

ICON[®] Instrumentation Cable

Zero Halogen, Flame Retardant

EN 50288-7
90 °C / 300 V

Single & Multi-pair, XLPE-Insulation, Collective Screen, Armour, LSZH-Sheath

RE-2X(St)HSAWH

Application

For transmission of analogue and digital signals in instrument and control systems; allowed for use in zone 1 and zone 2 group II classified areas (IEC 60079-14); not allowed for direct connection to low impedance source, e.g. the public mains electricity supply.
Recommended for indoor and outdoor installation, on racks, trays, in conduits, in dry and wet locations; for direct burial.
Recommended for use as fire protection measure for people and important material assets.

Construction

| | |
|------------------------|---|
| Conductor..... | plain annealed copper, 7 stranded, size, 0.5 mm ² , 0.75 mm ² , 1 mm ² , 1.3 mm ² , 1.5 mm ² |
| Insulation..... | cross-linked polyethylene XLPE |
| Colour code..... | black / white, continuously numbered on white core (1, 2..) for multipair |
| Wrapping..... | at least 1 layer of plastic tape |
| Collective screen..... | 24 µm aluminium PETP tape over 7-stranded tinned copper drain wire, 0.5 mm ² |
| Inner sheath..... | zero halogen flame retardant compound LSZH, black |
| Armour..... | galvanised round steel wires |
| Outer sheath..... | zero halogen flame retardant compound LSZH, black; blue for intrinsically safe systems |
| Cable marking..... | LEONI KERPEN ICON INSTRUMENTATION CABLE 300 V LSZH EN 50288-7 CE PLC LM |



Technical data

| | |
|----------------------------|-------------------------------------|
| Flame propagation | |
| Test on single cable | IEC 60332-1-2 |
| Test on bunched cables | IEC 60332-3-24 (Cat. C) |
| Amount of halogen acid gas | IEC 60754-1 (0%) |
| Degree of acidity of gases | IEC 60754-2 (pH > 4.3, C < 10µS/mm) |
| Smoke density | IEC 61034-2 (L.T. > 60%) |
| Sunlight resistance | UL 1581 section 1200 |
| Oil resistance | ICEA S-73-532* |

| | |
|----------------------|--|
| Temperature range: | -30 °C up to 90 °C (during operation) -5 °C up to 50 °C (during installation) |
| Min. bending radius: | 10 x cable-Ø |

Abbreviations

| | |
|------|-----------------------|
| RE- | Instrumentation Cable |
| 2X | insulation of XLPE |
| (St) | collective screen |
| H | inner sheath of LSZH |
| SWA | steel wire armour |
| H | LSZH Sheath |
| PLC | Production Lot Code |
| LM | Length Marking |

Electrical data at 20 °C

| | nom. | mm ² | 0.5 | 0.75 | 1 | 1.3 | 1.5 |
|---|------|-----------------|------|------|------|------|------|
| Conductor | nom. | mm ² | 0.5 | 0.75 | 1 | 1.3 | 1.5 |
| Conductor resistance | max. | Ω/km | 36.7 | 25.0 | 18.5 | 14.2 | 12.3 |
| Insulation resistance | min. | MΩ x km | 5000 | | | | |
| Mutual capacitance | max. | nF/km | | | | | |
| single pair: | | | 115 | 115 | 115 | 115 | 115 |
| up to 4 pairs: | | | 90 | 90 | 90 | 102 | 102 |
| above 4 pairs: | | | 75 | 75 | 75 | 85 | 85 |
| Capacitance unbalance | | pF/500 m | 500 | | | | |
| Inductance | max. | mH/km | 1 | | | | |
| L/R (ratio) | max. | µH/Ω | 25 | 25 | 25 | 40 | 40 |
| Test voltage U _{rms} (core : core) | | V | 1500 | | | | |
| Test voltage U _{rms} (core : screen) | | V | 1500 | | | | |
| Operating voltage | | V | 300 | | | | |

*(Test temperature + 60 °C; duration 4 h. Retention: min. 60 % of tensile strength/min. 60 % of elongation)

