

# ZK2000-5354-0xxx | Sensor cable, PUR, 5 x 0.34 mm<sup>2</sup>, drag-chain suitable

M12, plug, angled, male, 5-pin, A-coded – M12, socket, angled, female, 5-pin, A-coded

## **Plugs**

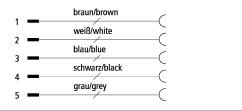
Rated current       4 A at 40 °C (according to IEC 61076-2-101)       4 A at 40 °C (according to IEC 61076-2-101)         Shielding       no       no         Contact resistance       < 10 mΩ       < 10 mΩ         Insulation resistance       ≥ 10 GΩ (according to IEC 60512-2)       ≥ 100 MΩ (according to IEC 60512)         Mechanical data       MI2         Installation size       M12       M12         Connector type       plug       socket         Configuration       angled       angled         Contact type       male       female         Number of positions (face)       5-pin       5-pin         Coding       A-coded       A-coded         Recommended torque, nut       0.6 Nm       0.6 Nm         Mating cycles       ≥ 100 (according to IEC 60512-9a)       ≥ 100 (according to IEC 60512-9a)         Way of locking       screw       screw         Weight per piece       0.023 kg (0.0507 lb)       0.023 kg (0.0507 lb)         Body colour       black       black         Body material       TPU, UL 94 HB       TPU, UL 94 HB         Coupling nut material       GD-Zn, Ni       GD-Zn, Ni         Seal       FPM       FPM         Contact carrier material       P	Electrical data	Head A	Head B
Shielding         no         no           Contact resistance         < 10 mΩ	Rated voltage	60 V (according to IEC 61076-2-101)	60 V (according to IEC 61076-2-101)
Contact resistance       < 10 mΩ	Rated current	4 A at 40 °C (according to IEC 61076-2-101)	4 A at 40 °C (according to IEC 61076-2-101)
Insulation resistance     ≥ 10 GΩ (according to IEC 60512-2)     ≥ 100 MΩ (according to IEC 60512)       Mechanical data     Installation size     M12     M12       Connector type     plug     socket       Configuration     angled       Contact type     male     female       Number of positions (face)     5-pin     5-pin       Coding     A-coded     A-coded       Recommended torque, nut     0.6 Nm     0.6 Nm       Mating cycles     ≥ 100 (according to IEC 60512-9a)     ≥ 100 (according to IEC 60512-9a)       Way of locking     screw       Weight per piece     0.023 kg (0.0507 lb)     0.023 kg (0.0507 lb)       Body colour     black     black       Body colour     black     black       Body material     TPU, UL 94 HB     TPU, UL 94 HB       Coupling nut material     GD-Zn, Ni     GD-Zn, Ni       Seal     FPM     FPM       Contact carrier colour     red     red       Contact carrier material     PA, UL 94 V-0     PA, UL 94 V-0       Contact material     CuZn, Ni b/Au 0.2 gal.     CuZn, Ni b/Au 0.2 gal.       Environmental data     cuZn, Ni b/Au 0.2 gal.     CuZn, Ni b/Au 0.2	Shielding	no	no
Mechanical data       Installation size     M12     M12       Connector type     plug     socket       Configuration     angled     angled       Contact type     male     female       Number of positions (face)     5-pin     5-pin       Coding     A-coded     A-coded       Recommended torque, nut     0.6 Nm     0.6 Nm       Mating cycles     ≥ 100 (according to IEC 60512-9a)     ≥ 100 (according to IEC 60512-9a)       Way of locking     screw     screw       Weight per piece     0.023 kg (0.0507 lb)     0.023 kg (0.0507 lb)       Body colour     black     black       Body material     TPU, UL 94 HB     TPU, UL 94 HB       Coupling nut material     GD-Zn, Ni     GD-Zn, Ni       Seal     FPM     FPM       Contact carrier colour     red     red       Contact carrier material     PA, UL 94 V-0     PA, UL 94 V-0       Contact material     CuZn, Ni b/Au 0.2 gal.     Environmental data       Special features     halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1     halogen-free, flame-resistant as per DIN EN 60811-2-1       RoHS compliant     yes     yes	Contact resistance	< 10 mΩ	< 10 mΩ
