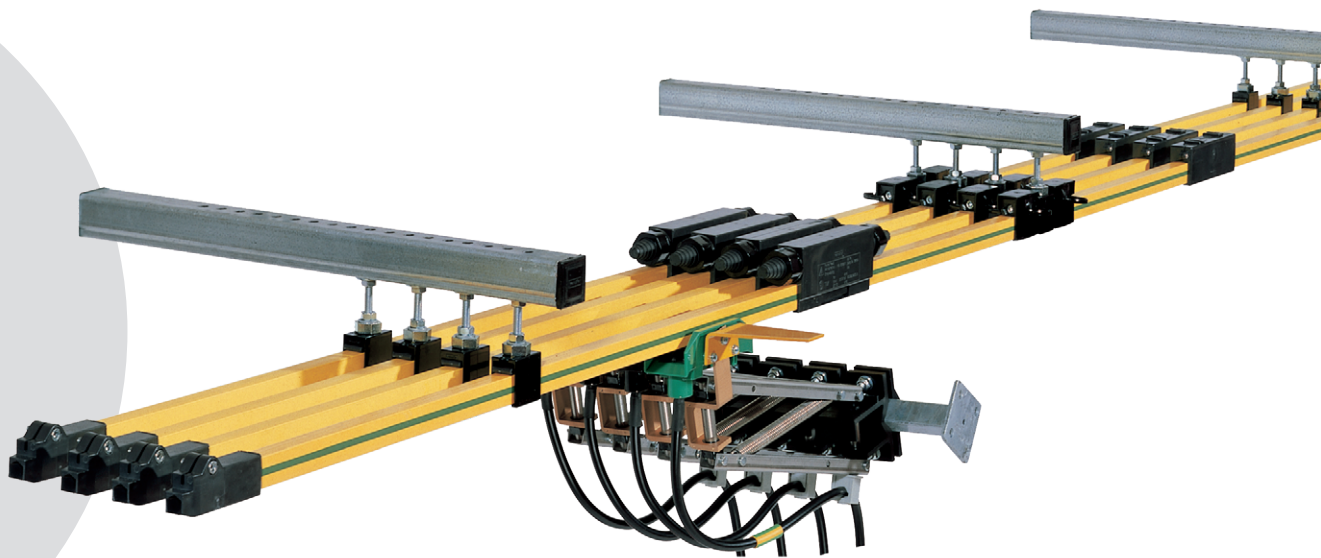









Insulated Conductor Rail

SinglePowerLine Program 0812



CONDUCTIX
wampfler

Technical Data

Conductor Rails	Stainless Steel	Aluminum		Copper ECO II		Copper	
Type	081217	081213	081214	08121C	08121D	081215	081216
Current load [A] At 100% duty cycle and 35 °C (rated value) At 60% duty cycle and 35 °C	25 32 	200 260 	320 380 	200 260 	320 380 	250 320 	400 480 
Rated voltage	[V]	690 (UL 600 V) – min. 24 V / 1A (minimum load)					
Protection type	Vertical insertion of Current Collector: IP23 (DIN EN 60529, VDE 0470-1); horizontal insertion of Current Collector: IP21						
Safety level	Finger-safe design (collector: finger-safe entry only)						
Installation orientation	Horizontal with collector entry on bottom side; collector entry sideways optional, for indoor use only						
Application area	Cranes, people movers, and similar applications						
Environment	Indoors and protected outdoors (see protection class)						
Rated suspension spacing [m]	1.5 (59.1 inches) typically 1.4 to 1.5						
Rail length [mm]	4000 (157.5 inches) (rated dimensions at 20 °C / tolerance ± 3 mm)						
System length [m]	unlimited (depending on power feed design, temperature, and expansion connectors)						
Exterior dimensions [mm]	18 x 26 (rail cross section)						
Rated rail spacing [mm]	50 (1.97 inches) (minimum spacing can be extended as needed)						
Travel speed [m/min]	600 m/min (straight segments without interruptions, such as Pickup Guides, Air Gaps, etc.)						
Expansion / expansion connectors	Compensation up to 200 m (565 feet) in system length, above 200 m the use of expansion elements is necessary						
Permitted ambient temperature ¹⁾	-15 °C to +55 °C (85 °C in heat-resistant design / PPE + SB) [deeper temperatures on request] ²⁾						
Maximum conductor temperature	+85 °C (115 °C in heat-resistant design / PPE + SB, temporarily (t < 30 s) 125 °C)						
Storage temperature	-30 °C to +40 °C (dry storage; avoid condensation)						
Conductor materials	Depending on type, electrolytic copper, saltwater-resistant aluminum with stainless steel contact surfaces, our hybrid material Copper ECO II , or stainless steel						
Rail insulation	Stabilized hardened PVC (standard material) and PPE + SB (heat-resistant design for interior use)						
Overvoltage category	III (EN 60664-1-2007/VDE0110-1)						
Installation- / Mounting tolerance	Distance between isolation items and steel structure: min. 10 mm (also see system sketch)						
Flammability / fire safety	Meets requirements for insulation materials in UL 94 V-1; Flame retardant and self-extinguishing (IEC 60695-11-10), halogen-free PPE-SB						
Local approvals	UL / CSA / GOST-R						
Coloration	Rail insulation in safety warning color RAL 1018 Zinc yellow or RAL 1021 Rape yellow in heat-resistant design						

Program 0812:

Used for the power supply of cranes, construction of larger slip ring assemblies, transfer carriages, cable trays outside the public accessible area, mounted out of immediate reach (indoor) and weatherproof outdoor applications (IP2X).

