 30 vA     Output   1 PNP function reserve output (alarm), short-circuit protected, operating voltage     Witching voltage   max. 30 vA     Output   1 PNP function reserve output (alarm), short-circuit protected, operating voltage     Switching voltage   max. 30 vA     Switching voltage   max. 30 vA     Switching surgert   .00 60 °C (-40 140 °F)     Switching requency   f     Ambient conditions     Ambient conditions     Ambient emperature   -40 60 °C (-40 167 °F)     Mechanical specifications     Protected regree   IPA7     Connector   metal  <	e socket, M12, 4-pin, PUR cable
Functional safety related parameters   WWW.P     MTTR_a   940 a     MTSison Time (T <sub>M</sub> )   20 a     Diagnostic Coverage (DC)   0 %     Indicators/operating means   ED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 0.8 Hz) , short-circuit protected. Ing short of the stability control     Controls   none     Electrical specifications   max. 10 %     Operating voltage   max. 10 %     No-load supply ourrent   10 max. 30 mA     Output   1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity protec- ted, open collector     Signal output   1 PNP output, short-circuit protected, protected from reverse polarity protec- ted, open collector     Switching voltage   max. 100 mA     Voltage drop   U <sub>d</sub> Switching requency   f     Mobient temperature   -40 60 °C (-40 140 °F)     Storage temperature   -40 75 °C (-40 140 °F)     Meterial   Image appentance     Optical face   glass pane     Connector   metal </td <td>suitable accessories can be found a</td>	suitable accessories can be found a
MTTF <sub>q</sub> 940 a       Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (CC)     0 %       Indicators/operating means     Coverage (CC)       Operating display     LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 H2), short-circuit : LED green flashing (approx. 4 Hz)       Function display     LED yellow, lights up when light beam is free, flashes when fal- ling short of the stability control       Controls     none       Electrical specifications     max. 10 %       No-load supply current     10 30 V DC       Ripple     max. 30 mA       Output     Pre-fault indication output       Pre-fault indication output     1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protec- ted, open collector       Switching voltage     max. 100 mA       Voltage drop     U <sub>d</sub> Abient conditions     -40 60 °C (-40 140 °F)       Storage temperature     -40 60 °C (-40 140 °F)       Storage temperature     -40 60 °C (-40 140 °F)       Material     Image and unminum, Delta-Seal coated       Optical face     glass pane	
Mission Time (T <sub>M</sub> )     20 a       Diagnostic Coverage (DC)     0 %       Indicators/Operating means     LED gene, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)       Function display     LED yellow, lights up when light beam is free, flashes when fal- ling short of the stability control       Controls     none       Electrical specifications     Operating yoitage       Operating yoitage     Ug       No-load supply current     nax. 30 vDC       Ripple     max. 30 mA       Output     PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protec- ted, open collector       Switching requery     f 1000 Hz       Response time     0.5 ms       Ambient temperature     40 60 °C (-40 140 °F)       Storage temperature     40 75 °C (-40 167 °F)       Material     Housing       Housing     alurinum, Delta-Seal coated       Optical face     glass pane       Connector     metal       Material     Housing       Housing     alurinum, Delta-Seal coated	pepperl-fuchs.com
Diagnostic Coverage (DC)     0 %       Indicators/operating means     ED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 14 Hz)       Function display     LED yelow. (ights up when light beam is free, flashes when falling short of the stability control       Controls     none       Electrical specifications     one       Operating voltage     Ug     1030 V DC       Ripple     max. 30 vA       No-load supply current     log max. 30 vA       Output     1 PNP function reserve output (alarm), short-circuit protected, protected, reverse polarity protected, copen collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protected, copen collector       Switching voltage     max. 30 VDC       Switching current     max. 10 0mA       Voltage drop     Ug     2.5 V DC       Switching frequency     f     1000 Hz       Response time     0.5 ms     Ambient conditions       Ambient conditions     IPAF     IPAF Seal (adum), adum       Material     IPAF     IPAF       Material     IPAF     IPAF       Material     IPAF     IPAF       Connection     C	
