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Bus system cable - SAC-5PY-F/2X10,0-920

1436149

https://www.phoenixcontact.com/gb/products/1436149

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Bus system cable, CANopen®, DeviceNet™, 5-position, PUR halogen-free, red lilac RAL 4001, shielded, Socket straight M12 SPEEDCON, coding: A, on free cable end and free cable end, cable length: 10 m, Connector unshielded, Shield connected to pin 1

Commercial Data

Item number	1436149
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1GAD
Product Key	BF1GAD
Catalog Page	Page 434 (C-2-2019)
GTIN	4046356432399
Weight per Piece (including packing)	1,224.8 g
Weight per Piece (excluding packing)	1,143.27 g
Customs tariff number	85444290
Country of origin	PL

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Technical Data

Product properties

Product type	Data cable preassembled
Number of positions	5
Application	Standard
Shielded	no
Coding	A - standard

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Interfaces

Bus system	CANopen®/DeviceNet™
Signal type/category	CANopen®
	DeviceNet™
	CANopen®
	DeviceNet™

LED signaling

Status display	No
Status display present	No

Electrical properties

Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Nominal voltage U_N	48 V AC
	60 V DC
Nominal current I_N	4 A
Transmission medium	Copper

Material specifications

Color Handle area	black
Flammability rating according to UL 94	HB
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Cable gland material	Zinc die-cast, nickel-plated

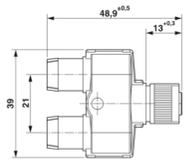
Dimensions

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Dimensional drawing	
Center distance	21 mm

Connection data

Pin assignment

Contact | Color (signal designation) | Contact (optional)	1 (Distributor) = SR (shield)
	2 (Distributor) = RD (V+)
	3 (Distributor) = BK (V-)
	4 (Distributor) = WH (CAN_H)
	5 (Distributor) = BU (CAN_L)

Connector

Header 1

Head design	Socket
Head cable outlet	straight
Head thread type	M12
Head locking type	SPEEDCON
Coding	A

Head 2

Head design	free cable end

Cable / line

Cable length	10 m
Cable weight	90 kg/km
UL AWM Style	21198 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	CANopen®/DeviceNet™, PUR, violet [920]
Conductor structure signal line	19x 0.13 mm
AWG signal line	24
Conductor cross section	2x 0.25 mm² (Data cable)
	2x 0.34 mm² (Power supply)
	1x 0.34 mm² (Drain wire)
Wire diameter incl. insulation	1.95 mm ±0.05 mm (Data cable)
	1.4 mm ±0.05 mm (Power supply)
External cable diameter	6.7 mm ±0.3 mm
Outer sheath, material	PUR
External sheath, color	red lilac RAL 4001

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Conductor material	Tin-plated Cu litz wires
Material wire insulation	Foamed PE (Data cable)
	PE (Power supply)
Single wire, color	red-black, blue-white
Twisted pairs	2 cores to the pair
Type of pair shielding	Plastic-coated aluminum foil, aluminum side outside
Overall twist	2 pairs around a drain wire in the center to the core
Optical shield covering	80 %
Insulation resistance	≥ 5 GΩ*km (Data cable)
	≥ 5 GΩ*km (Power supply)
Loop resistance	≤ 181.80 Ω/km (Data cable)
	≤ 114.80 Ω/km (Power supply)
Wave impedance	120 Ω ±10 % (with 1 MHz)
Cable capacity	nom. 40 nF/km (Data cable)
Nominal voltage, cable	≤ 300 V (Peak value, not for high-power applications)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Max. bending cycles	5000000
Shield attenuation	≤ 22.9 dB/km (with 1 MHz)
	≤ 16.4 dB/km (At 500 kHz)
	≤ 9.5 dB/km (At 125 kHz)
Halogen-free	in accordance with DIN VDE 0472 part 815
	according to IEC 60754-1
Flame resistance	IEC 60332-1-2
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
Other resistance	Low adhesion
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-30 °C ... 70 °C (Cable, flexible installation)
	-20 °C ... 60 °C (for installation)
	-20 °C ... 60 °C (cable, drag chain applications)

Cable structure

Cable type	CANopen®/DeviceNet™, PUR, violet
Short symbol	920
Signal type/category	CANopen®
	DeviceNet™
External cable diameter	6.70 mm
Outer sheath, material	PUR
External sheath, color	red lilac RAL 4001
Conductor material	Tin-plated Cu litz wires
Conductor structure signal line	19x 0.12 mm
AWG signal line	24

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Conductor structure, voltage supply	19x 0.15 mm
AWG power supply	22
Material wire insulation	PE (Power supply)
	Foamed PE (Signal line)
Wire diameter incl. insulation	2.05 mm ±0.1 mm (Signal line)
	1.4 mm ±0.05 mm (Power supply)
Single wire, color	red-black, blue-white
Twisted pairs	2 cores to the pair
Type of pair shielding	Aluminum-lined polyester foil
Overall twist	2 pairs around a drain wire in the center to the core
Shielding	Tinned copper braided shield
Optical shield covering	70 %

