ZK4500-8023-xxxx | Motor connection cable 1.5 mm² with M23 speedtec® plug, drag-chain suitable

M23, plug, straight, female, Power: 3+PE, Signal: 5 – Pitch dimension 7.62 mm, plug, angled, female, 4-pin – Pitch dimension 3.50 mm, plug, straight, female, 5-pin



Plugs

Electrical data	Head A	Head B	Head D
Rated voltage (power)	630 V AC/DC	1000 V AC/DC (according to IEC 60664–1, IEC 61984), 600 V (accordig to UL 1059)	-
Rated voltage (signal/24V)	250 V AC/DC	-	320 V (according to IEC 60664–1, IEC 61984), 300 V (accordig to UL 1059)
Rated current (power)	30 A max.	41 A at 40°C (according to IEC 60664–1, IEC 61984), 40.5 A at 40°C (according to UL 1059)	-
Rated current (signal/24V)	7 A max.	-	10 A at 40°C (according to IEC 60664–1, IEC 61984), 10 A at 40°C (according to UL 1059)
Rated impulse voltage (power)	6.0 kV	8.0 kV	-

Rated impulse voltage (signal/24V)	2.5 kV	-	2.5 kV
Contact resistance	< 5 mΩ (signal), < 3 mΩ (power)	4.5 mΩ	< 5 mΩ
Insulation resistance	-	≥ 100 MΩ (according to IEC 60512)	≥ 100 MΩ (according to IEC 60512)
Insulation group	-	II	IIIa
Mechanical data			
Accessories type	Connectors	Connectors	Connectors
Installation size	M23	Pitch dimension 7.62 mm	Pitch dimension 3.50 mm
Connector type	plug	plug	plug
Configuration	straight	angled	straight
Contact type	female	female	female
Number of positions (face)	Power: 3+PE, Signal: 5	4-pin	5-pin
Wire termination	crimp connection	Clamping yoke connection	Clamping yoke connection
Recommended torque, screw termination	-	0.5...0.6 Nm	0.2...0.25 Nm
Recommended torque, screw flange	-	0.6 Nm	0.15...0.2 Nm
Mating cycles	500	25	25
Way of locking	Speedtec®	screw	screw
Weight	0.143 kg (0.3153 lb)	0.052 kg (0.1146 lb)	0.004 kg (0.0088 lb)
Body color	metal	black, similar to RAL 9011	black, similar to RAL 9011
Body material	zinc diecast/nickel plated	PA GF, UL 94 V-0	PBT, UL 94 V-0
Seal	FKM	-	-
Clamp ring	brass/nickel plated	-	-
Contact carrier material	PA 6.6 mod., UL 94 V-0	PA GF, UL 94 V-0	PBT, UL 94 V-0
Contact material	brass/gold plated	copper alloy	copper alloy
Max. wire cross-section	-	AWG24...AWG8 (0.2 mm^2... 10 mm^2)	AWG28...AWG14 (0.2 mm^2... 1.5 mm^2)
Environmental data			
Special features	Max. height for operation 2000 m	-	-
Ambient temperature (operation)	-20...+130°C, -4...+266°F	-50...+125°C, -58...+257°F	-50...+100°C, -58...+212°F
Protection rating	IP66/67 in screwed condition	IP20	IP20
Pollution level	3 (according to VDE 0110/EN61984 part 6.19.2.2)	3	3
UL	yes, UL E-file number: E247738	yes, UL E-file number: E60693	yes, UL E-file number: E60693

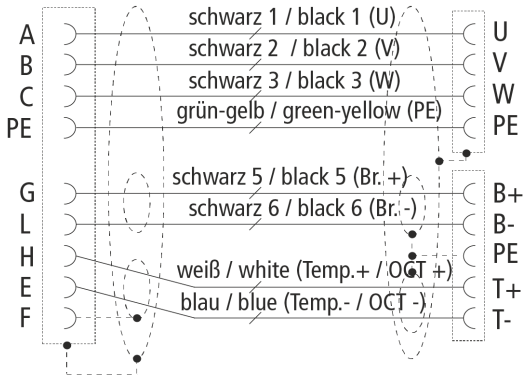
Overvoltage category	3 (according to VDE 0110/EN61984 part 6.19.2.2)	3	3

