

# Bus system cable - NBC-MS/ 3,0-93K/R4AQ SCO - 1420517

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Assembled Sercos III cable, shielded, star quad, 22 AWG stranded (7-wire), RAL 3020 (traffic red), M12 connector, SPEEDCON, 4-pos. to RJ45 connector/IP20, length: 3 m



## **Key Commercial Data**

Packing unit	1 pc
Minimum order quantity	50 pc
GTIN	4 055626 225296
GTIN	4055626225296

## Technical data

## **Dimensions**

Length of cable	3 m
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#### Ambient conditions

Ambient temperature (operation)	-10 °C 60 °C (cable, fixed installation)
	-5 °C 50 °C (cable, flexible installation)

### General data

Rated voltage	48 V AC
	60 V DC
Number of positions	4
Alternative short product description	Sercos III cable

#### Characteristics head 1

Head type	Plug straight M12 SPEEDCON
No. of positions (pin connector pattern)	4

## Cable

Cable type	Sercos III
Cable type (abbreviation)	93K



# Bus system cable - NBC-MS/ 3,0-93K/R4AQ SCO - 1420517

## Technical data

## Cable

UL AWM style         21694 (60°C / 600 V)           Signal type/category         Seroos CATS (IEC 11801), 100 Mbps           Cable structure         14x4xMC22/7; SF/TQ           Conductor cross section         4x 0.34 mm²           AWG signal line         22           Conductor structure signal line         7x 0.25 mm           Core diameter including insulation         approx. 1.55 mm           Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foil           Overall twist         Star quad           Shielding         Tinned copper brailed shield           Shielding         Tinned copper brailed shield           Stetral sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material conductor insulation         PVC           Material conductor insulation         P           Conductor resistance         120 Okm           Vave impedance	Cable	
Cable structure         1x4xAWG227; SF/TQ           Conductor cross section         4x 0.34 mm²           AWG signal line         22           Conductor structure signal line         7x 0.25 mm           Core diameter including insulation         approx. 1.55 mm           Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foll           Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GD*km           Conductor resistance         ≥ 120 O/km           Vave impedance         ± 100 0 ± 15 0 (at	UL AWM style	21694 (60°C / 600 V)
Conductor cross section         4x 0.34 mm²           AWG signal line         22           Conductor structure signal line         7x 0.25 mm           Core diameter including insulation         approx. 1.55 mm           Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foil           Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material, inner sheath         PVC           Material, inner sheath         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 120 Ω/km           Wave impedance         100 Ω±15 Ω (at 100 MHz)           Signal runtime         <	Signal type/category	Sercos CAT5 (IEC 11801), 100 Mbps
AWG signal line         22           Conductor structure signal line         7x 0.25 mm           Core diameter including insulation         approx 1.55 mm           Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foil           Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 120 Ω/km           Wave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Conductor resistance         ≥ 20.00 mC/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Shield         200	Cable structure	1x4xAWG22/7; SF/TQ
Conductor structure signal line         7x 0.25 mm           Core diameter including insulation         approx. 1.55 mm           Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foil           Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 15 GΩ/km           Conductor resistance         ≥ 100 Ω/km           Wave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≥ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Shield         2000 V (50 Hz., 1 min.)           Test vol	Conductor cross section	4x 0.34 mm²
Core diameter including insulation         approx. 1.55 mm           Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foll           Overall twist         Star quad           Shielding         Tinned copper brailed shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Gable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         > 0.5 GΩ*km           Wave impedance         100 Ω±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resist	AWG signal line	22