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Geometrical data

| No. of elem. | RT of insulation nom. mm | RT of inner sheath nom. mm | Ø over inner sheath approx. mm | Ø of armour wire nom. mm | RT of outer sheath nom. mm | Overall diameter approx. mm | Cable weight approx. kg/km | Part. No. Colour black |
|------------------------------|--------------------------------|----------------------------------|--------------------------------------|--------------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| 0.5 mm²/7 | | | | | | | | |
| 1 | 0.35 | 0.8 | 5.2 | 0.90 | 1.3 | 9.6 | 179 | 8112E001 |
| 2 | 0.35 | 0.9 | 7.6 | 0.90 | 1.3 | 12.0 | 269 | 8112E004 |
| 4 | 0.35 | 0.9 | 8.8 | 0.90 | 1.4 | 13.4 | 325 | 8112E007 |
| 5 | 0.35 | 1.0 | 9.8 | 0.90 | 1.4 | 14.4 | 375 | 8112E151 |
| 6 | 0.35 | 1.0 | 10.6 | 0.90 | 1.4 | 15.2 | 423 | 8112E010 |
| 8 | 0.35 | 1.0 | 11.3 | 0.90 | 1.4 | 15.9 | 473 | 8112E013 |
| 10 | 0.35 | 1.1 | 12.9 | 0.90 | 1.5 | 17.7 | 521 | 8112E016 |
| 12 | 0.35 | 1.1 | 13.5 | 0.90 | 1.5 | 18.3 | 592 | 8112E019 |
| 16 | 0.35 | 1.1 | 15.2 | 0.90 | 1.5 | 20.0 | 823 | 8112E022 |
| 20 | 0.35 | 1.2 | 16.9 | 0.90 | 1.6 | 21.9 | 920 | 8112E025 |
| 24 | 0.35 | 1.2 | 18.3 | 1.25 | 1.6 | 24.0 | 1028 | 8112E028 |
| 0.75 mm²/7 | | | | | | | | |
| 1 | 0.38 | 0.8 | 5.6 | 0.90 | 1.3 | 10.0 | 199 | 8112E031 |
| 2 | 0.38 | 0.9 | 8.5 | 0.90 | 1.4 | 13.1 | 308 | 8112E034 |
| 4 | 0.38 | 1.0 | 10.0 | 0.90 | 1.4 | 14.6 | 371 | 8112E037 |
| 5 | 0.38 | 1.0 | 10.9 | 0.90 | 1.4 | 15.5 | 436 | 8112E154 |
| 6 | 0.38 | 1.0 | 11.8 | 0.90 | 1.4 | 16.4 | 495 | 8112E040 |
| 8 | 0.38 | 1.1 | 12.8 | 0.90 | 1.5 | 17.6 | 533 | 8112E043 |
| 10 | 0.38 | 1.1 | 14.5 | 0.90 | 1.5 | 19.3 | 637 | 8112E046 |
| 12 | 0.38 | 1.1 | 15.1 | 0.90 | 1.5 | 19.9 | 825 | 8112E049 |
| 16 | 0.38 | 1.2 | 17.3 | 0.90 | 1.6 | 22.3 | 965 | 8112E052 |
| 20 | 0.38 | 1.3 | 19.2 | 1.25 | 1.6 | 24.9 | 1116 | 8112E055 |
| 24 | 0.38 | 1.3 | 20.8 | 1.25 | 1.7 | 26.7 | 1257 | 8112E058 |
| 1 mm²/7 | | | | | | | | |
| 1 | 0.4 | 0.9 | 6.3 | 0.90 | 1.3 | 10.7 | 220 | 8112E061 |
| 2 | 0.4 | 0.9 | 9.2 | 0.90 | 1.4 | 13.8 | 336 | 8112E064 |
| 4 | 0.4 | 1.0 | 10.9 | 0.90 | 1.4 | 15.5 | 436 | 8112E067 |
| 5 | 0.4 | 1.0 | 11.9 | 0.90 | 1.4 | 16.5 | 494 | 8112E157 |
| 6 | 0.4 | 1.0 | 13.0 | 0.90 | 1.4 | 17.6 | 550 | 8112E070 |
| 8 | 0.4 | 1.1 | 14.0 | 0.90 | 1.5 | 18.8 | 633 | 8112E073 |
| 10 | 0.4 | 1.1 | 15.9 | 0.90 | 1.5 | 20.7 | 859 | 8112E076 |
| 12 | 0.4 | 1.2 | 16.8 | 0.90 | 1.5 | 21.6 | 972 | 8112E079 |
| 16 | 0.4 | 1.2 | 19.0 | 1.25 | 1.6 | 24.7 | 1171 | 8112E082 |
| 20 | 0.4 | 1.3 | 21.1 | 1.25 | 1.7 | 27.0 | 1316 | 8112E085 |
| 24 | 0.4 | 1.4 | 23.1 | 1.25 | 1.7 | 29.0 | 1520 | 8112E088 |