Installation size     M12     M12       Connector type     plug     socket       Configuration     angled     angled       Contact type     male     female       Number of positions (face)     5-pin     5-pin       Coding     A-coded     A-coded       Recommended torque, nut     0.6 Nm     0.6 Nm       Mating cycles     ≥ 100 (according to IEC 60512-9a)     ≥ 100 (according to IEC 60512-9a)       Way of locking     screw     screw       Weight per piece     0.023 kg (0.0507 lb)     0.023 kg (0.0507 lb)       Body colour     black     black       Body material     TPU, UL 94 HB     TPU, UL 94 HB       Coupling nut material     GD-Zn, Ni     GD-Zn, Ni       Seal     FPM     FPM       Contact carrier colour     red     red       Contact material     PA, UL 94 V-0     PA, UL 94 V-0       Contact material     PA, UL 94 V-0     PA, UL 94 V-0       Contact material     Cut, Ni b/Au 0.2 gal.     Environmental data       Special features     halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1     halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1	Insulation resistance	$\geq$ 10 G $\Omega$ (according to IEC 60512-2)	≥ 100 M $\Omega$ (according to IEC 60512)
Connector type  Configuration  angled  angled  female  Number of positions (face)  S-pin  S-pin  S-pin  Coding  A-coded  A-coded  Recommended torque, nut  0.6 Nm  Mating cycles  ≥ 100 (according to IEC 60512-9a)  ≥ 100 (according to IEC 60512-9a)  Way of locking  screw  screw  Weight per piece  0.023 kg (0.0507 lb)  Body colour  black  Body material  TPU, UL 94 HB  TPU, UL 94 HB  TPU, UL 94 HB  Coupling nut material  GD-Zn, Ni  Seal  FPM  FPM  Contact carrier colour  red  Contact carrier material  PA, UL 94 V-0  Contact material  CuZn, Ni b/Au 0.2 gal.  Environmental data  Special features  halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per IEC 60332-1-2, oil-resistant as per IDN EN 60811-2-1  RoHS compliant	Mechanical data		
Configuration angled angled  Contact type male female  Number of positions (face) 5-pin 5-pin  Coding A-coded A-coded  Recommended torque, nut 0.6 Nm 0.6 Nm  Mating cycles ≥ 100 (according to IEC 60512-9a) ≥ 100 (according to IEC 60512-9a)  Way of locking screw screw  Weight per piece 0.023 kg (0.0507 lb) 0.023 kg (0.0507 lb)  Body colour black black  Body material TPU, UL 94 HB TPU, UL 94 HB  Coupling nut material GD-Zn, Ni GD-Zn, Ni  Seal FPM FPM  Contact carrier colour red red  Contact carrier material PA, UL 94 V-0 PA, UL 94 V-0  Contact material CuZn, Ni b/Au 0.2 gal. CuZn, Ni b/Au 0.2 gal.  Environmental data  Special features halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  RoHS compliant yes yes	Installation size	M12	M12
Contact type       male       female         Number of positions (face)       5-pin       5-pin         Coding       A-coded       A-coded         Recommended torque, nut       0.6 Nm       0.6 Nm         Mating cycles       ≥ 100 (according to IEC 60512-9a)       ≥ 100 (according to IEC 60512-9a)         Way of locking       screw       screw         Weight per piece       0.023 kg (0.0507 lb)       0.023 kg (0.0507 lb)         Body colour       black       black         Body material       TPU, UL 94 HB       TPU, UL 94 HB         Coupling nut material       GD-Zn, Ni       GD-Zn, Ni         Seal       FPM       FPM         Contact carrier colour       red       red         Contact material       PA, UL 94 V-0       PA, UL 94 V-0         Contact material       CuZn, Ni b/Au 0.2 gal.       Environmental data         Environmental data       balogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1       halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1         RoHS compliant       yes	Connector type	plug	socket