Indicators/operating means     LED green, statically lit Power on , Undervoltage indicator:       Green LED, pulsing (approx. 0. 8 Hz) , short-circuit : LED green ftashing (approx. 0. 8 Hz) , short-circuit : LED green ftashing (approx. 4 Hz)       Function display     LED yelow; lights up when light beam is free, flashes when falling short of the stability control       Controls     none       Electrical specifications     none       Operating voltage     Ug     10 30 V DC       Ripple     max. 10 %       No-load supply current     0     max. 30 mA       Output     1 PNP function reserve output (alarm), short-circuit protected, protected for nereverse polarity, open collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protected for ecollector       Switching requency     f     1000 Hz       Response time     0.5 ms       Ambient conditions     -40 60 °C (-40 140 °F)       Storage temperature     -40 60 °C (-40 140 °F)       Storage temperature     -40 75 °C (-40 167 °F)       Mechanical specifications     Protected for degree       Protector dorgree     IP67       Connection     connector M12 x 1, 4-pin       Material     Housing       Mass     50 g	
Operating display     LED green, statically lit Power on, Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz), short-circuit : LED green flashing (approx. 4 Hz)       Function display     LED yellow, lights up when light beam is free, flashes when fal- ling short of the stability control       Controls     none       Electrical specifications     max. 30 V DC       Operating voltage     UB     10 30 V DC       Ripple     max. 10 %       No-load supply current     10       Ther-fault indication output     1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protected, open collector       Switching voltage     max. 30 V DC       Switching voltage     max. 30 V DC       Switching requency     1 000 Hz       Response time     0.5 ms       Ambient conditions     -40 60 °C (-40 140 °F)       Storage temperature     -40 60 °C (-40 167 °F)       Mechanical specifications	
Green LED, pulsing (approx. 0.8 Hz), short-circuit : LED genen flashing (approx. 4 Hz)Function displayLED yellow, lights up when light beam is free, flashes when fai- ling short of the stability controlControlsnoneElectrical specificationsmax. 10 %Dyerating voltageUg max. 10 %No-load supply currentIo max. 30 mAOutput1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collectorSignal output1 PNP output, short-circuit protected, reverse polarity protec- ted, open collectorSwitching voltagemax. 30 mAVoltagemax. 30 mASwitching requencyfSwitching requencyf1 000 HzSwitching requencyf1000 HzResponse time0.5 msAmbient temperature-40 60 °C (-40 140 °F)Storage temperature-40 60 °C (-40 140 °F)Storage temperature-40 75 °C (-40 140 °F)Mechanical specificationsProtector director M12 x 1, 4-pinMaterialHousingaluminum, Delta-Seal coatedOptical faceglass paneConnectormetalMass50 gCompliance with standards and directProtected conformityEN 60947-5-2:2007EMC Directive 2004/108/CEEN 60947-5-2:2007IEC 60947-5-2:2007IEC 60947-5-2:2007IEC 60947-5-2:2007IEC 60947-5-2:2007IEC 60947-5-2:2007IEC 60947-5-2:2007IEC	
Function display     Itashing (approx. 4 Hz)     LED yellow, lights up when light beam is free, flashes when fal- ling short of the stability control       Controls     none       Electrical specifications     Operating voltage     UB       Operating voltage     UB     10 30 V DC       Ripple     max. 10 %     No-load supply current     Ip       Pre-fault indication output     1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector       Signal output     1 PNP output short-circuit protected, reverse polarity protected, open collector       Switching voltage     max. 30 V DC       Switching current     max. 30 V DC       Switching current     max. 30 V DC       Switching requency     f       Voltage drop     Ud     ≤ 2.5 V DC       Switching requency     f     1000 Hz       Response time     -0.5 ms       Ambient conditions     -40 60 °C (-40 140 °F)       Storage temperature     -40 75 °C (-40 167 °F)       Mechanical specifications	
