

PSC Compact Micro Sensor

low cost micro size
infrared thermometer



Features

- Size: M12x1, 28 mm long, stainless steel housing
- Temperature range: -40°C to 1030°C
- Rugged coated silicon optics
- Usable up to 120°C ambient temperature without cooling (sensing head)
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Cable built in electronics
- Scalable analog output: 0-10 V or 0-5 V and additional simultaneous alarm output
- Short circuit and polarity reversal protection
- Adjustable signal processing
- Optional USB programming interface and software
- Wide power range: 5-30 V DC

General Specifications

| | |
|----------------------|--|
| Environmental rating | IP 65 (NEMA-4) |
| Ambient temperature | -20°C to 120°C (sensing head) -20°C to 80°C (electronics) |
| Storage temperature | -40°C to 85°C (sensing head and electronics) |
| Relative humidity | 10 - 95%, non condensing |
| Vibration | IEC 68-2-6: 3 G, 11-200 Hz, any axis |
| Shock | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | 42 g |

Electrical Specifications

| | |
|----------------|---|
| Output/analog | 0-5 V or 0-10 V 1/10/100 mV/°C |
| Output/alarm | 24 V/50 mA (open collector) |
| Output/digital | uni-/bidirectional, 9,6 kBaud, 0/3V digital level, USB optional |
| Input (0-10 V) | Programmable functional input for external emissivity setting/ambient temperature adjustment, triggered signal output or peak-hold function |
| LED-functions | alarm indication, automatic aiming support, self diagnostic, temperature indication (via. temp.code) |
| Cable length | head - electronics: 0.5 m (standard), 3 m, 6 m after electronics: 0.5 m (standard), 3 m |
| Power supply | 5-30 V DC |
| Current draw | 9 mA |

Measurement Specifications

| | |
|---|---|
| Temperature range (scalable via software) | -40°C - 1030°C |
| Spectral range | 8 - 14 µm |
| Optical resolution (90 % energy) | 15:1 (precision glass optics) 2:1 (with flat front window) |
| CF-lens (optional) | 0.8 mm @ 10 mm (15:1) 2.5 mm @ 23 mm (2:1) |
| System accuracy | ± 1.5% or ± 1.5°C ^{1), 2)} |
| Repeatability | ± 0.75% or ± 0.75°C ^{1), 2)} |
| Temperature coefficient | ± 0.05 K/K oder ± 0.05 %/K ³⁾ |
| Temperature resolution | 0.15 K |
| Response time (90%) | 30 ms - 999 s (adjustable) |
| Emissivity/Gain (adjustable via 0-5 V DC input or software) | 0.100 - 1.100 |
| Transmissivity (adjustable via software) | 0.100 - 1.100 |
| Signal processing (parameter adjustable via software) | peak hold, valley hold, average; extended hold function with threshold and hysteresis |
| Dimensions of electronics | length: 35 mm diameter: 12 mm |
| Software | optris Compact Connect |