Electrical properties

Nominal voltage, cable	30 V (Signal line)
	300 V (Power supply)
Test voltage, cable	1500 V (Signal line)
	2000 V (Power supply)
Conductor resistance	≤ 78.4 Ω/km (Signal line)
	≥ 51.6 Ω/km (Power supply)
Cable insulation resistance	≥ 5 GΩ*km (Signal line)
	≥ 100 MΩ*km (Power supply)
Working capacitance	39.3 pF (Signal line, Core-Core)
	78.7 pF (Signal line, Core-Shield)

Mechanical properties

Smallest bending radius, fixed installation	67 mm
Smallest bending radius, movable installation	67 mm
Number of bending cycles	5000000
Bending radius	67 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	7 m/s²

Bending cycles

Smallest bending radius, fixed installation	67 mm
Smallest bending radius, movable installation	67 mm
Number of bending cycles	5000000
Bending radius	67 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	7 m/s²

Ambient conditions

Ambient temperature (operation)	-20 °C ... 75 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

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Ambient conditions

Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)
	-40 °C ... 80 °C (cable, fixed installation)
	-20 °C ... 75 °C (Cable, flexible installation)

Standards and regulations

Standards/specifications	IEC 61076-2-101

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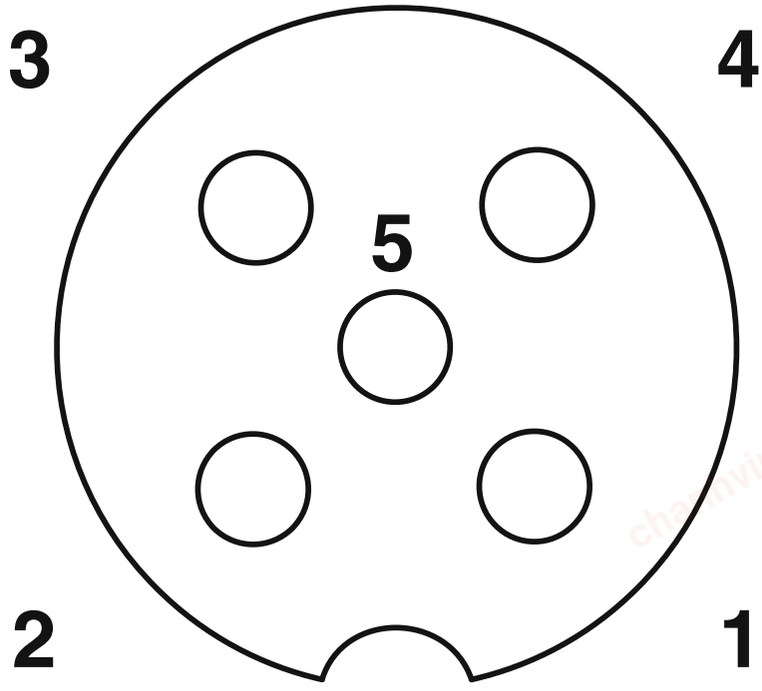
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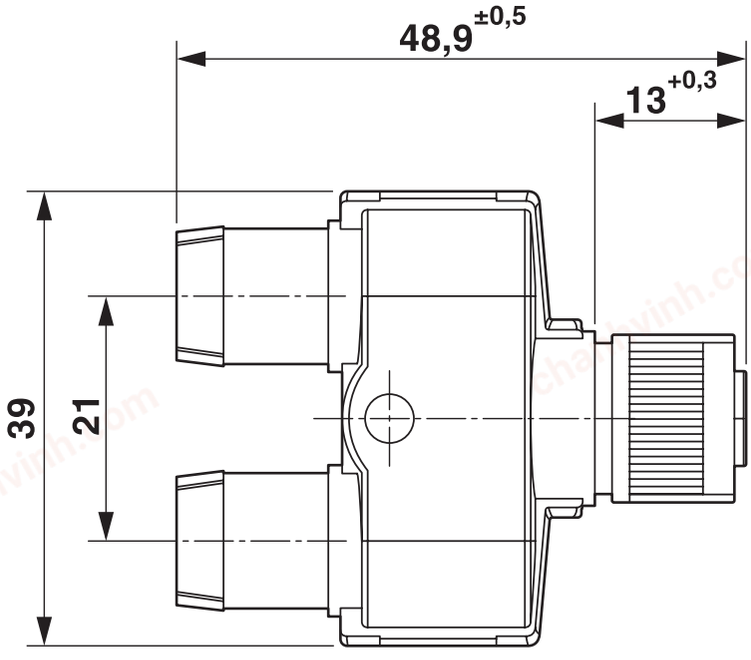
Drawings