Number of positions (face)       5-pin       5-pin         Coding       A-coded       A-coded         Recommended torque, nut       0.6 Nm       0.6 Nm         Mating cycles       ≥ 100 (according to IEC 60512-9a)       ≥ 100 (according to IEC 60512-9a)         Way of locking       screw       screw         Weight per piece       0.023 kg (0.0507 lb)       0.023 kg (0.0507 lb)         Body colour       black       black         Body material       TPU, UL 94 HB       TPU, UL 94 HB         Coupling nut material       GD-Zn, Ni       GD-Zn, Ni         Seal       FPM       FPM         Contact carrier colour       red       red         Contact material       PA, UL 94 V-0       PA, UL 94 V-0         Contact material       CuZn, Ni b/Au 0.2 gal.       CuZn, Ni b/Au 0.2 gal.         Environmental data       Louit in the compliant of the control of the contr	Configuration	angled	angled
Coding       A-coded       A-coded         Recommended torque, nut       0.6 Nm       0.6 Nm         Mating cycles       ≥ 100 (according to IEC 60512-9a)       ≥ 100 (according to IEC 60512-9a)         Way of locking       screw       screw         Weight per piece       0.023 kg (0.0507 lb)       0.023 kg (0.0507 lb)         Body colour       black       black         Body material       TPU, UL 94 HB       TPU, UL 94 HB         Coupling nut material       GD-Zn, Ni       GD-Zn, Ni         Seal       FPM       FPM         Contact carrier colour       red       red         Contact carrier material       PA, UL 94 V-0       PA, UL 94 V-0         Contact material       CuZn, Ni b/Au 0.2 gal.       CuZn, Ni b/Au 0.2 gal.         Environmental data         Special features       halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1       halogen-free, flame-resistant as per DIN EN 60811-2-1         RoHS compliant       yes       yes	Contact type	male	female
Recommended torque, nut  0.6 Nm  0.6 Nm  Mating cycles  ≥ 100 (according to IEC 60512-9a)  ≥ 100 (according to IEC 60512-9a)  Screw  Screw  Weight per piece  0.023 kg (0.0507 lb)  0.023 kg (0.0507 lb)  Body colour  black  Body material  TPU, UL 94 HB  TPU, UL 94 HB  Coupling nut material  GD-Zn, Ni  Seal  FPM  FPM  Contact carrier colour  red  Contact carrier material  PA, UL 94 V-0  Contact carrier material  PA, UL 94 V-0  Contact material  CuZn, Ni b/Au 0.2 gal.  Environmental data  Special features  halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  RoHS compliant  yes	Number of positions (face)	5-pin	5-pin
Mating cycles       ≥ 100 (according to IEC 60512-9a)       ≥ 100 (according to IEC 60512-9a)         Way of locking       screw       screw         Weight per piece       0.023 kg (0.0507 lb)       0.023 kg (0.0507 lb)         Body colour       black       black         Body material       TPU, UL 94 HB       TPU, UL 94 HB         Coupling nut material       GD-Zn, Ni       GD-Zn, Ni         Seal       FPM       FPM         Contact carrier colour       red       red         Contact carrier material       PA, UL 94 V-0       PA, UL 94 V-0         Contact material       CuZn, Ni b/Au 0.2 gal.       CuZn, Ni b/Au 0.2 gal.         Environmental data         Special features       halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1       halogen-free, flame-resistant as per DIN EN 60811-2-1         RoHS compliant       yes       yes	Coding	A-coded	A-coded
Way of locking screw screw Weight per piece 0.023 kg (0.0507 lb) 0.023 kg (0.0507 lb)  Body colour black black Body material TPU, UL 94 HB TPU, UL 94 HB Coupling nut material GD-Zn, Ni GD-Zn, Ni Seal FPM FPM Contact carrier colour red red Contact carrier material PA, UL 94 V-0 PA, UL 94 V-0 Contact material CuZn, Ni b/Au 0.2 gal. CuZn, Ni b/Au 0.2 gal.  Environmental data Special features halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1 ROHS compliant yes yes	Recommended torque, nut	0.6 Nm	0.6 Nm