¹⁾ object temperature > 0°C; whichever is greater

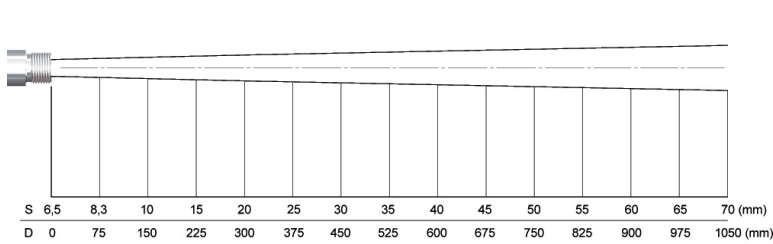
²⁾ at ambient temperature 23 ± 5°C

³⁾ for ambient temperatures <18°C and >28°C; whichever is greater

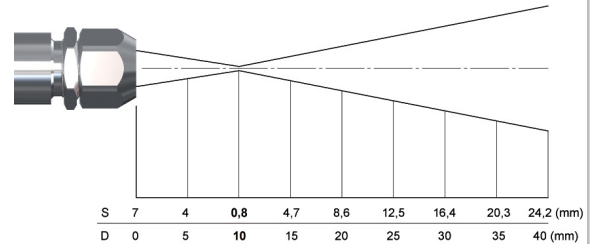
PSC Compact Micro Sensor

Optical Specifications

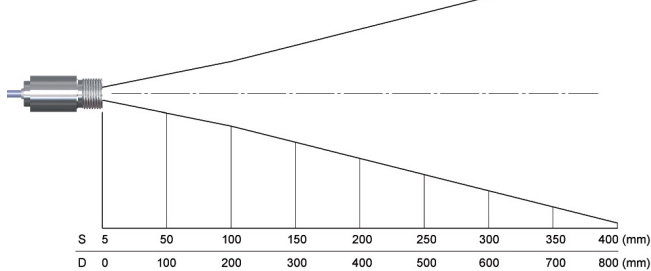
Optics, D:S = 15:1



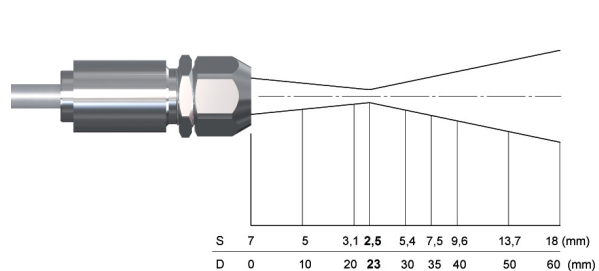
Optics with CF-lens, D:S = 15:1



Optics, D:S = 2:1

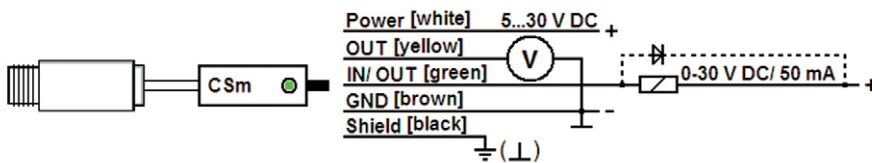


Optics with CF-lens, D:S = 2:1

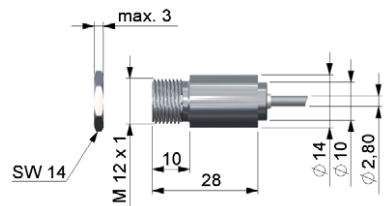


Interfaces/Dimensions

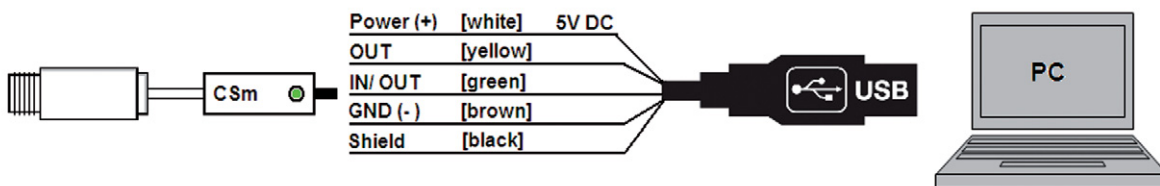
Connection analog with open collector alarm output



Dimensions optris CSmicro LT

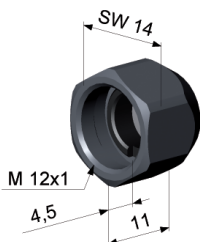


Connection digital with USB adapter cable

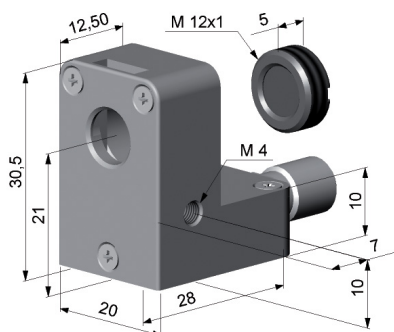


Accessories (examples)

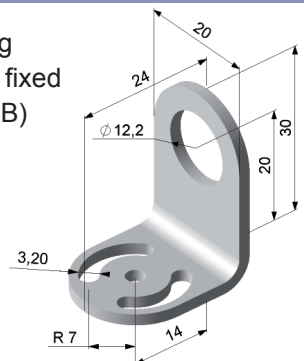
CF-lens (ACCTCF)



Air purge collar with integrated CF-lens (ACCTAPLCF)



Mounting bracket, fixed (ACCTFB)



PSC-CMS-2W-LT Series

Compact Micro Size 2-Wire infrared thermometer



Features

- Size: 14 mm O.D., 28 mm long, stainless steel housing
- Temperature range: -40°C to 1030°C
- Rugged coated silicon optics
- Usable up to 120°C (LT15) or 180°C (LT15H or LT22H) ambient temperature without cooling (sensing head)
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Cable built in electronics
- Scalable analog output: 4 - 20 mA and additional simultaneous alarm output
- Short circuit and polarity reversal protection
- Adjustable signal processing
- Optional USB programming interface and software
- Wide power range: 5-30 V DC

General Specifications

| | |
|----------------------|---|
| Environmental rating | IP 65 (NEMA-4) |
| Ambient temperature | -20°C - 120°C (LT sensing head) -20°C - 180°C (LTH sensing head) -20°C - 75°C ¹⁾ (electronics) |
| Storage temperature | -40°C - 85°C (sensing head and electronics) |
| Relative humidity | 10 - 95%, non condensing |
| Vibration | IEC 68-2-6: 3 G, 11-200 Hz, any axis |
| Shock | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | 42 g |

Electrical Specification

| | |
|---------------------|--|
| Output/analog | 4-20 mA |
| Loop resistance | max. 1000 Ω ²⁾ |
| Output/alarm | 0-30 V/500 mA (open collector) |
| Output/digital | uni-/bidirectional, 9.6 kBaud, 0/3V digital level, USB (option) |
| Input | Programmable functional input for triggered signal output or peak-hold function |
| LED functions | alarm indication, automatic aiming support, self diagnostic, temp. indication (via temp. code) |
| Cable length | |
| head - electronics: | 0.5 m (standard), 3 m, 6 m |
| after electronics: | 0.5 m (standard), 3 m |
| Power supply | 5-30 V DC |

