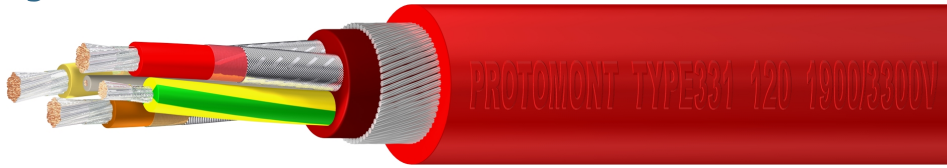


PROTOMONT Type 321, Type 331 (1.9/3.3kV): Flexible Trailing Cables With Galvanized Steel Pliable Wire Armouring



Application

The cables are suitable for fixed installation in underground mines for use as mine roadway extension cables and for coalface lighting.

Global data

Brand	PROTOMONT
Type	Type 321, 331
Standard	British Standard 6708

Design features

Conductor	Finely-stranded copper conductor, tinned, (class 5) acc. BS 6360
Insulation	PROTOLON, Basic material: EPR, colored according to BS 7655
Core identification	Power cores: Colored, Color code: Red, Yellow, Brown, Earth conductor: Green/Yellow
Core arrangement	Three power cores and the protective earth conductor layed up
Arrangement of PE-conductor	Layed up together with the power cores around a center filler
Inner sheath	Basic material: CR, Color: Red
Screen	Phase core screen: Composite copper/nylon braid
Reinforcement	Pliable armour of galvanized steel wires
Outer sheath	PROTOFIRM, Basic material: CR, Color: Red

Electrical parameters

Rated voltage	1.9/3.3 kV
Maximum permissible operating voltage AC	2.1/3.6 kV
Maximum permissible operating voltage DC	2.7/5.4 kV
AC test voltage	6 kV

Chemical parameters

Resistance to fire	EN 60332-1-2, IEC 60332-1-2
Resistance to oil	EN 60811-404, IEC 60811-404
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone and moisture

Thermal parameters

Max. permissible temperature at conductor	90 °C
Max. short circuit temperature of the conductor	250 °C
Ambient temperature for fix installation min.	-40 °C
Ambient temperature for fix installation max.	80 °C
Ambient temp. in fully flex. operation min.	-25 °C
Ambient temp. in fully flex. operation max.	60 °C

Mechanical parameters

Max. tensile load of cable	15 N/mm ²
Bending radii min.	Acc. to DIN VDE 0298 part 3

Number of cores x cross section	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Net weight approx. kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Nom. operating capacitance µF/km	Inductance nom. mH/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
Type 331										
3 x 25 + 1 x 16	6.4	57.8	61.6	6400	1125	0.795	0.41	0.4	131	3.58
3 x 35 + 1 x 25	8	64.6	68.4	7800	1575	0.565	0.47	0.37	162	5.01
3 x 50 + 1 x 35	9.5	69.8	73.8	9100	2250	0.393	0.54	0.36	202	7.15
3 x 70 + 1 x 50	11.3	80.3	84.6	12400	3150	0.277	0.61	0.34	250	10.01
3 x 95 + 1 x 70	12.7	86.4	90.7	14600	4275	0.21	0.66	0.33	301	13.59
3 x 120 + 1 x 70	14.7	90.9	95.2	16760	5400	0.164	0.72	0.32	352	17.16
3 x 150 + 1 x 70	16.6	90.9	95.2	17155	6750	0.132	0.77	0.31	404	21.45
Type 321										
4 x 35	8	56.2	60	6210	2100	0.565	0.47	0.37	162	5.01
4 x 50	9.5	63.9	67.7	7800	3000	0.393	0.54	0.36	202	7.15
4 x 70	11.3	70	74	9410	4200	0.277	0.61	0.34	250	10.01
4 x 95	12.7	80.6	84.9	11800	5700	0.21	0.66	0.33	301	13.59
4 x 120	14.7	85	89.3	13600	7200	0.164	0.72	0.32	352	17.16