Schematic diagram



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

Dimensional drawing



M12-SPEEDCON socket, Y-distributor

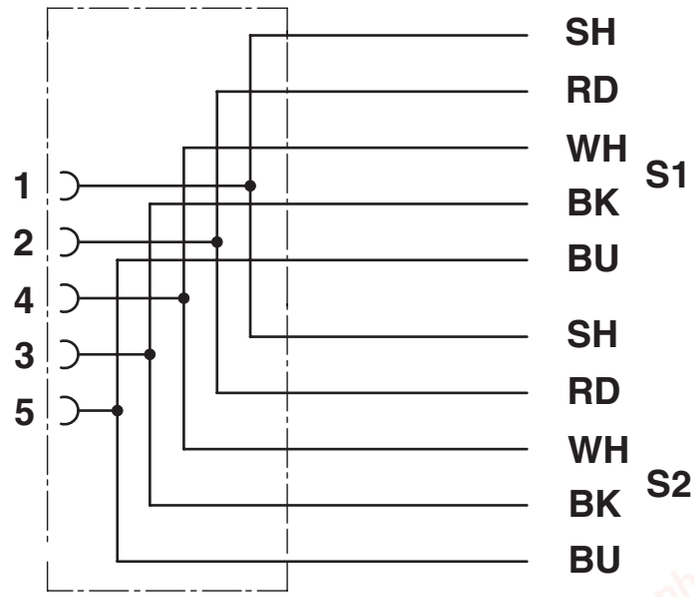
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Circuit diagram



Contact assignment of the M12 socket

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Approvals

EAC
Approval ID: RU C-DE.BL08.B.00286

UL Listed
Approval ID: FILE E 221474

	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	125 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
	125 V	4 A	-	-

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

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27060308
ECLASS-10.0.1	27060308
ECLASS-11.0	27060307

ETIM

ETIM 8.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

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Environmental Product Compliance

REACh SVHC	Lead 7439-92-1

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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Accessories

Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

https://www.phoenixcontact.com/gb/products/1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

Torque screwdriver

Torque screwdriver - TSD-M 1,2NM - 1212224

https://www.phoenixcontact.com/gb/products/1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0. 3 - 1.2 Nm

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Bus system cable - SAC-5PY-F/2X10,0-920

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Adapter insert

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600

https://www.phoenixcontact.com/gb/products/1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

Tool

Tool - SAC BIT M12-D15 - 1208432

https://www.phoenixcontact.com/gb/products/1208432



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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Screw plug

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

https://www.phoenixcontact.com/gb/products/1430899

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



Locking clip

Locking clip - SAC-M12-EXCLIP-F - 1558991

https://www.phoenixcontact.com/gb/products/1558991

Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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Bus system cable - SAC-5PY-F/2X10,0-920

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Data connector

Data connector - SACC-M12FS-5PL SH DN - 1424672

https://www.phoenixcontact.com/gb/products/1424672



Data connector, CANopen®, DeviceNet™, 5-position, shielded, Socket straight M12, Coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Data connector

Data connector - SACC-M12MS-5PL SH DN - 1424670

https://www.phoenixcontact.com/gb/products/1424670



Data connector, CANopen®, DeviceNet™, 5-position, shielded, Plug straight M12, Coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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Bus system cable - SAC-5PY-F/2X10,0-920

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Data connector

Data connector - SACC-M12FR-5PL SH DN - 1424673

https://www.phoenixcontact.com/gb/products/1424673



Data connector, CANopen®, DeviceNet™, 5-position, shielded, Socket angled M12, Coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Data connector

Data connector - SACC-M12MR-5PL SH DN - 1424671

https://www.phoenixcontact.com/gb/products/1424671



Data connector, CANopen®, DeviceNet™, 5-position, shielded, Plug angled M12, Coding: A, Push-lock spring connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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Bus system cable - SAC-5PY-F/2X10,0-920

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Data connector

Data connector - SACC-M12FS-5QO SH DN - 1422760

https://www.phoenixcontact.com/gb/products/1422760



Data connector, CANopen®, DeviceNet™, 5-position, halogen-free, shielded, Socket straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Data connector

Data connector - SACC-M12M12FS-8QO SH ETH - 1422759

https://www.phoenixcontact.com/gb/products/1422759



Data connector, CANopen®, DeviceNet™, 5-position, halogen-free, shielded, Plug straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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H distributor

H distributor - SAC-5PH-M-F/2XF SH1 SCO - 1417414

https://www.phoenixcontact.com/gb/products/1417414



H distributor, 5-position, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Thread M12 not rotatable, Parallel distributor

T distributor

T distributor - SAC-5P-M12T/2XM12 VP - 1541186

https://www.phoenixcontact.com/gb/products/1541186



T distributor, 5-position, unshielded, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Parallel distributor

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T distributor

T distributor - SAC-5PT-F/F-M VP - 1424712

https://www.phoenixcontact.com/gb/products/1424712



T distributor, CANopen®, DeviceNet™, 5-position, unshielded, Socket straight M12, coding: A, on Socket straight M12, coding: A and Plug straight M12, coding: A, Parallel distributor

Termination resistor

Termination resistor - SAC-5P-M12MS CAN TR - 1507816

https://www.phoenixcontact.com/gb/products/1507816



Terminating resistor CANopen®/DeviceNet™ M12

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