Measurement Specifications

| | |
|---|---|
| Temperature range (scalable via software) | -40°C - 1030°C |
| Spectral range | 8 - 14 μm |
| Optical resolution (90 % energy) | 15:1 (LT, LTH) 22:1 (LTH) |
| CF-lens (optional) | 0.8 mm @ 10 mm (15:1) 0.6 mm @ 10 mm (22:1) |
| System accuracy | ± 1.0% or ± 1.5°C ^{1), 2)} |
| Repeatability | ± 0.5% or ± 0.75°C ^{1), 2)} |
| Temperature coefficient | ± 0.05 C/C or 0.5%/K ³⁾ |
| Temperature resolution | 0.1 K |
| Response time (90%) | 30 ms (LT) / 150 ms (LTH) |
| Emissivity/Gain (adjustable via 0-5 V DC input or software) | 0.100 - 1.100 |
| Transmissivity (adjustable via software) | 0.100 - 1.100 |
| Signal processing (parameter adjustable via software) | peak hold, valley hold, average; extended hold function with threshold and hysteresis |
| Dimensions of electronics | length: 35 mm diameter: 12 mm |
| Software | PSC Connect |

¹⁾ object temperature > 0°C; whichever is greater

²⁾ at ambient temperature 23 ± 5°C

³⁾ for ambient temperatures <18°C and >28°C; whichever is greater

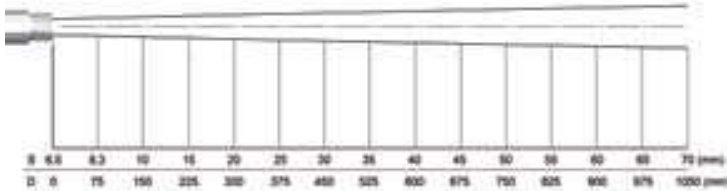
¹⁾ for Vcc (supply voltage) 5-12 VDC/ at Vcc > 12 VDC the max. ambient temperature of the electronics is 65 °C

²⁾ in dependence on supply voltage

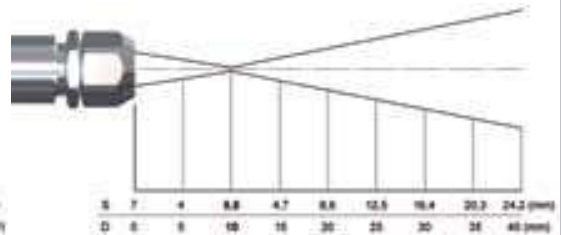
PSC-CMS-2W-LT Series

Optical Specifications

Optics, D:S = 15:1

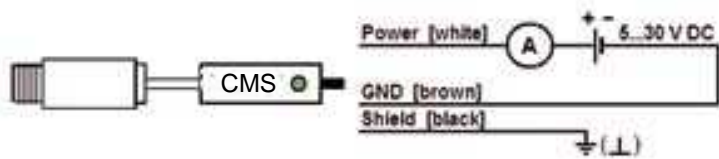


Optics with CF-lens, D:S = 15:1



Dimensions/Interfaces

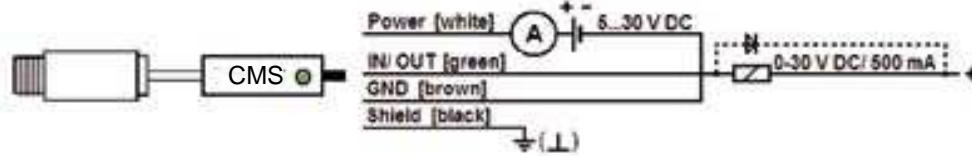
Analog Mode (Two wire connection)



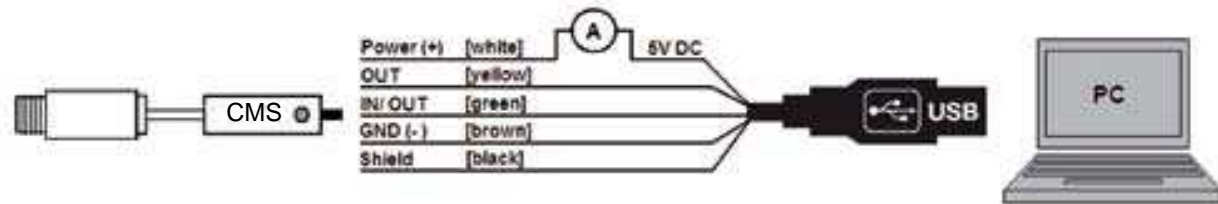
Dimensions PSC-CMS-2W-LT



Connection analog with open collector alarm output

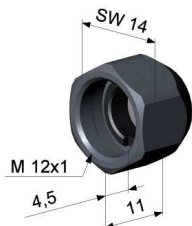


Combined Mode (analog and digital)

