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 were 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.

PROTOFLEX PVC

SPECIAL FEATURES

Suitable for use in hazardous areas	Burning behavior in accordance with DIN VDE 0472 Part 804, Test B (IEC 660332-1-2) and AS 5000
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

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 mm^2.

The maximum allowable tensile stress is 50 N mm^2 for fixed installations.

PERMISSIBLE TEMPERATURE

At conductor:	free-flexing	-5°C to + 70°C
	fixed	- 40°C to + 70°C
Bending radii:	fixed	4 d
	free-flexing	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: *Uo/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.

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 
mm²		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

PVC control cables, unscreened Selection and ordering data

Current ratings are based on AS/NZS 3008.1.1:2017.

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Touching 
mm²		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

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 Spaced 
mm²		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

PVC control cables, unscreened Selection and ordering data

Current ratings are based on AS/NZS 3008.1.1:2017.

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Spaced 
mm²		mm	mm	A
2 x 1.5	**5DE7 120**	30 x 0.25	6.3	17
3 x 1.5	**5DE7 121**	30 x 0.25	6.7	17
4 x 1.5	**5DE7 122**	30 x 0.25	7.4	17
5 x 1.5	**5DE7 123**	30 x 0.25	8.3	17
7 x 1.5	**5DE7 124**	30 x 0.25	9.1	17
12 x 1.5	**5DE7 125**	30 x 0.25	12.1	17
18 x 1.5	**5DE7 128**	30 x 0.25	14.5	17
25 x 1.5	**5DE7 133**	30 x 0.25	17.7	17
34 x 1.5	**5DE7 135**	30 x 0.25	19.9	17
42 x 1.5	**5DE7 136**	30 x 0.25	21.6	17
50 x 1.5	**5DE7 137**	30 x 0.25	23.8	17

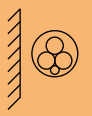
PVC control cables, unscreened

Selection and ordering data

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Spaced 
mm²		mm	mm	A
2 x 2.5	5DE7 160	50 x 0.25	7.7	22
3 x 2.5	5DE7 161	50 x 0.25	8.3	22
4 x 2.5	5DE7 162	50 x 0.25	9.2	22
5 x 2.5	5DE7 163	50 x 0.25	10.1	22
7 x 2.5	5DE7 164	50 x 0.25	11.2	22
12 x 2.5	5DE7 165	50 x 0.25	15.2	22
18 x 2.5	5DE7 170	50 x 0.25	18.1	22
25 x 2.5	5DE7 172	50 x 0.25	22.1	22
34 x 2.5	5DE7 175	50 x 0.25	25.0	22
50 x 2.5	5DE7 178	50 x 0.25	30.0	22

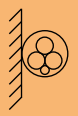
PVC control cables, screened Selection and ordering data

Current ratings are based on AS/NZS 3008.1.1:2017.

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Spaced 
mm²		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

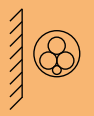
PVC control cables, screened

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 
mm²		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

PVC control cables, screened Selection and ordering data

Current ratings are based on AS/NZS 3008.1.1:2017.

No. of cores x conductor cross-section	Part No.	Nominal No. of strands and strand diameter	Approx. cable diameter	Unenclosed Spaced 
mm²		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