

# SAC-3P-20,0-680/M8FR FDP - Sensor/actuator cable



1096046

<https://www.phoenixcontact.com/us/products/1096046>

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Sensor/actuator cable, 3-position, PVC, gray, shielded, free cable end, on Socket angled M8, coding: A, cable length: 20 m, Foil shielding plus drain wire

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1096046                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF13                           |
| Product key                          | AF1IEE                         |
| GTIN                                 | 4055626929972                  |
| Weight per piece (including packing) | 22.22 g                        |
| Weight per piece (excluding packing) | 22.22 g                        |
| Country of origin                    | US                             |

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## Technical data

### Product properties

|                      |                       |
|----------------------|-----------------------|
| Product type         | Sensor/actuator cable |
| Application          | Standard, U.S. cables |
| Number of positions  | 3                     |
| No. of cable outlets | 1                     |
| Shielded             | yes                   |
| 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 $U_N$ | 48 V AC                    |
|                       | 60 V DC                    |
| Nominal current $I_N$ | 4 A                        |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Connection data

#### Conductor connection

|                   |                        |
|-------------------|------------------------|
| Tightening torque | 0.2 Nm (M8 connectors) |
|-------------------|------------------------|

### Connector

#### Connection 1

# SAC-3P-20,0-680/M8FR FDP - Sensor/actuator cable



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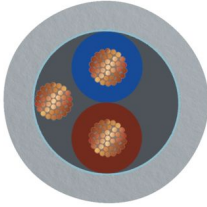
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|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

## Connection 2

|                     |                  |
|---------------------|------------------|
| Type                | Socket angled M8 |
| Number of positions | 3                |
| Coding type         | A                |

## Cable/line

|                                               |                                                                                    |
|-----------------------------------------------|------------------------------------------------------------------------------------|
| Cable length                                  | 20 m                                                                               |
| Dimensional drawing                           |  |
| Cable weight                                  | 22.17 kg/km                                                                        |
| UL AWM Style                                  | 2517 (105 °C / 300 V)                                                              |
| Number of positions                           | 2                                                                                  |
| Shielded                                      | yes                                                                                |
| AWG signal line                               | 24                                                                                 |
| Wire diameter incl. insulation                | 1.12 mm ±0.03 mm                                                                   |
| External cable diameter                       | 3.99 mm ±0.2 mm                                                                    |
| Outer sheath, material                        | PVC                                                                                |
| External sheath, color                        | gray                                                                               |
| Conductor material                            | Tin-plated Cu litz wires                                                           |
| Material wire insulation                      | PVC (Signal line)                                                                  |
| Single wire, color                            | brown, blue                                                                        |
| Type of pair shielding                        | Plastic-coated aluminum foil, aluminum side inside                                 |
| Overall twist                                 | Conductors, fillers, and drain wire are twisted with left-hand lay                 |
| Max. conductor resistance                     | max. 80.2 Ω/km (20 °C)                                                             |
| Insulation resistance                         | ≥ (550 M Ohms/m @ 500V)                                                            |
| Nominal voltage, cable                        | 300 V                                                                              |
| Minimum bending radius, flexible installation | 8 x D                                                                              |
| Smallest bending radius, movable installation | 32 mm                                                                              |
| Flame resistance                              | FT4                                                                                |
| Other resistance                              | UV resistant                                                                       |
| Ambient temperature (operation)               | -30 °C ... 105 °C (cable, fixed installation)                                      |

## Environmental and real-life conditions

### Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|                      | IP67 |

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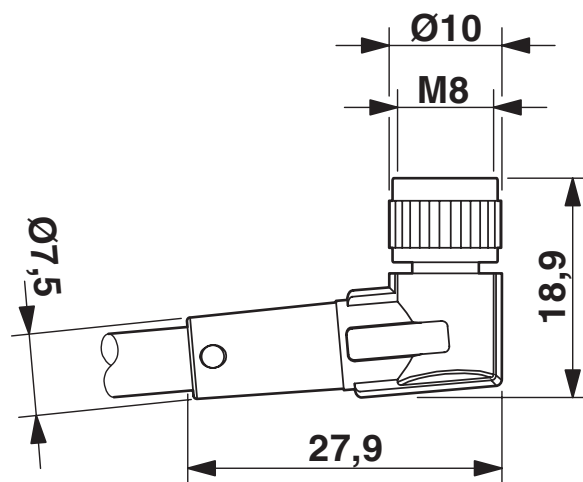
|                                                                   |                                                |
|-------------------------------------------------------------------|------------------------------------------------|
|                                                                   | IP68                                           |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket)               |
| Ambient temperature (operation) (Cable, fixed installation)       | -40 °C ... 80 °C (cable, fixed installation)   |
| Ambient temperature (operation) (Cable, flexible installation)    | -5 °C ... 80 °C (Cable, flexible installation) |

## Standards and regulations

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M8 connector    |
| Standards/specifications | IEC 61076-2-104 |

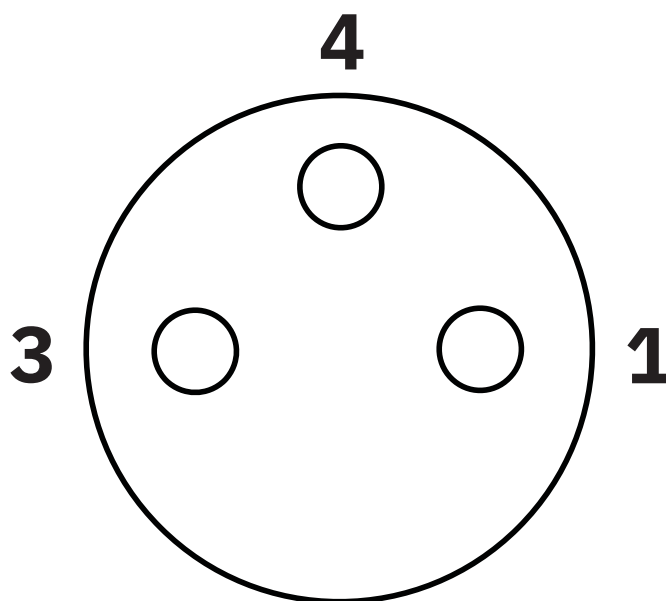
## Drawings

Dimensional drawing



Socket M8 x 1, angled

Schematic diagram



Pin assignment M8 socket, 3-pos., view female side

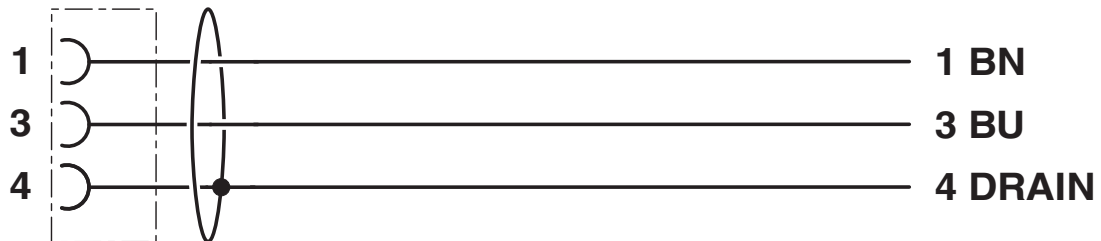
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Circuit diagram



Contact assignment of M8 plugs/sockets

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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 31251501 |
|-------------|----------|

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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% |
|-------------------------------------|----------------------------|

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