Wire colors         White, yellow, blue, orange           Type of pair shielding         Aluminum-lined polyester foil           Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≥ 120 Ω/km           Wave impedance         100 Ω±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≥ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance	Conductor structure signal line	7x 0.25 mm
Type of pair shielding         Aluminum-lined polyester foil           Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ± 0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Vave impedance         ± 120 Ω/km           Wave impedance         ± 120 Ω/km           Wave impedance         ± 0.00 mΩ/m (at 10 Hz)           Signal runtime         5.3 ns/m           Coupling resistance         ± 20.00 mΩ/m (at 10 Hz)           Voitage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         4	Core diameter including insulation	approx. 1.55 mm
Overall twist         Star quad           Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixex di installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Vave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to al limited extent           Other resistance         UV resistant According to UL 1581, Section 1200	Wire colors	White, yellow, blue, orange
Shielding         Tinned copper braided shield           External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixebibe installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Vave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flare resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Quity resistant According to UL 1581, Section 1200           Ambient temperature (operation)         40 °C 70 °C (cable, fixed	Type of pair shielding	Aluminum-lined polyester foil
External sheath, color         signal red RAL 3020           Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixed installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 158	Overall twist	Star quad
Outer sheath thickness         approx. 0.9 mm           External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, fixex di installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         2 .5 GΩ*km           Conductor resistance         \$ 120 Ω/km           Wave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         \$ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1581, Section 1200           Ambient temperature (operation)         -40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)	Shielding	Tinned copper braided shield
External cable diameter D         6.5 mm ±0.2 mm           Minimum bending radius, fixed installation         3 x D           Minimum bending radius, flexible installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1686 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1581, Section 1200           Ambient temperature (operation)         -40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)         -40 °C 70 °C (cable, flexible installation)	External sheath, color	signal red RAL 3020
Minimum bending radius, fixed installation         3 x D           Minimum bending radius, flexible installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1581, Section 1200           Ambient temperature (operation)         40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)         40 °C 70 °C (cable, flexible installation)	Outer sheath thickness	approx. 0.9 mm
Minimum bending radius, flexible installation         7 x D           Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω ± 15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1581, Section 1200           Ambient temperature (operation)         40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)         40 °C 70 °C (cable, flexible installation)	External cable diameter D	6.5 mm ±0.2 mm
Cable weight         68 kg/km           Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω ± 15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1581, Section 1200           Ambient temperature (operation)         40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)         40 °C 70 °C (cable, fixed installation)	Minimum bending radius, fixed installation	3 x D
Outer sheath, material         PVC           Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω ±15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant According to UL 1581, Section 1200           Ambient temperature (operation)         40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)         -20 °C 60 °C	Minimum bending radius, flexible installation	7 x D