Weight per piece0.023 kg (0.0507 lb)0.023 kg (0.0507 lb)Body colourblackblackBody materialTPU, UL 94 HBTPU, UL 94 HBCoupling nut materialGD-Zn, NiGD-Zn, NiSealFPMFPMContact carrier colourredredContact carrier materialPA, UL 94 V-0PA, UL 94 V-0Contact materialCuZn, Ni b/Au 0.2 gal.CuZn, Ni b/Au 0.2 gal.Environmental dataLalogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1halogen-free, flame-resistant as per DIN EN 60811-2-1RoHS compliantyesyes	Mating cycles	≥ 100 (according to IEC 60512-9a)	≥ 100 (according to IEC 60512-9a)
Body colour  Body material  TPU, UL 94 HB  TPU, UL 94 HB  Coupling nut material  GD-Zn, Ni  GD-Zn, Ni  FPM  FPM  Contact carrier colour  red  red  Contact carrier material  PA, UL 94 V-0  PA, UL 94 V-0  Contact material  CuZn, Ni b/Au 0.2 gal.  CuZn, Ni b/Au 0.2 gal.  Environmental data  Special features  halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  ges  RoHS compliant  yes  black  Black  TPU, UL 94 HB  TPU, UL 94 HB  CD-Zn, Ni  FPM  FPM  red  CuZn, Ni  FPM  CuZn, Ni b/Au 0.2 gal.  CuZn, Ni b/Au 0.2 gal.  halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  yes	Way of locking	screw	screw
Body materialTPU, UL 94 HBTPU, UL 94 HBCoupling nut materialGD-Zn, NiGD-Zn, NiSealFPMFPMContact carrier colourredredContact carrier materialPA, UL 94 V-0PA, UL 94 V-0Contact materialCuZn, Ni b/Au 0.2 gal.CuZn, Ni b/Au 0.2 gal.Environmental dataFerial featureshalogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1halogen-free, flame-resistant as per DIN EN 60811-2-1RoHS compliantyesyes	Weight per piece	0.023 kg (0.0507 lb)	0.023 kg (0.0507 lb)
Coupling nut materialGD-Zn, NiGD-Zn, NiSealFPMFPMContact carrier colourredredContact carrier materialPA, UL 94 V-0PA, UL 94 V-0Contact materialCuZn, Ni b/Au 0.2 gal.CuZn, Ni b/Au 0.2 gal.Environmental dataCuZn, Ni b/Au 0.2 gal.halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1RoHS compliantyesyes	Body colour	black	black
SealFPMFPMContact carrier colourredredContact carrier materialPA, UL 94 V-0PA, UL 94 V-0Contact materialCuZn, Ni b/Au 0.2 gal.CuZn, Ni b/Au 0.2 gal.Environmental dataEnvironmental dataSpecial featureshalogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1halogen-free, flame-resistant as per DIN EN 60811-2-1RoHS compliantyesyes	Body material	TPU, UL 94 HB	TPU, UL 94 HB
Contact carrier colour  Contact carrier material  PA, UL 94 V-0  Contact material  CuZn, Ni b/Au 0.2 gal.  CuZn, Ni b/Au 0.2 gal.  CuZn, Ni b/Au 0.2 gal.  Environmental data  Special features  halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  oil-resistant as per DIN EN 60811-2-1  yes  red  CuZn, Ni b/Au 0.2 gal.  halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  yes	Coupling nut material	GD-Zn, Ni	GD-Zn, Ni
Contact carrier material PA, UL 94 V-0 Contact material CuZn, Ni b/Au 0.2 gal. CuZn, Ni b/Au 0.2 gal.  Environmental data Special features halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1 oil-resistant as per DIN EN 60811-2-1 yes yes	Seal	FPM	FPM
Contact material  CuZn, Ni b/Au 0.2 gal.  Alogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1  yes  yes	Contact carrier colour	red	red
Environmental data  Special features halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1 oil-resistant as per DIN EN 60811-2-1  RoHS compliant yes yes	Contact carrier material	PA, UL 94 V-0	PA, UL 94 V-0
halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1 halogen-free, flame-resistant as per DIN EN 60811-2-1  Noil-resistant as per DIN EN 60811-2-1 yes yes	Contact material	CuZn, Ni b/Au 0.2 gal.	CuZn, Ni b/Au 0.2 gal.
oil-resistant as per DIN EN 60811-2-1 oil-resistant as per DIN EN 60811-2-1  RoHS compliant yes yes	Environmental data		
, ,	Special features		
Ambient temperature (operation) -25+80 °C, -13+176 °F -30+85 °C, -22+185 °F	RoHS compliant	yes	yes
	Ambient temperature (operation)	-25+80 °C, -13+176 °F	-30+85 °C, -22+185 °F

