

HYDROFIRM (T) SCREENED

Flexible Cables for use Underwater and for Submersible Pumps



APPLICATION

- Submersible pumps in boreholes, mining, irrigation dams, reticulation systems
- Ponds and fountains
- For fresh, salt & lightly polluted water (60°C)
- Underwater and marine installations
- Sub zero installations (-40°C)
- De-watering & drainage systems
- Pumps with thermistors
- Flexible marina power supplies
- Suitable for depths up to 500 mts

DESIGN

HYDROFIRM (T) screened cables consist of finely stranded copper conductors laid up to provide a flexible design. R-EP-90 elastomer insulation enables improved current capacities and a specially compounded EPR sheath inhibits water absorption.

A hand stripable bond between insulation and inner sheath stops any moisture migration along the insulated conductors should the sheath be damaged. Between the inner and outer EPR sheaths there is an overall copper screen. HYDROFIRM (T) is suitable for water temperatures up to 60°C and is designed and approved for use in drinking water eg., mineral spring and spa pumps. For particularly aggressive liquids refer to OZOFLEX (PLUS) and PROTOMONT HD. The sheath colour is blue for identification. The cable is in accordance with the Australian Standard AS 1125, AS 3116, AS 3191 and DIN VDE 0282 pt 810.

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OPERATING TEMPERATURE

- Minimum permissible ambient temperature -40°C
- Maximum permissible conductor temperature 90°C
- Maximum permissible short circuit temperature 250°C
- Minimum ambient temperature for optimum fully flexible operation -25°C

MINIMUM BENDING RADII

The following minimum bending radii should be observed to ensure operating reliability.

- For fixed installation 4 x cable diameter
- When freely flexing 5 x cable diameter

CURRENT CARRYING CAPACITY

Current ratings are based on continuous operation at an ambient temperature of 40°C. At other temperatures these values must be converted using the following factors. For HYDROFIRM (T) the water temperature should be considered as the ambient depending on the % of cable submerged.

| °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 |

TENSILE STRENGTH

The maximum allowable tensile stress is 15 N/mm². This ensures no conductor damage will occur in operation.

VOLTAGE RATING



- Rated Voltage: U₀/U = 0.6/1kV
- Maximum operating voltages in:
 - 3 phase AC operation U₀/U = 0.7/1.2kV
 - DC operation U₀/U = 0.9/1.8kV
- AC test voltage = 3kV

CORE COLOUR IDENTIFICATION

- 4 Core - brown, black, grey and green/yellow
- Pilot Core - black

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Selection and Ordering Data

| Part No. | Number of Cores and Conductor Size of strands | Power conductor Approx. number x max. strand diameter | Diameter of Bare Conductor | Overall diameter of cable | | Net weight 1000 m approx | Unenclosed Spaced | Unenclosed Touching |
|----------|---|---|----------------------------|---------------------------|--------|-----------------------------|---|---|
| | | | | Min mm | Max mm | |  A |  A |
| | mm ² | mm | mm | | | kg | A | A |
| 5DH1 401 | 4G1.5 | 28 x 0.26 | 1.5 | 13.0 | 15.0 | 260 | 20 | 19 |
| 5DH1 751 | 4G2.5 | 45 x 0.26 | 1.9 | 15.5 | 18.0 | 396 | 28 | 26 |
| 5DH1 752 | 4G4 | 51 x 0.31 | 2.5 | 17.5 | 20.0 | 525 | 38 | 35 |
| 5DH5 634 | 4G6 | 75 x 0.31 | 3.2 | 19.5 | 22.0 | 665 | 48 | 45 |
| 5DH1 754 | 4G10 | 77 x 0.41 | 4.1 | 23.5 | 26.0 | 970 | 66 | 62 |
| 5DH1 755 | 4G16 | 123 x 0.41 | 5.6 | 27.5 | 31.0 | 1400 | 88 | 83 |
| 5DH1 407 | 4G25 | 190 x 0.41 | 6.8 | 32.5 | 36.0 | 2030 | 120 | 110 |
| 5DH1 408 | 4G35 | 268 x 0.41 | 8.1 | 36.0 | 39.5 | 2610 | 145 | 135 |
| 5DH1 409 | 4G50 | 384 x 0.41 | 9.6 | 42.0 | 45.5 | 3610 | 180 | 170 |
| 5DH1 410 | 4G70 | 545 x 0.41 | 11.2 | 46.5 | 50.0 | 4710 | 230 | 215 |
| 5DH1 411 | 4G95 | 724 x 0.41 | 13.2 | 53.5 | 58.0 | 6340 | 285 | 265 |
| 5DH1 412 | 4G120 | 926 x 0.41 | 14.9 | 57.5 | 62.0 | 7470 | 330 | 305 |