CONDUCTIX-WAMPFLER RXP-D SERIES

TECHNICAL SPECIFICATION DOCUMENT

Cable RXP-D-26G1.5+(4×1.5)BL+12FO

Hybrid Power, Control & Fiber Optic Drag Chain Cable - 0.6/1 kV

APPLICATION SCOPE

Primary Application: Required power, control, and communication reel cables for Lines 3, 4, and 5 stackers, limestone reclaimers, and clay reclaimers in heavy industrial facilities.

Hybrid Functionality: Combines electrical power transmission, control signal distribution, and high-speed fiber optic communication in a single drag chain compatible cable assembly.

Dynamic Operation: Specifically engineered for continuous flexing applications with simultaneous power, control, and data transmission requirements in mobile industrial equipment.

Drag Chain Compatibility: Optimized for energy chain systems with enhanced bend radius performance and extended service life under continuous movement and mechanical stress conditions.

CABLE CONFIGURATION

Hybrid Cable Configuration

POWER CORES
26 × 1.5 mm²
Main Power & Control

CONTROL CORES
4 × 1.5 mm² (Blue)
Dedicated Control

FIBER OPTICS
12 × Single Mode
Communication

TOTAL CONFIGURATION: 30 Electrical Conductors + 12 Fiber Optic Elements

ELECTRICAL PARAMETERS

Rated Voltage
0.6/1 kV (electrical conductors)

Maximum Operating Voltage
1.2 kV AC / 1.5 kV DC

Test Voltage
3.5 kV AC for 5 minutes

Current Capacity (1.5 mm²)
16A per conductor (free air, 30°C ambient)

Conductor Resistance (1.5 mm² @ 20°C)
≤ 12.1 Ω/km

Insulation Resistance
≥ 100 MΩ·km @ 20°C

FIBER OPTIC SPECIFICATIONS

Fiber Type
Single Mode G.652.D compliant

Core/Cladding Diameter
9/125 µm ± 1 µm

Attenuation (@ 1310 nm)
≤ 0.4 dB/km

Attenuation (@ 1550 nm)
≤ 0.3 dB/km

Bandwidth
≥ 10 GHz·km

Operating Wavelength
1260-1625 nm

THERMAL & ENVIRONMENTAL PARAMETERS

Operating Temperature
-25°C to +80°C

Installation Temperature
-10°C to +60°C

Storage Temperature
-40°C to +85°C

Maximum Conductor Temperature
90°C (continuous operation)

Relative Humidity
Up to 95% non-condensing

UV Resistance
Excellent (outdoor installation suitable)

MECHANICAL PARAMETERS FOR DRAG CHAIN APPLICATION

Minimum Bending Radius (Moving)
7.5 × cable diameter (≈ 195 mm)

Minimum Bending Radius (Fixed)
4 × cable diameter (≈ 104 mm)

Maximum Travel Speed
5 m/s

Maximum Acceleration
10 m/s^2

Tensile Strength
≥ 300 N (total cable assembly)

Torsion Resistance
± 360°/m (±5° per 100mm)

Bend Cycles
≥ 10 million cycles @ specified radius

Crush Resistance
500 N/cm (short term)

DETAILED CONSTRUCTION SPECIFICATIONS

Electrical Conductors (26G1.5 + 4×1.5BL)

Conductor Material
Oxygen-free copper, class 5 stranding per IEC 60228

Insulation Material
Special PVC compound for dynamic applications

Core Identification
Numbered cores + 4 blue-coded control conductors

Shield Configuration
Overall tinned copper braid, 85% optical coverage

Fiber Optic Elements (12FO)

Fiber Protection
900 µm tight buffer coating

Fiber Arrangement
Central loose tube construction with gel filling

Strength Member
Aramid yarn reinforcement

Color Coding
Standard 12-color identification scheme

Cable Assembly Construction

Core Assembly
Electrical conductors stranded around central fiber tube

Inner Sheath
Extruded TPE compound, 1.5 mm nominal thickness

Outer Jacket
Polyurethane (PUR), 2.5 mm nominal thickness

Jacket Color
Black with continuous white marking stripe

PHYSICAL CHARACTERISTICS

Parameter	Specification	Unit	Test Method
Overall Cable Diameter	**26.0 ± 1.5**	**mm**	**IEC 60811-201**
Cable Weight	≈ 580	kg/km	Calculated
Copper Content	≈ 135	kg/km	IEC 60228
Jacket Thickness	2.5 ± 0.3	mm	IEC 60811-202
Cross-Sectional Area	≈ 531	mm^2	Calculated

CHEMICAL RESISTANCE & FIRE BEHAVIOR

Oil Resistance
Excellent resistance to mineral and synthetic oils

Chemical Resistance
Resistant to acids, alkalis, and most industrial chemicals

Hydrolysis Resistance
Outstanding long-term stability in humid conditions

Flame Resistance
Self-extinguishing, IEC 60332-1-2 compliant

Halogen Content
Halogen-free construction (LSZH characteristics)

Ozone Resistance
Excellent ozone and weather resistance

COMPLIANCE STANDARDS

Cable Standard
IEC 60502-1 (Power cables)

Conductor Standard
IEC 60228 (Conductors of insulated cables)

Fiber Optic Standard
ITU-T G.652.D (Single-mode optical fiber)

Fire Performance
IEC 60332-1-2 (Single cable flame test)

Drag Chain Standard
Conductix-Wampfler internal test protocols

Environmental
RoHS 2011/65/EU, REACH compliant

CONDUCTIX-WAMPFLER RXP-D SERIES REFERENCE

Product Family Information

Conductix-Wampfler RXP-D Series: Specialized drag chain cables available in 6-10 core configurations with integrated fiber optic elements, rated 0.6/1 kV with multi-layer sheath design optimized for tensile strength and bending radius performance in energy chain applications.

Technical Documentation: Comprehensive specifications available through Conductix-Wampfler technical handbooks covering detailed parameters for circular configuration cables with polyurethane outer jackets, shielding systems, and grounding provisions.

Customizable cable lengths and configurations available to meet specific project requirements for industrial automation and material handling systems.

INSTALLATION AND APPLICATION NOTES

Drag Chain Compatibility
Suitable for all standard energy chain systems

Support Interval
Maximum 1.5 m in horizontal runs

Connector Termination
Standard industrial connectors and fiber optic terminations

Segregation Requirements
Power and fiber elements internally segregated

Grounding
Shield continuity essential for EMC performance

Service Life
≥ 5 years continuous operation under specified conditions

This specification is subject to technical improvements and modificationswithout prior notice. Custom designs and configurations available upon request.

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