- Current collectors oriented sideways or from below
- Horizontal mounting of the rails only (contact us for vertical mounting/application)
- Additional equipment needed for outdoor use, e.g. insulators, overhead covers, rail-heating elements, must be considered
- Touching the current collectors is prevented by appropriate measures on the plant side. Contact protection class IP23 (with vertical current collector insertion) or IP21 (with horizontal current collector insertion)

Relevant Standards	
DIN EN 60664-1, VDE 0110-1:2008-1	Insulation coordination for electrical equipment in low-voltage installations - Part 1: Principles, requirements and testing (IEC 60664-1:2007); German edition EN 60664-1:2007
DIN EN 60204-1, 60204-32, VDE 0113-1:2007-06	Safety of machines - electrical equipment of machines - Part 1: General requirements (IEC 60204 - 1:2005, modified); German edition EN 60204-1:2006
DIN EN 60529, VDE 0470-1:2000-09	Protection classes using housings (IP code): (IEC 60529:1989 + A1:1999); German edition EN 60529:1991 A1:2000

Subject to technical modifications

¹⁾ At temperatures below -10 °C, the mechanical stress due to physical limitation of the breaking strength must be limited.

²⁾ At low temperatures, temperature flexible cables should be used.

System Structure

Insulated Conductor Rails

The standard product line offers the following conductor materials: electrolytic copper, aluminum, and our new special material Copper**ECO III**.

We therefore offer the ideal solution for every requirement:

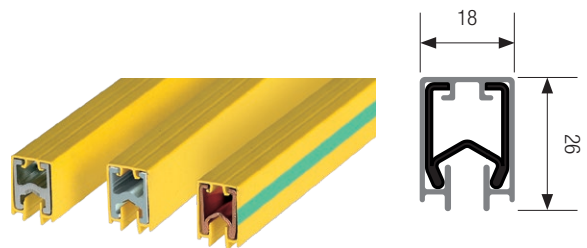
- Copper, with its good conductivity and low voltage drop, is the ideal conductor, with restrictions in applications in aggressive or corrosive environments. Used when high amperage is needed, particularly in standstill operation..
- As a budget-priced alternative, aluminum rails with a stainless steel contact surface are also available. Using a special procedure, stainless steel and saltwater-resistant aluminum are firmly joined with no gap, combining the advantages of both materials, that is, good conductivity and low wear, without the disadvantages of other aluminum rails available on the market with stainless steel inserts.
- As another option, for low current and control signals, there are stainless steel rails available as well.
- The portfolio is complemented by our new special material Copper**ECO III**. This innovation offers a significantly improved conductivity compared to aluminum-stainless steel and thus allows high power transmission even when the system is in standstill. Copper**ECO III** is suitable for demanding outdoor environments including saltwater areas. Thereby we can offer an excellent price-performance alternative inbetween copper and aluminum-stainless steel.

The conductor rails consist of the conductive rail body and the protective insulation in a contact-safe design.

As insulation material, PVC is used in standard applications
For higher ambient temperatures halogen-free PPE+SB is used.

Rated length: 4000 mm

Colour: Safety warning RAL 1018 (PVC) / RAL 1021 (PPE+SB)



PH = Phase
PE = Potential Earth ("grounding")

	Stainless steel	Aluminum (with stainless steel contact surface)		Copper ECO III		Copper	
		25 A	200 A	320 A	200 A	320 A	250 A
Rated current (100% duty cycle)							
Rated current (60% duty cycle)	32 A	260 A	380 A	260 A	380 A	320 A	480 A
Cu figure	-	-	-	-	-	0.59 kg/m	0.92 kg/m

Part No.	Standard insulation for ambient temperatures up to +55 °C						
PH	081217-4X11	081213-4X11*	081214-4X11*	08121C-4x11*	08121D-4x11*	081215-4X11	081216-4X11*
PE (green color stripes)	081217-4X12	081213-4X12*	081214-4X12*	08121C-4x12*	08121D-4x12*	081215-4X12	081216-4X12*

Part No.	Insulation for ambient temperatures up to +85 °C						
PH	081217-4X21	081213-4X21	081214-4X21	08121C-4x21	08121D-4x21	081215-4X21	081216-4X21
PE (green color stripes)	081217-4X22	081213-4X22	081214-4X22	08121C-4x22	08121D-4x22	081215-4X22	081216-4X22

Short lengths of 1, 2 and 3 m are available upon request for an additional price for cutting costs

Part No. for semistandard: 0812XX__ length X __ (length = 1 for 1 m, 2 for 2 m, and 3 for 3 m) short lengths upon request – example **1m**: 0812xx-1X11

* Standard range

Technische Daten

Conductor cross section (mm ²)	70	100	120	100	120	70	110
DC resistance [Ω/1000m] 20 °C	1.160	0.337	0.267	0.337	0.267	0.278	0.168
DC resistance [Ω/1000m] 35 °C	1.163	0.358	0.282	0.358	0.282	0.298	0.178
Impedance [Ω/1000m] 20 °C/50Hz	1.160	0.361	0.297	0.361	0.297	0.307	0.209
Impedance [Ω/1000m] 35 °C/50Hz	1.163	0.377	0.306	0.377	0.306	0.321	0.217
Weight [kg]	2.5	1.7	1.8	1.7	1.8	2.7	4.1
Min. bending radius horizontal	Upon request (depending on outdoor/indoor use, horizontal/vertical orientation and materials)						
Min. bending radius vertical							