

PVC control cables



APPLICATION

PROTOFLEX® PVC control cables are specifically suitable for use as flexible control cables.

- Fans and air-conditioning systems
- Machine tools
- Production and processing machines
- Industrial robots

DESIGN

PROTOFLEX® PVC control cables consist of finely stranded copper conductors with V75 PVC insulation. The high grade PVC sheath is resistant to oil, grease and chemicals.

PROTOFLEX® PVC screened control cables have a PVC inner and outer sheath with a copper braided shield between the sheaths which serves to avoid electromagnetic interference (EMC) in building systems and where equipment is in environments where Electromagnetic interference would be unacceptable.

Designed for moderate mechanical loading, in dry, damp and wet areas and in hazardous areas. Outdoor use is possible, provided that the cables are protected from direct sunlight and are permanently installed.

SPECIAL FEATURES

Suitable for use in hazardous areas
Burning behavior in accordance with DIN VDE 0472 Part 804, Test B (IEC 332-1)

Low transfer impedance
The cable has a concentric copper braided shield to restrict electromagnetic interference (max 250 Ω /km at 30 MHz).

Voltages

- 300/500 V Rated voltage
- 3 phase and single phase operation
- in DC operation
- 2 kV Test voltage

Certification

VDE Reg. No. 7042

Standards

Based on DIN VDE 0281-13

PROTOFLEX PVC

SHIELD CONNECTION

In order to obtain optimum shielding quality, the shield must be connected around its entire circumference and over an ample surface area at both ends of the cable.

Twisting the shielding strands together into a pigtail or exclusive use of a sheath wire is not sufficient.

TECHNICAL INFORMATION

Cable construction is based on DIN VDE 0281-13

- Finely-stranded bare copper conductors according to VDE 0295 Class 5
- Insulation of special polyvinyl chloride (PVC)
- PVC inner sheath over laid-up cores in shielded versions
- Braided shield of tinned copper wires over inner sheath
- Grey PVC outer sheath, largely resistant to oil and chemicals

CONTINUOUS TENSILE LOAD

The maximum allowable tensile stress for operation of cables with mobile equipment is 15 N per mm².

The maximum allowable tensile stress is 50 N mm² for fixed installations.

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PERMISSIBLE TEMPERATURE

At conductor:	free-flexing fixed	+5°C to + 70°C - 40°C to + 70°C
Bending radii:	fixed free-flexing	4 d 7.5 d

d= outer diameter of cable

CURRENT CARRYING CAPACITY

The current carrying capacities are based on a continuous operating temperature of 40°C. At other temperatures these values must be converted using the following factors

°C	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Factor	1.26	1.20	1.15	1.10	1.05	1.00	0.94	0.88	0.81	0.73	0.65	0.57	0.47	0.34

VOLTAGE RATINGS

- Rated voltage: U_0/U = 300/500V
- AC test voltage = 2kV

*The cable is designated 300/500V in accordance with VDE/IEC.

CORE COLOUR IDENTIFICATION

All control cores are black, sequentially numbered and include a **green/yellow** earth core.

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PVC control cables, unscreened

Selection and ordering data

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 0.5	5DE7 026	16 x 0.20	4.8	8
3 x 0.5	5DE7 001	16 x 0.20	5.1	8
4 x 0.5	5DE7 002	16 x 0.20	5.6	8
5 x 0.5	5DE7 003	16 x 0.20	6.2	8
7 x 0.5	5DE7 004	16 x 0.20	6.8	8
12 x 0.5	5DE7 005	16 x 0.20	9.2	8
18 x 0.5	5DE7 010	16 x 0.20	10.8	8
25 x 0.5	5DE7 012	16 x 0.20	13.1	8
32 x 0.5	5DE7 014	16 x 0.20	14.2	8
40 x 0.5	5DE7 016	16 x 0.20	16.1	8
52 x 0.5	5DE7 027	16 x 0.20	17.7	8

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Selection and ordering data

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 0.75	5DE7 040	24 x 0.20	5.2	10
3 x 0.75	5DE7 041	24 x 0.20	5.6	10
4 x 0.75	5DE7 042	24 x 0.20	6.2	10
5 x 0.75	5DE7 043	24 x 0.20	6.8	10
7 x 0.75	5DE7 044	24 x 0.20	7.5	10
12 x 0.75	5DE7 045	24 x 0.20	10.0	10
18 x 0.75	5DE7 050	24 x 0.20	12.0	10
25 x 0.75	5DE7 052	24 x 0.20	14.5	10
34 x 0.75	5DE7 055	24 x 0.20	16.5	10
42 x 0.75	5DE7 057	24 x 0.20	17.9	10
50 x 0.75	5DE7 058	24 x 0.20	19.6	10



Current ratings are based on AS/NZS 3008.1.1:2009.

