

SAC-5P-M12MS/0,3-810/M12FR-3L - Sensor/actuator cable



1416142

<https://www.phoenixcontact.com/us/products/1416142>

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Sensor/actuator cable, 5-position, PUR halogen-free, welding sputter-resistant, orange RAL 2003, Plug straight M12, coding: A, with 3 LEDs, on Socket angled M12, coding: A, with 3 LEDs, cable length: 0.3 m, for robots and drag chains

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Reliable solution for the body shop as cable is welding sputter resistant
- Convenient: increased machine availability thanks to quick and easy diagnostics

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1416142 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Product key | AF1CDA |
| GTIN | 4055626063782 |
| Weight per piece (including packing) | 38 g |
| Weight per piece (excluding packing) | 38 g |
| Country of origin | PL |

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Technical data

Product properties

| | |
|----------------------|------------------------|
| Product type | Sensor/actuator cable |
| Application | Robots and drag chains |
| Number of positions | 5 |
| No. of cable outlets | 1 |
| Shielded | no |
| Coding | A |

Insulation characteristics

| | |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution | 3 |

Material specifications

| | |
|--|---|
| Flammability rating according to UL 94 | HB |
| Seal material | NBR |
| Material of grip body | TPU, hardly inflammable, self-extinguishing |
| Contact material | CuSn |
| Contact surface material | Ni/Au |
| Contact carrier material | TPU GF |
| Material for screw connection | Zinc die-cast, nickel-plated |

Electrical properties

| | |
|-----------------------|----------------------------|
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage U_N | 24 V DC |
| Nominal current I_N | 4 A |

Mechanical properties

Mechanical data

| | |
|-----------------------------|------------|
| Insertion/withdrawal cycles | ≥ 100 |
|-----------------------------|------------|

Signaling

| | |
|------------------------|--------|
| Status display | 3 LEDs |
| Status display present | yes |

Connection data

Conductor connection

| | |
|-------------------|------------------------|
| Tightening torque | 0.4 Nm (M12 connector) |
|-------------------|------------------------|

Connector

Connection 1

| | |
|------|-------------------|
| Type | Plug straight M12 |
|------|-------------------|

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| | |
|---------------------|---|
| Number of positions | 5 |
| Coding type | A |


Connection 2

| | |
|---------------------|-------------------|
| Type | Socket angled M12 |
| Number of positions | 5 |
| Coding type | A |

Cable/line

| | |
|--------------|-------|
| Cable length | 0.3 m |
|--------------|-------|

PUR, halogen-free, highly flexible, welding-sputter resistant, orange [810]

| | |
|---|--|
| Dimensional drawing |  |
| Note | Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments. |
| UL AWM Style | 20549 (80°C/300 V) |
| Number of positions | 5 |
| Shielded | no |
| Cable type | PUR, halogen-free, highly flexible, welding-sputter resistant, orange [810] |
| Conductor structure signal line | 42x 0.10 mm |
| AWG signal line | 22 |
| Conductor cross-section | 5x 0.34 mm ² |
| Wire diameter incl. insulation | 1.55 mm ±0.05 mm (Signal line) |
| External cable diameter | 6.90 mm ±0.1 mm |
| Outer sheath, material | PUR |
| External sheath, color | orange RAL 2003 |
| Conductor material | Bare Cu litz wires |
| Material wire insulation | PP |
| Single wire, color | brown, white, blue, black, green-yellow |
| Overall twist | 5 wires around filler to the core |
| Max. conductor resistance | approx. 57 Ω/km |
| Insulation resistance | ≥ 20 MΩ*km |
| Nominal voltage, cable | 300 V (Peak value, not for high-power applications) |
| Test voltage Core/Core | 3000 V (Spark test) |
| Minimum bending radius, fixed installation | 5 x D |
| Minimum bending radius, flexible installation | 10 x D |
| Smallest bending radius, fixed installation | 35 mm |

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| | |
|---|---|
| Smallest bending radius, movable installation | 69 mm |
| Dynamic load capacity (bending) | Max. bending cycles: 5000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s ² , Ambient temperature: ≤ 60 °C |
| Halogen-free | in accordance with DIN VDE 0472 part 815 |
| Flame resistance | in acc. with UL FT-2 |
| Other resistance | hydrolysis and microbe resistant |
| Special properties | Sheath resistant to welding beads, can be recycled, matt, without adhesion, wear-resistant, flame resistant and self-extinguishing |
| | Free from silicone and cadmium |
| | Free of substances which would hinder coating with paint or varnish |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -25 °C ... 80 °C (Cable, flexible installation) |
| | ≤ 60 °C (cable, drag chain applications) |

Environmental and real-life conditions

Ambient conditions

| | |
|---|----------------------------------|
| Degree of protection | IP65 |
| | IP67 |
| | IP68 |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket) |

Standards and regulations

| | |
|--------------------------|-----------------|
| Standard designation | M12 connector |
| Standards/specifications | IEC 61076-2-101 |

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Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, angled

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Schematic diagram



Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram



Pin assignment M12 socket, 5-pos., A-coded, socket side view

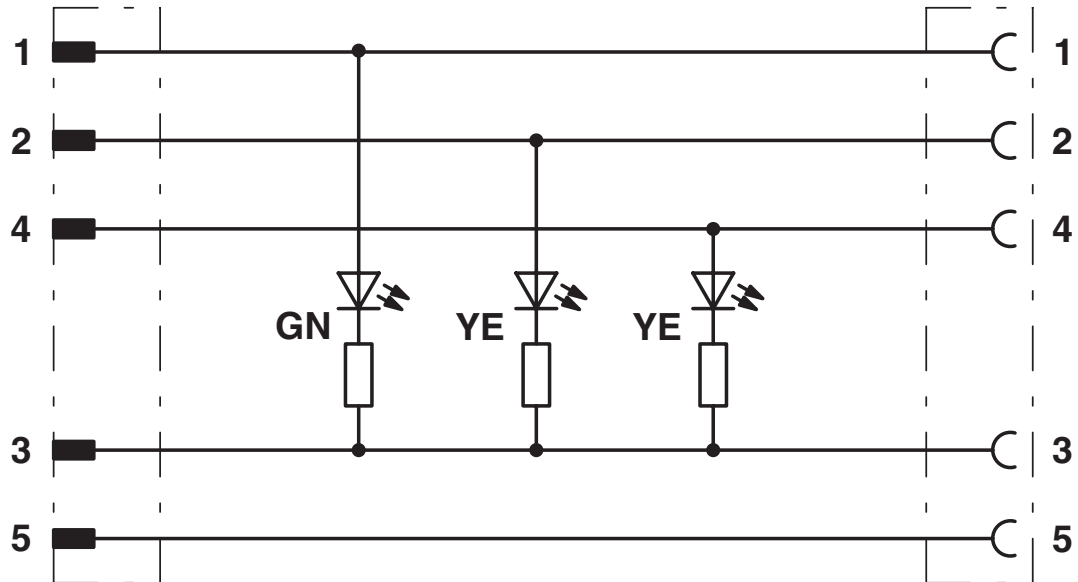
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Circuit diagram



Contact assignment of M12 plugs / sockets with 3 LEDs

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Approvals

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|  UL Listed Approval ID: FILE E 221474 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 24 V | 4 A | - | - |

|  cUL Listed Approval ID: FILE E 221474 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 24 V | 4 A | - | - |

|  EAC-RoHS Approval ID: RU D-DE.HB35.B.00387 | |
|--|--|
|--|--|

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27060311 |
| ECLASS-15.0 | 27060311 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001855 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 0.376 kg CO2e |
|---------|---------------|

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