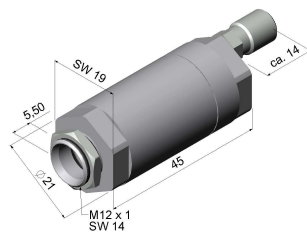


Accessories (examples)

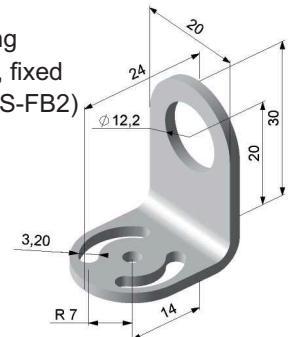
CF-lens
(AC-SSS-PW)



Air purge collar (AC-SSS-AP)

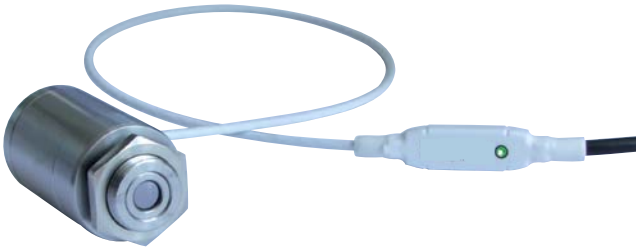


Mounting bracket, fixed
(AC-SSS-FB2)



PSC-CMS-2W-HS-LT15

Infrared thermometer for measurement of smallest temperature differences of 0.025°C



FEATURES

- New benchmark in low noise IR-thermometry
- Suitable for relative measurement of smallest temperature differences of 0.025°C
- Touches the physical limits ensuring low ambient temperature drift
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Complete solid state design without any moving parts
- Assures usability of a new class of ultra low noise level IR thermometers
- Stainless steel housing with compact dimensions

General specifications

| | |
|----------------------|--------------------------------------|
| Environmental rating | IP 65 (NEMA-4) |
| Ambient temperature | -20°C to 75°C ¹⁾ |
| Storage temperature | -40°C to 85°C |
| Relative humidity | 10 - 95%, non condensing |
| Vibration | IEC 68-2-6: 3 G, 11-200 Hz, any axis |
| Shock | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | 200 g |

Electrical specifications

| | |
|----------------|--|
| Output/analog | 4-20 mA |
| Output/alarm | 0-30 V/500 mA (open collector) |
| Output/digital | uni-/bidirectional, 9.6 kBaud, 0/3V digital level, USB (option) |
| Input | Programmable functional input for triggered signal output or peak-hold function |
| Loop impedance | 1000 Ω ²⁾ |
| LED functions | alarm indication, automatic aiming support, self diagnostic, temperature indication (via temp. code) |
| Cable length | 1 m standard, 3.5 m optional (0.5 m between sensing head and electronics) |
| Power supply | 5-30 V DC |

Measurement specifications

| | |
|---|---|
| Temperature range | -20°C to 150°C |
| Spectral range | 8 - 14 μm |
| Optical resolution (90 % energy) | 15:1 |
| CF-Optics (optional) | 0.8 mm @ 10 mm |
| System accuracy | ± 1.0% or ± 1.0°C ^{1), 2), 3)} |
| Repeatability | ± 0.3% or ± 0.3°C ^{1), 2), 3)} |
| Temperature coefficient | ± 0.05 K/K or ± 0.05 % K ⁴⁾ |
| Temperature resolution | 0.025 K ³⁾ (AVG > 0,2 s) |
| Response time | 150 ms (adjustable up to 999 s via optional programming device) |
| Emissivity/Amplification (adjustable via software) | 0.100 - 1.100 |
| Transmissivity (adjustable via software) | 0.100 - 1.100 |
| Signal processing (parameter adjustable only via optional software) | peak hold, valley hold, average; extended hold function with threshold and hysteresis |
| Dimensions of electronics | Length: 35 mm Diameter: 12 mm |
| Software | PSC Compact Connect |

¹⁾ whichever is greater

²⁾ at ambient temperature 23 ± 5°C

³⁾ for temperatures > 20°C

⁴⁾ for ambient temperatures <18°C and >28°C; whichever is greater

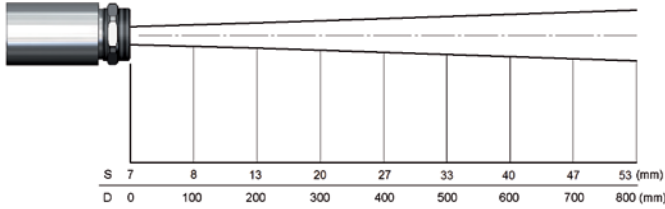
¹⁾ for Vcc (supply voltage) 5-12 VDC/ at Vcc > 12 VDC the max. ambient temperature of the electronics is 65 °C