Cable

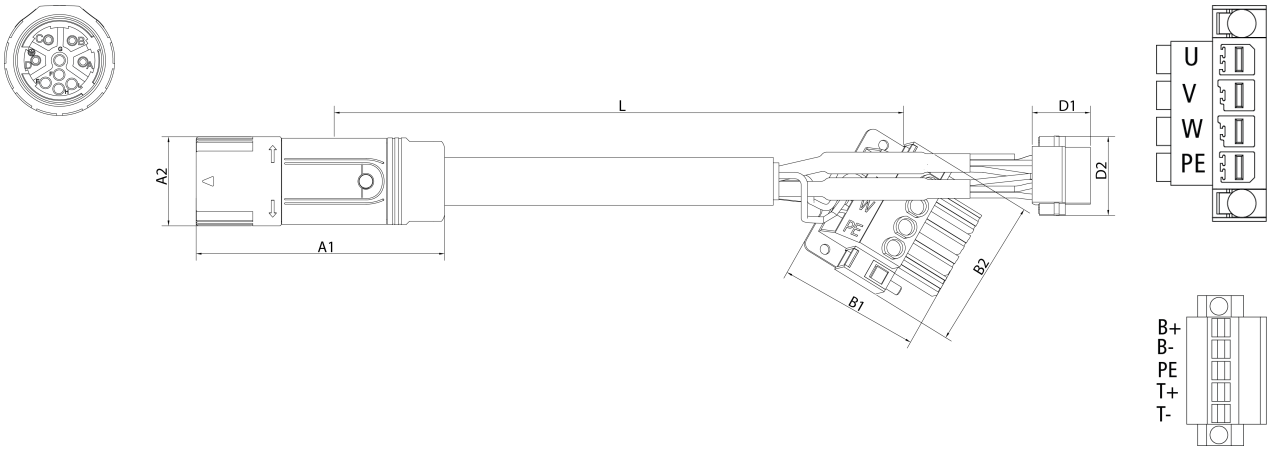
Electrical data	
Operating voltage	max. 1000 V AC (UL), Uo/U 600/1000 V (VDE)
Insulation resistance	≥ 500 MΩ * km (DIN EN 50395)
Mutual capacitance	Signal: 45 ± 15 pF/m, Power: 90 pF/m (at 800 Hz according to EN 50289-1-5)
Wire resistance (power)	≤ 13.3 Ω/km (DIN EN 50395)
Wire resistance (signal/24V)	≤ 55.0 Ω/km (DIN EN 50395)
Wire resistance (brake)	≤ 26.0 Ω/km (DIN EN 50395)
Characteristic impedance	Signal: 110 Ω ± 10 Ω (10 MHz) acc. to EN50289-1-11
Dielectric strength wire/wire (power)	4 kV 50 Hz 5 min. (DIN VDE 0472 T.509C)
Dielectric strength wire/shield (power)	4 kV 50 Hz 5 min. (DIN VDE 0472 T.509C)
Dielectric strength wire/wire (signal/24V)	3 kV 50 Hz 1 min. (DIN VDE 0472 T.509C)
Dielectric strength wire/shield (signal/24V)	3 kV 50 Hz 1 min. (DIN VDE 0472 T.509C)
Mechanical data	
Cross-section (power)	1.50 mm^2 (approx. AWG16)
Cross-section (signal)	AWG22 (approx. 0.34 mm^2)
Cross-section (brake)	0.75 mm^2 (AWG18)
Outer cable diameter	12.7 mm ± 0.4 mm (0.5" ± 0.0157")
Min. bending radius, moved in drag-chain	7 x outer cable diameter
Min. bending radius, fixed installation	5 x outer cable diameter
Weight	250.0 kg/km (167.975 lb/1000 ft)
Conductor material	copper bare
Optical covering factor of shielding	≥ 85%
Use	drag-chain suitable
Max. acceleration	30 m/s^2 by 5 m travel distance 15 m/s^2 by 10 m travel distance 5 m/s^2 by 20 m travel distance
Max. speed	4 m/s
Max. travel distance	20 m (horizontal) 5 m (vertical)
Max. number of cycles	5 million
Jacket color	orange

Material jacket	TPU (thermoplastic polyurethane)
Wire insulation material	PP (polypropylene)
Printing color	black
Torsion angle in °/m	max. ± 30 °/m
Max. tensile load, dynamic	20 N/mm²
Max. tensile load, static	50 N/mm²
Environmental data	
Operation temperature range, moved	-20...+80°C, -4...+176°F. In drag-chain with mechanical strain: -20...+60°C, -4...+140°F
Operation temperature range, fixed installation	-40...+80°C, -40...+176°F
Oil resistance	according to DIN EN 60811-404, HD22.10 appendix A
Flame-retardant	according to IEC 60332-1-2 UL758 cable flame test
CFC-free	yes
Halogen-free	according to DIN VDE 0472 part 815
Silicone-free	yes
RoHS compliant	yes
UL	yes, UL E-file number: E170315
Approvals	UL758 (AWM) Style 21223 (jacket) and Style 10492 (core)

Pin assignment



Dimensions



A1	79.00 mm
A2	28.00 mm
B1	45.00 mm
B2	45.00 mm
D1	19.00 mm
D2	25.00 mm

Notes

- Depending on the cable length (L), the following length tolerances apply: ± 2-3%
- Illustrations similar
- The last three digits of the ordering information is the cable length in decimeters, e.g. ZK4xxx-xxxx-x020 = cable length 2.00 m