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Selection and ordering data

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 1.0	5DE7 080	32 x 0.20	5.7	13
3 x 1.0	5DE7 081	32 x 0.20	6.1	13
4 x 1.0	5DE7 082	32 x 0.20	6.7	13
5 x 1.0	5DE7 083	32 x 0.20	7.4	13
7 x 1.0	5DE7 084	32 x 0.20	8.3	13
12 x 1.0	5DE7 085	32 x 0.20	10.9	13
18 x 1.0	5DE7 090	32 x 0.20	13.1	13
25 x 1.0	5DE7 093	32 x 0.20	15.9	13
34 x 1.0	5DE7 096	32 x 0.20	18.1	13
41 x 1.0	5DE7 098	32 x 0.20	19.6	13
50 x 1.0	5DE7 102	32 x 0.20	21.5	13

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No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 1.5	5DE7 120	30 x 0.25	6.3	16
3 x 1.5	5DE7 121	30 x 0.25	6.7	16
4 x 1.5	5DE7 122	30 x 0.25	7.4	16
5 x 1.5	5DE7 123	30 x 0.25	8.3	16
7 x 1.5	5DE7 124	30 x 0.25	9.1	16
12 x 1.5	5DE7 125	30 x 0.25	12.1	16
18 x 1.5	5DE7 128	30 x 0.25	14.5	16
25 x 1.5	5DE7 133	30 x 0.25	17.7	16
34 x 1.5	5DE7 135	30 x 0.25	19.9	16
42 x 1.5	5DE7 136	30 x 0.25	21.6	16
50 x 1.5	5DE7 137	30 x 0.25	23.8	16

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Selection and ordering data

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 2.5	5DE7 160	50 x 0.25	7.7	21
3 x 2.5	5DE7 161	50 x 0.25	8.3	21
4 x 2.5	5DE7 162	50 x 0.25	9.2	21
5 x 2.5	5DE7 163	50 x 0.25	10.1	21
7 x 2.5	5DE7 164	50 x 0.25	11.2	21
12 x 2.5	5DE7 165	50 x 0.25	15.2	21
18 x 2.5	5DE7 170	50 x 0.25	18.1	21
25 x 2.5	5DE7 172	50 x 0.25	22.1	21
34 x 2.5	5DE7 175	50 x 0.25	25.0	21
50 x 2.5	5DE7 178	50 x 0.25	30.0	21



PROTOFLEX PVC

PVC control cables, screened

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No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 0.5	5DE7 626	16 x 0.20	6.8	8
3 x 0.5	5DE7 601	16 x 0.20	7.0	8
4 x 0.5	5DE7 602	16 x 0.20	7.5	8
5 x 0.5	5DE7 603	16 x 0.20	8.2	8
7 x 0.5	5DE7 604	16 x 0.20	8.7	8
12 x 0.5	5DE7 605	16 x 0.20	10.9	8
18 x 0.5	5DE7 610	16 x 0.20	12.8	8
25 x 0.5	5DE7 612	16 x 0.20	15.4	8
32 x 0.5	5DE7 614	16 x 0.20	16.7	8
40 x 0.5	5DE7 616	16 x 0.20	18.3	8



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Selection and ordering data

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 0.75	5DE7 640	24 x 0.20	7.4	10
3 x 0.75	5DE7 641	24 x 0.20	7.7	10
4 x 0.75	5DE7 642	24 x 0.20	8.2	10
5 x 0.75	5DE7 643	24 x 0.20	9.0	10
7 x 0.75	5DE7 644	24 x 0.20	9.5	10
12 x 0.75	5DE7 645	24 x 0.20	12.0	10
18 x 0.75	5DE7 650	24 x 0.20	14.2	10
25 x 0.75	5DE7 652	24 x 0.20	17.0	10
34 x 0.75	5DE7 655	24 x 0.20	19.0	10
42 x 0.75	5DE7 657	24 x 0.20	20.3	10



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No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching
mm ²		mm	mm	A
2 x 1.0	5DE7 680	32 x 0.20	7.8	13
3 x 1.0	5DE7 681	32 x 0.20	8.1	13
4 x 1.0	5DE7 682	32 x 0.20	8.9	13
5 x 1.0	5DE7 683	32 x 0.20	9.5	13
7 x 1.0	5DE7 684	32 x 0.20	10.3	13
12 x 1.0	5DE7 685	32 x 0.20	13.3	13
18 x 1.0	5DE7 690	32 x 0.20	15.6	13
25 x 1.0	5DE7 693	32 x 0.20	18.4	13
34 x 1.0	5DE7 696	32 x 0.20	20.8	13
41 x 1.0	5DE7 698	32 x 0.20	22.3	13



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