²⁾ in dependence on supply voltage

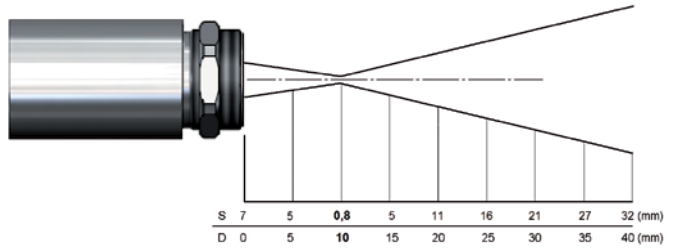
PSC-CMS-2W-HS-LT15

Optical Specifications

Optics, D:S = 15:1

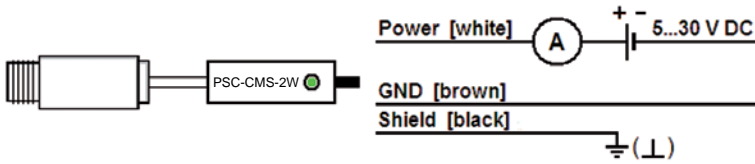


Optics with CF-lens, D:S = 15:1

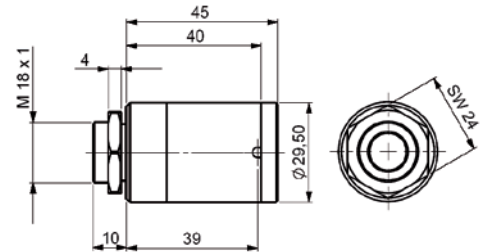


Dimensions/Interfaces

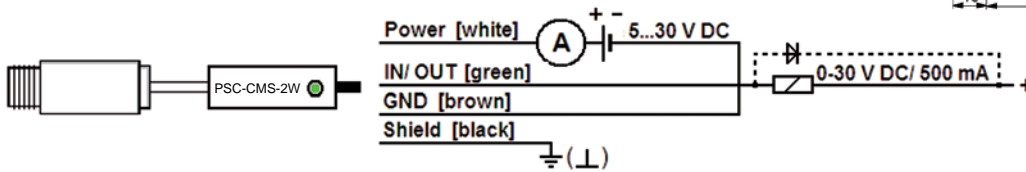
Analog Mode (Two wire connection)



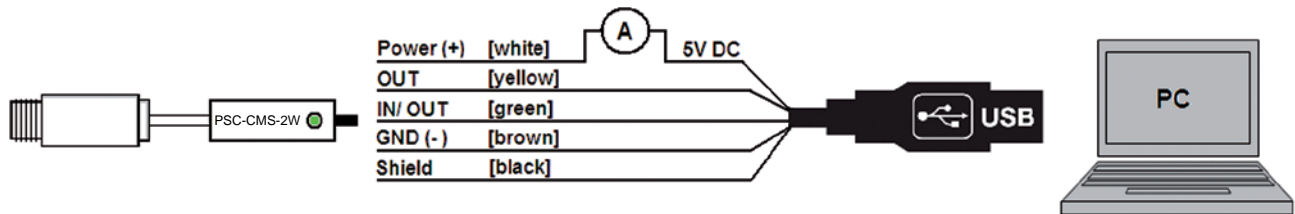
Dimensions PSC-CMS-2W



Connection analog with open collector alarm output

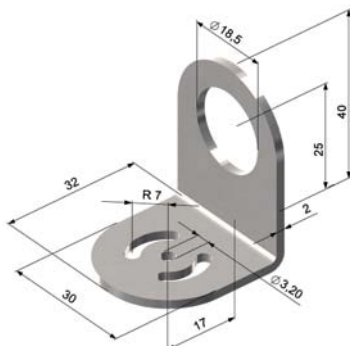


Combined Mode (analog and digital)

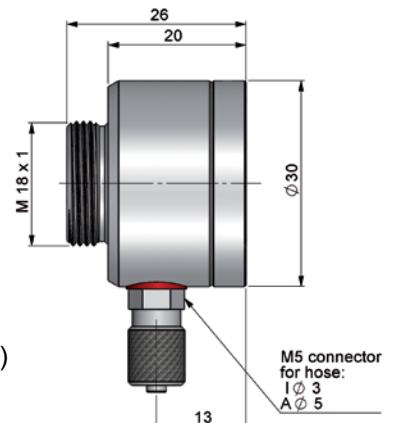


Dimensions/Accessories (examples)

Mounting bracket, adjustable in one axis (AC-SSS-FBMH)



Air purge collar (AC-SSS-APMH)



PSC-CMS-2W-2M Series

Ultra compact two-wire infrared thermometer from 250°C to 1600°C



FEATURES

- Temperature range: 250°C to 1600°C
- Size: M12x1, 28 mm long, stainless steel housing
- Scalable 4-20 mA analog output / additional simultaneous alarm output
- Usable up to 125°C ambient temperature without cooling (sensing head)
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Electronics build in cable
- Short circuit and polarity reversal protection
- Adjustable signal processing
- Optional USB programming interface and software
- Wide power range: 5-30 V DC