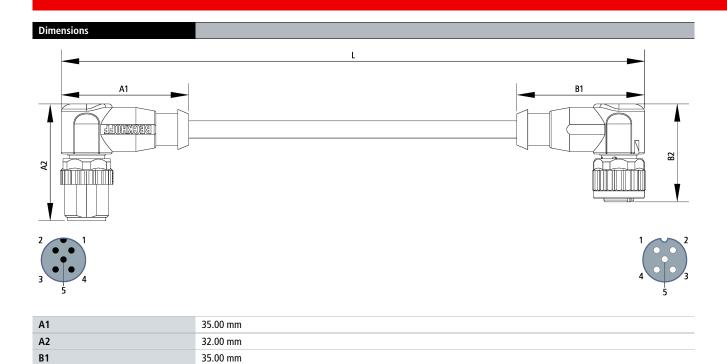
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 65/67 in screwed condition (according to IEC 60529)
Pollution level	3/2 (according to IEC 60664-1)	3/2 (according to IEC 60664-1)

# Cable

Electrical data	
Rated voltage	60 V (according to IEC 61076-2-104)
Insulation resistance	0.0  V (according to IEC 61076-2-104) ≥ 1 GΩ * km
Wire resistance (signal/24V)	≤ 58.0 Ω/km (20 °C)
Test voltage	≥ 3000 V
Mechanical data	
Conductor construction (signal/24V)	42 x 0.10 mm
Cross section (signal)	5 x 0.34 mm <sup>2</sup> (AWG22)
Min. bending radius, moved	10 x outer cable diameter
Min. bending radius, fixed installation	5 x outer cable diameter
Weight	37 kg/km (24.86 lb/1000 ft)
Outer cable diameter	5.1 mm ± 0.15 mm (0.200787" ± 0.0059")
Shielding	no
Use	drag-chain suitable
Max. acceleration	10 m/s <sup>2</sup>
Max. speed	3 m/s
Max. travel distance	10 m
Max. number of cycles	4 million
Wall thickness of wire insulation (signal/24V)	≥ 0.21 mm
Jacket colour	black
Material jacket	PUR (polyurethane)
Wire colour code	brown, white, blue, black, grey
Printing colour	white
Environmental data	
Operation temperature range, moved	-25+80 °C, -13+176 °F
Operation temperature range, fixed installation	-40+80 °C, -40+176 °F
Flame-retardant	according to DIN EN 60332-2-2
Halogen-free	DIN VDE 0472 part 815
Approvals	UL

#### Contact assembly





### Notes

B2

- Depending on the cable length (L), the following length tolerances apply:

26.80 mm

- $0 \text{ m...} < 0.2 \text{ m: } \pm 10 \text{ mm} \mid 0.2...4.0 \text{ m: } + 40 \text{ mm} \mid \ge 4.0 \text{ m: } + 1 \text{ }\%$
- Illustrations similar
- Further cable length on request. The last three digits of the ordering information is the cable length in decimeters, e.g. ZKxxxx-xxxx-x020 = cable length 2.00 m

Ordering information	Length
ZK2000-5354-0010	1.00 m
ZK2000-5354-0030	3.00 m
ZK2000-5354-0050	5.00 m
ZK2000-5354-0100	10.00 m

Accessories	
ZB8801-0000	torque wrench for hexagonal plugs, adjustable
ZB8801-0002	torque cable key, M12/wrench size 13, for ZB8801-0000

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