TYPE · FESTOON CABLE · CRANES & HOISTS | 0.6/1 kV | 16 TYPES | D12Y11Y-J/O

FC-FPU-R D12Y11Y-J/O

Round PUR Festoon Cable

Round halogen-free PUR festoon cable (D12Y11Y-J/O) for power and control on STS trolleys, hoists and RMG / ASC cranes — 16 variants, 6 × D bending radius, up to 180 m/min; screened (C) versions on request.

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01 Application and product overview

FC-FPU-R (type D12Y11Y-J/O) is a round, halogen-free PUR festoon cable for power and control on STS trolleys, hoists and RMG / ASC cranes. Power sizes run from 4×6 to 4×95 mm² and control cables from 7 to 36 numbered cores.

Short-lay stranding keeps the cores in position over millions of loop cycles; a 6 × D bending radius and ±25 °/m torsion tolerance suit sliding-carrier festoon systems at up to 180 m/min. Sixteen variants are listed; screened (C) versions and individually screened pairs are available on request. Choose the flat FC-FPU-F when the tightest loop radius and lowest profile matter.

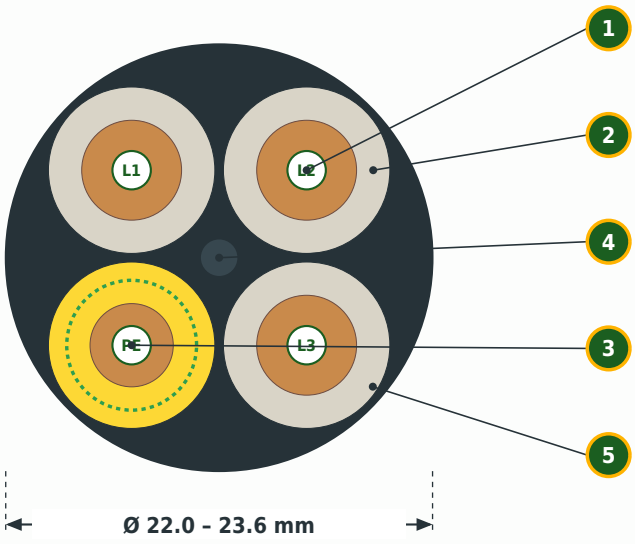
Typical applications

- STS trolley and hoist festoons that need limited torsion tolerance or screening
- Control and data cables with many numbered cores
- RMG / ASC trolley supply
- Boom-mounted festoons on shiploaders and stackers / reclaimers

16 variants	0.6/1 kV	180 m/min	6 × D
4×6 – 4×95 power · 7 – 36 cores control	AC rated voltage · 90 °C	Festoon guidance speed	Min. bending radius

Festoon or reeling? A festoon cable hangs in loops from carriers on a track and bends repeatedly in one plane as the trolley moves; a reeling cable is wound onto a reel and must cope with multi-layer winding, S-bends and torsion. For cables that wind on a reel choose a reeling series instead (FC-TPU, FC-CFX, FC-TMV).

02 Construction



Section A–A · FC-FPU-R 0.6/1 kV · reference size 4×25 mm²
Schematic, 1st-angle, not to scale; other sizes scale proportionally.

No.	Element	Material
1	**Conductor**	Bare copper, fine-wire, class 5 (IEC 60228)
2	**Core insulation**	XLPE, 90 °C — flexible, abrasion-resistant
3	**Earth core**	Green-yellow, laid up with the power cores
4	**Central filler**	Halogen-free filler
5	**Outer sheath**	Halogen-free PUR, round profile, flame-retardant, black

Core arrangement and identification: Type designation: -J with, -O without green-yellow earth core. Core identification: up to 5 cores coloured to DIN VDE 0293-308; from 6 cores natural colour with black numbers.

03 Electrical, thermal and mechanical characteristics

Rated voltage U_0/U	0.6/1 kV AC (U_m 1.2 kV); DC 0.9/1.8 kV
Test voltage	2.5 kV
Conductor	Bare copper, fine-wire class 5 (IEC 60228)
Insulation	XLPE, 90 °C; short-circuit temperature +250 °C
Outer sheath	Halogen-free PUR, flame-retardant (IEC 60332-1-2), abrasion-resistant, black
Core identification	Up to 5 cores coloured to DIN VDE 0293-308; from 6 cores natural colour with black numbers

Ambient, fixed installation	−40 °C to +80 °C
Ambient, moving	−30 °C to +80 °C
Min. bending radius	6 × D
Max. tensile load on conductors	15 N/mm²
Torsion	±25 °/m
Max. travel speed in festoon systems	180 m/min guidance value; consult FeiChun for higher speeds or long travel