General Specifications

| | |
|----------------------|--|
| Environmental rating | IP 65 (NEMA-4) |
| Ambient temperature | -20°C - 125°C (sensing head) -20°C - 75°C ¹⁾ (electronics) |
| Storage temperature | -40°C - 85°C (sensing head) -40°C - 85°C (electronics) |
| Relative humidity | 10 - 95%, non condensing |
| Vibration | IEC 68-2-6: 3 G, 11-200 Hz, any axis |
| Shock | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | 42 g |

Electrical Specifications

| | |
|---------------------|--|
| Output/analog | 4-20 mA |
| Loop resistance | max. 1000 Ω ²⁾ |
| Output/alarm | 0-30 V/500 mA (open collector) |
| Output/digital | uni-/bidirectional, 9.6 kBaud, 0/3V digital level, USB (option) |
| Input | Programmable functional input for triggered signal output or peak-hold function |
| LED functions | alarm indication, automatic aiming support, self diagnostic, temperature indication (via temp. code) |
| Cable length | |
| head - electronics: | 0.5 m (standard), 3 m, 6 m |
| after electronics: | 0.5 m (standard), 3 m |
| Power supply | 5-30 V DC |

Measurement Specifications

| | |
|---|---|
| Temperature range (scalable via software) | 250°C to 800°C (2ML) 385°C to 1600°C (2MH) |
| Spectral range | 1.6 μm |
| Optical resolution (90 % energy) | 40:1 (2ML) 75:1 (2MH) |
| CF-lens (optional) | 0.4 mm @ 11 mm (2ML) 0.2 mm @ 11 mm (2MH) |
| System accuracy | ±(0.3% of reading +2°C) ^{1),2)} |
| Repeatability | ±(0.1% of reading +1°C) ^{1),2)} |
| Temperature coefficient | ± 0.05 K/K oder ± 0.05 % K ³⁾ |
| Temperature resolution | 0.1°C |
| Response time (90%) | 10 ms |
| Emissivity/Gain (adjustable via software) | 0.100 - 1.100 |
| Transmissivity (adjustable via software) | 0.100 - 1.100 |
| Signal processing (parameter adjustable via software) | peak hold, valley hold, average; extended hold function with threshold and hysteresis |
| Dimensions of electronics | Length: 35 mm Diameter: 12 mm |
| Software | PSC Connect |

¹⁾ at ambient temperature 23 ± 5°C, ε = 1, response time 1s

²⁾ object temperature > 450°C

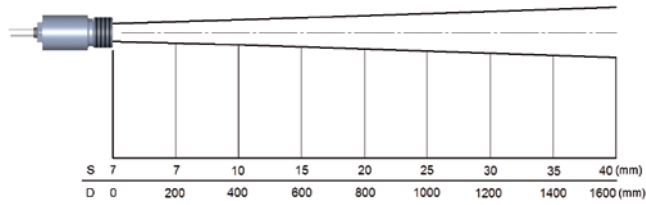
³⁾ for ambient temperatures <18°C and >28°C; whichever is greater

¹⁾ for Vcc (supply voltage) 5-12 VDC/ at Vcc > 12 VDC the max. ambient temperature of the electronics is 65 °C