Material, inner sheath         PVC           Material conductor insulation         PE           Conductor material         Tin-plated Cu litz wires           Insulation resistance         ≥ 0.5 GΩ*km           Conductor resistance         ≤ 120 Ω/km           Wave impedance         100 Ω ± 15 Ω (at 100 MHz)           Signal runtime         5.3 ns/m           Coupling resistance         ≤ 20.00 mΩ/m (at 10 Hz)           Nominal voltage, cable         600 V           Test voltage Core/Core         2000 V (50 Hz, 1 min.)           Test voltage Core/Shield         2000 V (50 Hz, 1 min.)           Flame resistance         According to UL 1685 (CSA FT 4)           Resistance to oil         Resistant to oil to a limited extent           Other resistance         UV resistant According to UL 1581, Section 1200           Ambient temperature (operation)         40 °C 70 °C (cable, fixed installation)           Ambient temperature (installation)         -20 °C 60 °C	Cable weight	68 kg/km
Material conductor insulationPEConductor materialTin-plated Cu litz wiresInsulation resistance≥ 0.5 GΩ*kmConductor resistance≤ 120 Ω/kmWave impedance $100 Ω ± 15 Ω (at 100 MHz)$ Signal runtime $5.3 ns/m$ Coupling resistance≤ 20.00 mΩ/m (at 10 Hz)Nominal voltage, cable $600 V$ Test voltage Core/Core $2000 V (50 Hz, 1 min.)$ Test voltage Core/Shield $2000 V (50 Hz, 1 min.)$ Flame resistanceAccording to UL 1685 (CSA FT 4)Resistance to oilResistant to oil to a limited extentOther resistanceUV resistant According to UL 1581, Section 1200Ambient temperature (operation) $40 ° C 70 ° C$ (cable, fixed installation)Ambient temperature (installation) $+20 ° C 60 ° C$	Outer sheath, material	PVC
Conductor material       Tin-plated Cu litz wires         Insulation resistance       ≥ 0.5 GΩ*km         Conductor resistance       ≤ 120 Ω/km         Wave impedance       100 Ω ±15 Ω (at 100 MHz)         Signal runtime       5.3 ns/m         Coupling resistance       ≤ 20.00 mΩ/m (at 10 Hz)         Nominal voltage, cable       600 V         Test voltage Core/Core       2000 V (50 Hz, 1 min.)         Test voltage Core/Shield       2000 V (50 Hz, 1 min.)         Flame resistance       According to UL 1685 (CSA FT 4)         Resistance to oil       Resistant to oil to a limited extent         Other resistance       UV resistant According to UL 1581, Section 1200         Ambient temperature (operation)       -40 °C 70 °C (cable, fixed installation)         Ambient temperature (installation)       -20 °C 60 °C	Material, inner sheath	PVC
Insulation resistance       ≥ 0.5 GΩ*km         Conductor resistance       ≤ 120 Ω/km         Wave impedance $100 Ω ± 15 Ω (at 100 MHz)$ Signal runtime $5.3 \text{ ns/m}$ Coupling resistance       ≤ 20.00 mΩ/m (at 10 Hz)         Nominal voltage, cable $600 V$ Test voltage Core/Core $2000 V (50 Hz, 1 min.)$ Test voltage Core/Shield $2000 V (50 Hz, 1 min.)$ Flame resistance       According to UL 1685 (CSA FT 4)         Resistance to oil       Resistant to oil to a limited extent         Other resistance       UV resistant According to UL 1581, Section 1200         Ambient temperature (operation)       -40 °C 70 °C (cable, fixed installation)         Ambient temperature (installation)       -20 °C 60 °C	Material conductor insulation	PE
Conductor resistance≤ 120 Ω/kmWave impedance $100 Ω ±15 Ω (at 100 MHz)$ Signal runtime $5.3 \text{ ns/m}$ Coupling resistance≤ $20.00 \text{ m}Ω/m (at 10 Hz)$ Nominal voltage, cable $600 \text{ V}$ Test voltage Core/Core $2000 \text{ V } (50 \text{ Hz}, 1 \text{ min.})$ Test voltage Core/Shield $2000 \text{ V } (50 \text{ Hz}, 1 \text{ min.})$ Flame resistanceAccording to UL 1685 (CSA FT 4)Resistance to oilResistant to oil to a limited extentOther resistanceUV resistant According to UL 1581, Section 1200Ambient temperature (operation) $-40 \text{ °C } 70 \text{ °C } (cable, fixed installation)$ Ambient temperature (installation) $-20 \text{ °C } 60 \text{ °C}$	Conductor material	Tin-plated Cu litz wires
Wave impedance $100 Ω ±15 Ω (at 100 MHz)$ Signal runtime $5.3 \text{ ns/m}$ Coupling resistance $≤ 20.00 \text{ m}Ω/\text{m} (at 10 \text{ Hz})$ Nominal voltage, cable $600 \text{ V}$ Test voltage Core/Core $2000 \text{ V} (50 \text{ Hz}, 1 \text{ min.})$ Test voltage Core/Shield $2000 \text{ V} (50 \text{ Hz}, 1 \text{ min.})$ Flame resistanceAccording to UL 1685 (CSA FT 4)Resistance to oilResistant to oil to a limited extentOther resistanceUV resistant According to UL 1581, Section 1200Ambient temperature (operation) $-40 \degree \text{C} \dots 70 \degree \text{C}$ (cable, fixed installation)Ambient temperature (installation) $-20 \degree \text{C} \dots 60 \degree \text{C}$	Insulation resistance	≥ 0.5 GΩ*km
