

## FESTOONFLEX PUR-HF D12Y11Y: low voltage round cables PUR sheathed for festoon application



### Application

For use as energy and control cable in festoon systems under severe conditions, incl. frequent bending. Also for drag lines, machine tools or materials handling systems.

In addition, suitable as drum reeling cable under moderate mechanical stress.

### Global data

Brand	FESTOONFLEX PUR-HF
Type designation	D12Y11Y-J/O

### Design features

Conductor	Plain copper, flexible class 5 acc. to DIN EN 60228 / DIN VDE 0295
Insulation	Halogen free compound, based on polyester
Core identification	Up to 5 cores: colored in accordance with DIN VDE 0293-308; From 6 cores: white with black numbers
Core arrangement	Cores twisted with short length of lay around central element
Outer sheath	Polyurethane, halogen free, flame retardant; Colour: black (opaque)
Marking	White imprint: FESTOONFLEX PUR-HF -J/-O (number of cores) x (cross-section) (year/week)

### Electrical parameters

Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage AC	0.7/1.2 kV
Max. permissible operating voltage DC	0.9/1.8 kV
AC Test Voltage	4 kV (5 Min.)
Current Carrying Capacity description	Acc. to DIN VDE 0298-4

### Chemical parameters

Resistance to fire	Similar to IEC 60332-1
Water resistance	The cables are suitable for permanent use in water (no drinking water) up to 50 meter diving depth.

### Thermal parameters

Max. permissible temperature at conductor	90 °C
Max. short circuit temperature of the conductor	250 °C
Ambient temperature for fixed installation	min -50 °C ; max +80 °C
Ambient temperature in fully flexible operation	min -40 °C ; max +80 °C

### Mechanical parameters

Max. tensile load on the conductor	15 N/mm <sup>2</sup>
Torsional stress	± 25 °/m
Min. bending radius	6 x D (Proved by flexing tests acc. to HD 22.2 part 3.1)
Travel speed	- In festoon systems: up to 210 m/min; - For reeling operation: up to 60 m/min; - In chain systems: up to 210 m/min (note: trouble free operation is influenced by several factors, among all the chain length. For long chain system we recommend to operate at lower speed).

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity for install. free in air (2) A	Short Circuit Current (conductor) kA
D12Y11Y-O power cables, single core										
1x16	20165443	5	8.5	9.5	57	170	240	1.21	104	2.29
1x25	20156874	6.2	9.9	11.1	67	270	370	0.78	138	3.58
1x35	20154575	7.8	11.7	12.9	77	380	520	0.55	170	5.01
1x50	20154574	8.9	13.9	15.1	91	530	750	0.39	212	7.15
1x70	20154573	11.1	16.2	17.4	104	740	1050	0.27	263	10.01
1x95	20166593	12.6	17.9	19.1	115	940	1420	0.21	316	13.59
1x120	20156873	14.8	20.2	21.5	130	1200	1800	0.16	370	17.16
1x150		16	21.8	23.2	139	1490	2250	0.13	424	21.45
1x185		17.7	24.3	25.7	154	1830	2770	0.11	484	26.46
1x240		20.2	27.7	29.3	176	2300	3600	0.08	567	34.32
1x300		22.7	30	32	192	3200	4500	0.06	651	42.9
D12Y11Y-O power cables, three core										
3x1,5		1.5	6.5	7.5	45	115	60	13.3	24	0.21
3x2,5	20156877	2	8.5	9.5	57	130	110	7.98	32	0.36
D12Y11Y-J power cables, four core										
4x1,5		1.5	8.1	9.1	55	120	90	13.3	24	0.21
4x2,5	20156878	2	9.2	10.2	61	160	150	7.98	32	0.36
4x4	20160347	2.6	10.3	11.5	69	230	240	4.95	43	0.57
4x6		3.2	12.1	13.2	80	320	360	3.3	56	0.86
4x10	20154577	4	15	16.2	97	520	600	1.91	78	1.43
4x16	20156879	5	17.7	18.9	113	750	960	1.21	104	2.29
4x25	20160348	6.2	21.1	22.5	135	1160	1500	0.78	138	3.58
4x35		7.8	25.8	27.4	164	1650	2100	0.55	170	5.01
4x50		9.6	31	33	198	2410	3000	0.39	212	7.15
4x70		11.1	38.1	40.6	244	3070	4200	0.27	263	10.01
4x95		12.6	42.0	44.5	267	4150	5700	0.21	316	13.59
D12Y11Y-J power cables, five core										
5x1,5		1.5	8	9	54	150	110	13.3	24	0.21
5x2,5		2	9.8	11	66	180	180	7.98	32	0.36
5x4	20154579	2.6	11.6	12.7	77	290	300	4.95	43	0.57
5x6	20154578	3.2	14	15.2	91	420	450	3.3	56	0.86
5x10		4	16.2	17.5	105	630	750	1.91	78	1.43
5x16	20166492	5	19.4	20.6	124	920	1200	1.21	104	2.29
5x25		6.2	23.2	24.5	148	1380	1870	0.78	138	3.58
D12Y11Y-J Control cables										
7x1,5		1.5	9	10	60	220	150	13.3	24	0.21
12x1,5		1.5	14.3	15.5	93	320	270	13.3	24	0.21
18x1,5	20154580	1.5	14.5	15.7	94	380	400	13.3	24	0.21
24x1,5	20157942	1.5	16.5	17.8	107	500	540	13.3	24	0.21
30x1,5		1.5	19.6	21	126	680	670	13.3	24	0.21
36x1,5		1.5	21.1	22.5	135	770	810	13.3	24	0.21
7x2,5	20166594	2	11.5	12.7	76	250	260	7.98	32	0.36
12x2,5	20160349	2	16.5	17.7	106	460	450	7.98	32	0.36

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity for install. free in air (2) A	Short Circuit Current (conductor) kA
18x2,5	20149380	2	16.7	17.9	107	580	670	7.98	32	0.36
24x2,5	20149192	2	19.2	20.4	122	760	900	7.98	32	0.36
30x2,5		2	24.9	26.5	159	1080	1120	7.98	32	0.36
36x2,5		2	25.9	27.5	165	1300	1350	7.98	32	0.36

(2) Nominal current carrying capacity for rubber cables installed free in air, at 30°C ambient temperature (see also technical annexes). For articles without part number the values shown are approximate, and need to be confirmed in case of order.