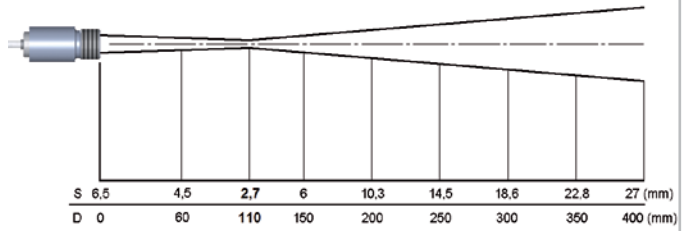
²⁾ in dependence on supply voltage

Optical Specifications

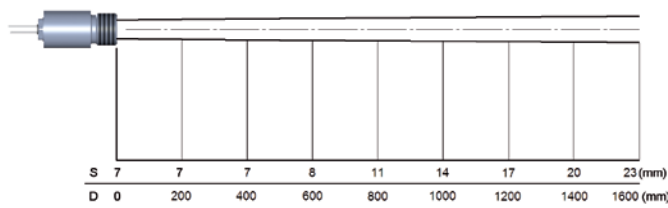
Optics SF, D:S = 40:1



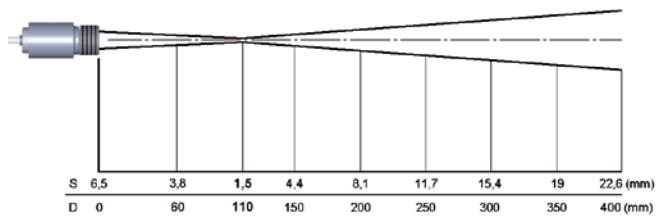
Optics CF, D:S = 40:1



Optics SF, D:S = 75:1

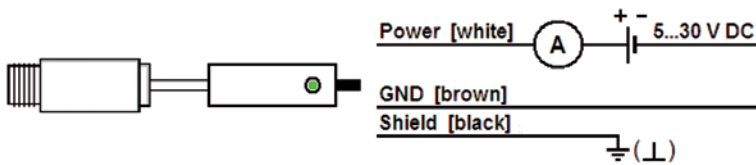


Optics CF, D:S = 75:1

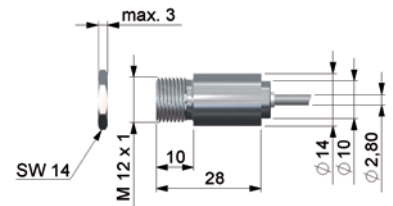


Dimensions/Interfaces

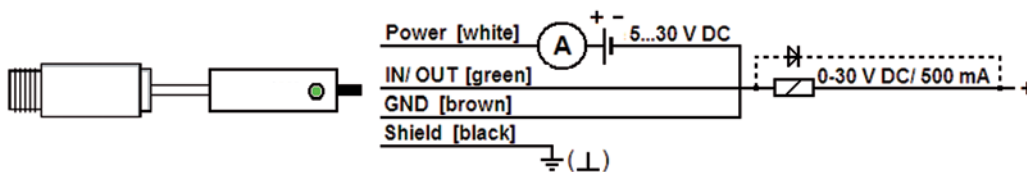
Analog Mode (Two wire connection)



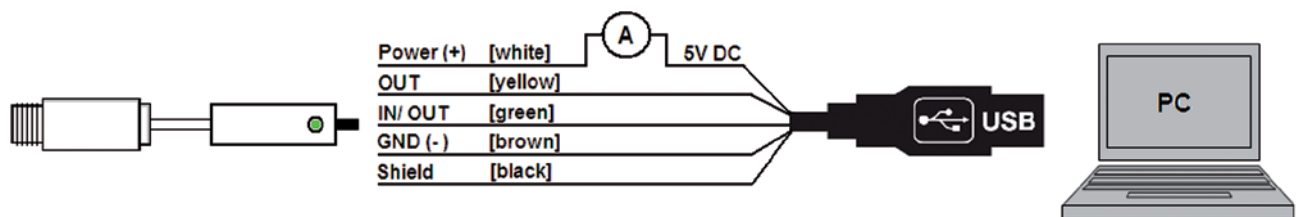
Dimensions PSC-CMS-2W-2M Series



Connection analog with open collector alarm output



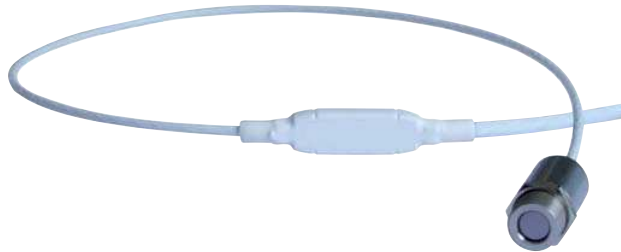
Combined Mode (analog and digital)



Specifications are subject to change without notice.

PSC-CMS-3M Compact Micro Sensor

Low cost infrared thermometer for temperature measurement of metal alloys from 50 - 600 °C



Features

- Compact Infrared Sensor with 2.3 μm spectral response for measurements of metal alloys and ceramic materials
- Digital stainless steel IR sensor: M12x1, 28mm long
- Low temperature (50°C) sensing for low emissivity surfaces
- Green LED alarm indication, aiming support, self diagnostic or temperature code indication
- Scalable analog output: 0-10 V or 0-5 V and additional simultaneous alarm output
- Sensing head ambient rating to 85°C (185°F)
- Optional USB programming interface and software
- Wide power range: 5-30 V DC

| General Specifications | |
|------------------------|---|
| Environmental rating | IP 65 (NEMA-4) |
| Ambient temperature | -20°C to 85°C (sensing head) -20°C to 80°C (electronics) |
| Storage temperature | -40°C to 85°C (sensing head and electronics) |
| Relative humidity | 10 - 95%, non condensing |
| Vibration | IEC 68-2-6: 3 G, 11-200 Hz, any axis |
| Shock | IEC 68-2-27: 50 G, 11 ms, any axis |
| Weight | 42 g |

| Electrical Specifications | |
|---------------------------|---|
| Output/analog | 0-5 V or 0-10 V 1/10/100 mV/°C |
| Output/alarm | 24 V/50 mA (open collector) |
| Output/digital | uni-/bidirectional, 9.6 kBaud, 0/3V digital level, USB optional |
| Input (0-10 V) | Programmable functional input for external emissivity setting/ambient temperature adjustment, triggered signal output or peak-hold function |
| LED-functions | alarm indication, automatic aiming support, self diagnostic, temperature indication (via. temp.code) |
| Cable length | head - electronics: 0.5 m (standard), 3 m after electronics: 0.5 m (standard), 3 m |
| Power supply | 5-30 V DC |
| Current draw | 9 mA |