Signal runtime       5.3 ns/m         Coupling resistance       ≤ 20.00 mΩ/m (at 10 Hz)         Nominal voltage, cable       600 V         Test voltage Core/Core       2000 V (50 Hz, 1 min.)         Test voltage Core/Shield       2000 V (50 Hz, 1 min.)         Flame resistance       According to UL 1685 (CSA FT 4)         Resistance to oil       Resistant to oil to a limited extent         Other resistance       UV resistant According to UL 1581, Section 1200         Ambient temperature (operation)       -40 °C 70 °C (cable, fixed installation)         Ambient temperature (installation)       -20 °C 70 °C (cable, flexible installation)	Conductor resistance	≤ 120 Ω/km
Coupling resistance       ≤ 20.00 mΩ/m (at 10 Hz)         Nominal voltage, cable       600 V         Test voltage Core/Core       2000 V (50 Hz, 1 min.)         Test voltage Core/Shield       2000 V (50 Hz, 1 min.)         Flame resistance       According to UL 1685 (CSA FT 4)         Resistance to oil       Resistant to oil to a limited extent         Other resistance       UV resistant According to UL 1581, Section 1200         Ambient temperature (operation)       -40 °C 70 °C (cable, fixed installation)         Ambient temperature (installation)       -20 °C 60 °C	Wave impedance	100 Ω ±15 Ω (at 100 MHz)
Nominal voltage, cable  Fest voltage Core/Core  2000 V (50 Hz, 1 min.)  Test voltage Core/Shield  2000 V (50 Hz, 1 min.)  Flame resistance  According to UL 1685 (CSA FT 4)  Resistance to oil  Resistant to oil to a limited extent  Other resistance  UV resistant According to UL 1581, Section 1200  Ambient temperature (operation)  40 °C 70 °C (cable, fixed installation)  -40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Signal runtime	5.3 ns/m
Test voltage Core/Core  2000 V (50 Hz, 1 min.)  Test voltage Core/Shield  2000 V (50 Hz, 1 min.)  Flame resistance  According to UL 1685 (CSA FT 4)  Resistance to oil  Resistant to oil to a limited extent  Other resistance  UV resistant According to UL 1581, Section 1200  Ambient temperature (operation)  -40 °C 70 °C (cable, fixed installation)  -40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Coupling resistance	$\leq 20.00 \text{ m}\Omega/\text{m} \text{ (at 10 Hz)}$
Test voltage Core/Shield  2000 V (50 Hz, 1 min.)  Flame resistance  According to UL 1685 (CSA FT 4)  Resistance to oil  Resistant to oil to a limited extent  UV resistant According to UL 1581, Section 1200  Ambient temperature (operation)  -40 °C 70 °C (cable, fixed installation)  Ambient temperature (installation)  -20 °C 60 °C	Nominal voltage, cable	600 V
Flame resistance  According to UL 1685 (CSA FT 4)  Resistance to oil  Resistant to oil to a limited extent  UV resistant According to UL 1581, Section 1200  Ambient temperature (operation)  -40 °C 70 °C (cable, fixed installation)  -40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Resistance to oil  Other resistance  UV resistant According to UL 1581, Section 1200  Ambient temperature (operation)  -40 °C 70 °C (cable, fixed installation)  -40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Other resistance  UV resistant According to UL 1581, Section 1200  4mbient temperature (operation)  -40 °C 70 °C (cable, fixed installation)  -40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Flame resistance	According to UL 1685 (CSA FT 4)
Ambient temperature (operation)  -40 °C 70 °C (cable, fixed installation)  -40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Resistance to oil	Resistant to oil to a limited extent
-40 °C 70 °C (cable, flexible installation)  Ambient temperature (installation)  -20 °C 60 °C	Other resistance	UV resistant According to UL 1581, Section 1200
Ambient temperature (installation) -20 °C 60 °C	Ambient temperature (operation)	-40 °C 70 °C (cable, fixed installation)
		-40 °C 70 °C (cable, flexible installation)
Ambient temperature (storage/transport) -50 °C 70 °C	Ambient temperature (installation)	-20 °C 60 °C
	Ambient temperature (storage/transport)	-50 °C 70 °C

## **Environmental Product Compliance**

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50



# Bus system cable - NBC-MS/ 3,0-93K/R4AQ SCO - 1420517

## Technical data

**Environmental Product Compliance** 

For details about hazardous substances go to tab "Downloads",
Category "Manufacturer's declaration"

## **Drawings**

Schematic diagram



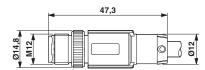
Pin assignment M12 male connector, 4-pos., D-coded, male side

#### Cable cross section



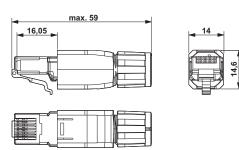
Sercos III [93K]

Dimensional drawing



Plug, M12 x 1, straight, shielded

## Dimensional drawing



RJ45 connector, IP20

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