Ordering information	Length
ZK4500-8023-0010	1.00 m
ZK4500-8023-0013	1.30 m
ZK4500-8023-0015	1.50 m
ZK4500-8023-0020	2.00 m
ZK4500-8023-0030	3.00 m
ZK4500-8023-0035	3.50 m
ZK4500-8023-0040	4.00 m
ZK4500-8023-0045	4.50 m
ZK4500-8023-0050	5.00 m
ZK4500-8023-0055	5.50 m
ZK4500-8023-0060	6.00 m
ZK4500-8023-0065	6.50 m
ZK4500-8023-0070	7.00 m

ZK4500-8023-0080	8.00 m
ZK4500-8023-0085	8.50 m
ZK4500-8023-0090	9.00 m
ZK4500-8023-0100	10.00 m
ZK4500-8023-0110	11.00 m
ZK4500-8023-0120	12.00 m
ZK4500-8023-0130	13.00 m
ZK4500-8023-0140	14.00 m
ZK4500-8023-0150	15.00 m
ZK4500-8023-0160	16.00 m
ZK4500-8023-0170	17.00 m
ZK4500-8023-0180	18.00 m
ZK4500-8023-0190	19.00 m
ZK4500-8023-0200	20.00 m
ZK4500-8023-0210	21.00 m
ZK4500-8023-0220	22.00 m
ZK4500-8023-0230	23.00 m
ZK4500-8023-0240	24.00 m
ZK4500-8023-0250	25.00 m
ZK4500-8023-0260	26.00 m
ZK4500-8023-0270	27.00 m
ZK4500-8023-0280	28.00 m
ZK4500-8023-0290	29.00 m
ZK4500-8023-0300	30.00 m
ZK4500-8023-0310	31.00 m
ZK4500-8023-0320	32.00 m
ZK4500-8023-0330	33.00 m
ZK4500-8023-0340	34.00 m
ZK4500-8023-0350	35.00 m
ZK4500-8023-0360	36.00 m
ZK4500-8023-0370	37.00 m
ZK4500-8023-0380	38.00 m
ZK4500-8023-0390	39.00 m
ZK4500-8023-0400	40.00 m
ZK4500-8023-0410	41.00 m
ZK4500-8023-0420	42.00 m
ZK4500-8023-0430	43.00 m

ZK4500-8023-0440	44.00 m
ZK4500-8023-0450	45.00 m
ZK4500-8023-0460	46.00 m
ZK4500-8023-0470	47.00 m
ZK4500-8023-0480	48.00 m
ZK4500-8023-0490	49.00 m
ZK4500-8023-0500	50.00 m
ZK4500-8023-0510	51.00 m
ZK4500-8023-0520	52.00 m
ZK4500-8023-0530	53.00 m
ZK4500-8023-0540	54.00 m
ZK4500-8023-0550	55.00 m
ZK4500-8023-0560	56.00 m
ZK4500-8023-0570	57.00 m
ZK4500-8023-0580	58.00 m
ZK4500-8023-0590	59.00 m
ZK4500-8023-0600	60.00 m
ZK4500-8023-0610	61.00 m
ZK4500-8023-0620	62.00 m
ZK4500-8023-0630	63.00 m
ZK4500-8023-0640	64.00 m
ZK4500-8023-0650	65.00 m
ZK4500-8023-0660	66.00 m
ZK4500-8023-0670	67.00 m
ZK4500-8023-0680	68.00 m
ZK4500-8023-0690	69.00 m
ZK4500-8023-0700	70.00 m
ZK4500-8023-0710	71.00 m
ZK4500-8023-0720	72.00 m
ZK4500-8023-0730	73.00 m
ZK4500-8023-0740	74.00 m
ZK4500-8023-0750	75.00 m
ZK4500-8023-0760	76.00 m
ZK4500-8023-0770	77.00 m
ZK4500-8023-0780	78.00 m
ZK4500-8023-0790	79.00 m
ZK4500-8023-0800	80.00 m

ZK4500-8023-0810	81.00 m
ZK4500-8023-0820	82.00 m
ZK4500-8023-0830	83.00 m
ZK4500-8023-0840	84.00 m
ZK4500-8023-0850	85.00 m
ZK4500-8023-0860	86.00 m
ZK4500-8023-0870	87.00 m
ZK4500-8023-0880	88.00 m
ZK4500-8023-0890	89.00 m
ZK4500-8023-0900	90.00 m
ZK4500-8023-0910	91.00 m
ZK4500-8023-0920	92.00 m
ZK4500-8023-0930	93.00 m
ZK4500-8023-0940	94.00 m
ZK4500-8023-0950	95.00 m
ZK4500-8023-0960	96.00 m
ZK4500-8023-0970	97.00 m
ZK4500-8023-0980	98.00 m
ZK4500-8023-0990	99.00 m
ZK4500-8023-1000	100 m

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