Iing short of the stability control     Controls   none     Electrical specifications   none     Operating voltage   UB   10 30 V DC     Ripple   max. 10 %     No-load supply current   I0     Ignal output   max. 30 mA     Output   1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector     Signal output   1 PNP output, short-circuit protected, reverse polarity protected, reverse polarity open collector     Switching voltage   max. 30 V DC     Switching voltage   max. 30 V DC     Switching requency   f     Voltage drop   Ud     < 2.5 V DC	
Electrical specifications     UB     1030 V DC       Ripple     max. 10 %       No-load supply current     Io     max. 30 mA       Output     Pre-fault indication output     1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector       Signal output     1 PNP output, short-circuit protected, reverse polarity protected from reverse polarity open collector       Switching voltage     max. 30 V DC       Switching current     max. 30 V DC       Switching frequency     f       Voltage drop     Ud       Avbient conditions     0.5 ms       Ambient conditions     40 60 °C (40 140 °F)       Storage temperature     40 75 °C (40 167 °F)       Machanical specifications     1000 Hz       Protection degree     IP67       Connection     connector M12 x 1, 4-pin       Material     uminum, Delta-Seal coated       Mass     50 g       Connector     glass pane       Connector     0 glass pane       Connector     0 glass pane       Connector     10 k60947-5-2:2007       Standard conformity     ENC 60947-5-2:2007       EMC Directive 2004/108/EC	
Operating voltageUg10 30 V DCRipplemax. 10 %No-load supply currentIqmax. 30 mAOutputPre-fault indication output1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collectorSignal output1 PNP output, short-circuit protected, reverse polarity protected, open collectorSwitching voltagemax. 30 V DCSwitching currentmax. 100 mAVoltage dropUd $\leq 2.5$ V DCSwitching frequencyfMabient conditionsAmbient temperature-40 60 °C (-40 140 °F)Storage temperature-40 75 °C (-40 167 °F)Mechanical specificationsProtection degreeIP67Connectionconnector M12 x 1, 4-pinMaterialHousingaluminum, Delta-Seal coatedOptical faceglass paneConnectormetalMass50 gCompliance with standards and directivesVerProduct standardProduct standardEN 60947-5-2:2007Standard conformityEN 60947-5-2:2007Standard conformityEN 60947-5-2:2007Product standardCulLus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)	
Operating voltageUB10 30 V DCRipplemax. 10 %No-load supply currentI0max. 30 mAOutputPre-fault indication output1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collectorSignal output1 PNP output, short-circuit protected, reverse polarity protected, open collectorSwitching voltagemax. 30 V DCSwitching currentmax. 100 mAVoltage dropUdSolar open collectorSwitching requencyff1000 HzResponse time0.5 msAmbient temperature-40 60 °C (-40 140 °F)Storage temperature-40 75 °C (-40 167 °F)Mechanical specificationsFP67Protection degreeIP67Connectionconnector M12 x 1, 4-pinMaterialImminum, Delta-Seal coatedHousingaluminum, Delta-Seal coatedOptical faceglass paneConnectormetalMass50 gCompliance with standards and directivesVesImage: Second ConnectionVesImage: Second ConnectionProduct standardEN 60947-5-2:2007Standard conformityEN 60947-5-2:2007Product standardEN 60947-5-2:2007VL approvalcULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)	
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CCC approval / marking not required for products rated \$36 V	

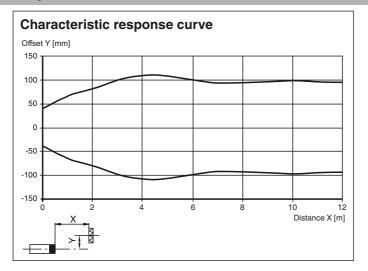
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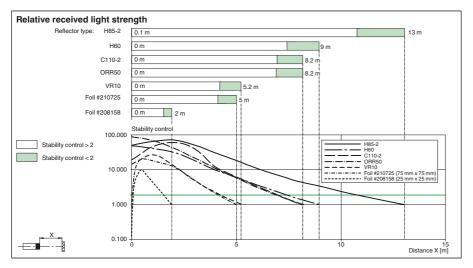
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# **Curves/Diagrams**





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