04 Dimensions, weights and ratings — 0.6/1 kV (16 types)

Type cores × mm²	FeiChun art. no.	Cond. Ø max. mm	Outer Ø min. mm	Outer Ø max. mm	Min. bend radius mm	Weight kg/km	Max. tensile force N	R_{20} max. Ω/km	Current A	Short-circ. kA (1 s)
Power cables, four-core (3 phases + earth)										
4×6	FC-FPR-001	3.2	13.6	14.6	88	325	360	3.30	56	0.86
4×10	FC-FPR-002	4.0	15.5	16.6	100	495	600	1.91	78	1.43
4×16	FC-FPR-003	5.0	17.8	19.1	115	740	960	1.21	104	2.29
4×25	FC-FPR-004	6.2	22.0	23.6	142	1,150	1,500	0.780	138	3.57
4×35	FC-FPR-005	7.8	26.3	28.2	169	1,620	2,100	0.554	170	5.00
4×50	FC-FPR-006	9.6	31.7	34.0	204	2,330	3,000	0.386	212	7.15
4×70	FC-FPR-007	11.1	35.7	38.3	230	3,160	4,200	0.272	263	10.01
4×95	FC-FPR-008	12.6	40.2	43.1	259	4,220	5,700	0.206	316	13.58
Control cables, multicore (numbered cores)										
7×1.5	FC-FPR-009	1.5	11.3	12.1	73	190	160	13.3	24*	0.21
12×1.5	FC-FPR-010	1.5	14.1	15.1	91	310	270	13.3	24*	0.21
18×1.5	FC-FPR-011	1.5	15.8	16.9	101	425	400	13.3	24*	0.21
24×1.5	FC-FPR-012	1.5	16.6	17.8	107	520	540	13.3	24*	0.21
36×1.5	FC-FPR-013	1.5	21.2	22.7	136	800	810	13.3	24*	0.21
12×2.5	FC-FPR-014	2.0	16.0	17.2	103	455	450	7.98	32*	0.36
24×2.5	FC-FPR-015	2.0	19.1	20.5	123	780	900	7.98	32*	0.36
36×2.5	FC-FPR-016	2.0	24.7	26.5	159	1,230	1,350	7.98	32*	0.36

* Control cables: current shown for three loaded cores; with more loaded cores apply the multicore factors. Bending radius = 6 × D_{max}. Current: free air, 30 °C ambient, DIN VDE 0298-4. Tensile force 15 N/mm² × total copper cross-section. Short-circuit (1 s, 90 °C → 250 °C): $I_{k,1s}$ = 0.143 kA/mm² × S; $I_{k,t} = I_{k,1s} / \sqrt{t}$ (0.1 s ≤ t ≤ 5 s).

Ambient temperature factors (conductor 90 °C, reference 30 °C)

°C	20	25	30	35	40	45	50	55	60
Factor	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71

Reduction factors for multicore cables (loaded cores)

Loaded cores	5	7	10	14	19	24	40	61
Factor	0.75	0.65	0.55	0.50	0.45	0.40	0.35	0.30

05 Standards and testing

Standard	Scope
DIN EN 60228 / IEC 60228 / VDE 0295	Conductors, class 5 (flexible)
IEC 60502-1	Power cables up to 1 kV — insulation basis
DIN VDE 0298-3	Bending radii, tensile loads, torsion
DIN VDE 0298-4	Current-carrying capacity and reduction factors
DIN VDE 0293-308 (HD 308)	Identification of cable cores
DIN EN 60332-1-2 / IEC 60332-1-2	Flame propagation, single vertical cable
IEC 60754-1 / -2	Halogen content and acidity of gases from combustion

Routine and type tests

- AC voltage test on every drum length
- Conductor resistance and dimension check
- Continuity of earth and control cores
- Reeling, bending and torsion tests (type test)
- Flame propagation (IEC 60332-1-2) and confirmation of halogen-free materials

Test documentation: each delivery is accompanied by an in-house test certificate from FeiChun. Third-party witnessed tests can be arranged at the buyer's expense.

06 Installation, marking and delivery

Installation guidelines

- Loop and carrier geometry: hang diameter ≥ 2 × minimum bending radius; neighbouring loops must not touch; carriers must not crush or kink the sheath.
- Matched cables: hang cables of similar weight and stiffness on the same carriers; separate power and control where EMC requires.
- Strain relief at the fixed end and at the towing carrier; leave a length reserve for thermal movement and wear.
- Speed and acceleration: stay within the 180 m/min guidance value; long strokes or high accelerations need support elements — ask FeiChun.
- Heat: loops stacked in the sun or in a dense bundle carry less current — use the ambient and grouping factors.

Packaging and delivery

Drum	Steel or fumigated wooden drums; ends sealed with heat-shrink caps
Lengths	Continuous length as ordered, no joints
Lead time	2–3 weeks after technical agreement
Warranty	At least 3 years against manufacturing defects
Drum label	Type, size, length, gross/net weight, batch no., drum no.

07 Certification and quality

CE — LVD 2014/35/EU

Certificate No. M.2025.206.C116598 · EN 50525-1:2011+A1:2022 · UDEM International Certification · valid until 01.04.2030

EAC — TR CU 004/2011

Certificate No. EAEU KG417/052.CN.02.15390 · GOST 31996-2012, GOST 31565-2012 · valid 24.10.2025–23.10.2030

UKCA — Verification

No. ICR/VC/HS2508110 · BS EN 50525-1:2011+A1:2022 · ICR Polska · valid until 17.08.2030

Certificate scope and product coverage are confirmed per project. Certificate copies are available on request.

08 Notice and intellectual property

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