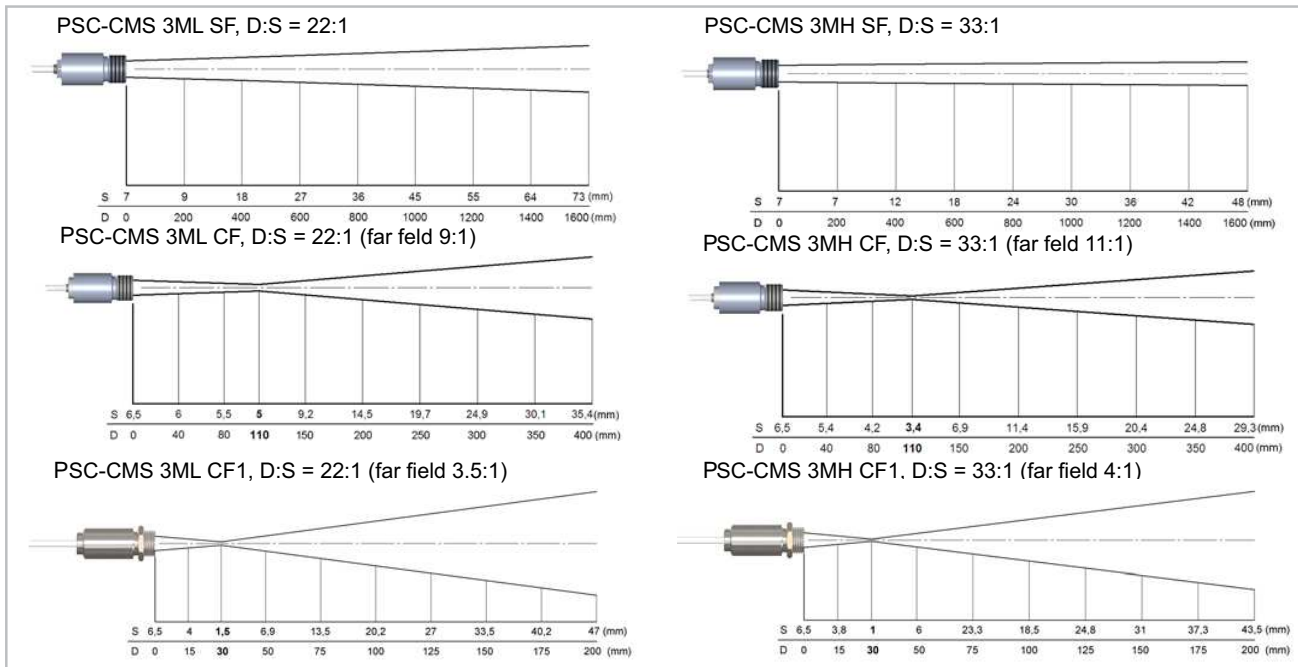
| Measurement Specifications | |
|--|--|
| Temperature range ¹⁾ (scalable via software) | 50°C to 350°C (3ML) 100°C to 600°C (3MH) |
| Spectral range | 2.3 μm |
| Optical resolution (90 % energy) | 22:1 (3ML) 33:1 (3MH) |
| Optics | SF, CF, CF1 |
| System accuracy ²⁾ (at ambient temp. 23 ±5°C) | ± (0.3% of reading + 2°C) |
| Repeatability (at ambient temp. 23 ±5°C) | ± (0.1% of reading + 1°C) |
| Temperature resolution | 0.1 K |
| Response time ³⁾ (90%) | 25 ms - 999 s (adjustable) |
| Emissivity/Gain (adjustable via 0-5 V DC input or software) | 0.100 - 1.100 |
| Transmissivity (adjustable via software) | 0.100 - 1.100 |
| Signal processing (parameter adjustable via software) | peak hold, valley hold, average; extended hold function with threshold and hysteresis |
| Dimensions of electronics | length: 35 mm diameter: 12 mm |
| Software | PSC Connect |

¹⁾ $T_{object} > T_{sensing\ head} + 25^{\circ}C$

²⁾ $\epsilon = 1$, Response time 1 s

³⁾ with dynamic adaptation at low signal levels

Optical Specifications



Interfaces/Dimensions

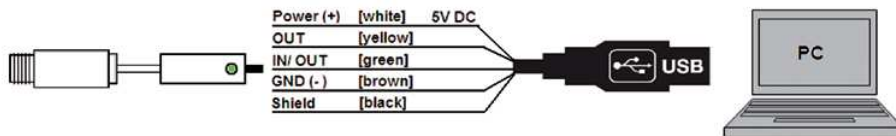
Analog connection with open collector alarm output



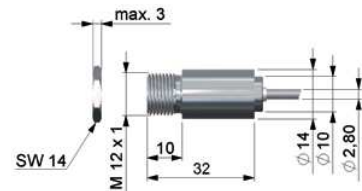
Dimensions PSC-CMS-3M-SF
3M-CF



Digital connection with USB adapter cable



Dimensions PSC-CMS-3M-CF1

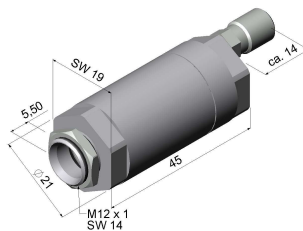


Accessories (examples)

Mounting bolt



Air purge collar (AC-SSS-AP)



Mounting bracket,
fixed
(AC-SSS-TFB)