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|-----------------------------|--------------------------------|----------------------------------|--------------------------------------|--------------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| No. of elem. | RT of insulation nom. mm | RT of inner sheath nom. mm | Ø over inner sheath approx. mm | Ø of armour wire nom. mm | RT of outer sheath nom. mm | Overall diameter approx. mm | Cable weight approx. kg/km | Part. No. Colour black |
| 1.3 mm²/7 | | | | | | | | |
| 1 | 0.45 | 0.9 | 6.8 | 0.90 | 1.3 | 11.2 | 241 | 8112E091 |
| 2 | 0.45 | 1.0 | 10.4 | 0.90 | 1.4 | 15.0 | 382 | 8112E094 |
| 4 | 0.45 | 1.0 | 12.0 | 0.90 | 1.4 | 16.6 | 510 | 8112E097 |
| 5 | 0.45 | 1.1 | 13.4 | 0.90 | 1.5 | 18.2 | 595 | 8112E160 |
| 6 | 0.45 | 1.1 | 14.6 | 0.90 | 1.5 | 19.4 | 657 | 8112E100 |
| 8 | 0.45 | 1.2 | 15.7 | 0.90 | 1.5 | 20.5 | 869 | 8112E103 |
| 10 | 0.45 | 1.2 | 17.9 | 1.25 | 1.6 | 23.6 | 1011 | 8112E106 |
| 12 | 0.45 | 1.3 | 18.9 | 1.25 | 1.6 | 24.6 | 1110 | 8112E109 |
| 16 | 0.45 | 1.3 | 21.4 | 1.25 | 1.7 | 27.3 | 1361 | 8112E112 |
| 20 | 0.45 | 1.4 | 23.8 | 1.25 | 1.8 | 29.9 | 1599 | 8112E115 |
| 24 | 0.45 | 1.5 | 25.9 | 1.25 | 1.8 | 32.0 | 1960 | 8112E118 |
| 1.5 mm²/7 | | | | | | | | |
| 1 | 0.45 | 0.9 | 7.1 | 0.90 | 1.3 | 11.5 | 259 | 8112E121 |
| 2 | 0.45 | 1.0 | 10.8 | 0.90 | 1.4 | 15.4 | 419 | 8112E124 |
| 4 | 0.45 | 1.1 | 12.7 | 0.90 | 1.5 | 17.5 | 544 | 8112E127 |
| 5 | 0.45 | 1.1 | 14.0 | 0.90 | 1.5 | 18.8 | 627 | 8112E163 |
| 6 | 0.45 | 1.1 | 15.2 | 0.90 | 1.5 | 20.0 | 833 | 8112E130 |
| 8 | 0.45 | 1.2 | 16.4 | 0.90 | 1.6 | 21.4 | 943 | 8112E133 |
| 10 | 0.45 | 1.3 | 18.8 | 1.25 | 1.6 | 24.5 | 1095 | 8112E136 |
| 12 | 0.45 | 1.3 | 19.7 | 1.25 | 1.7 | 25.6 | 1197 | 8112E139 |
| 16 | 0.45 | 1.4 | 22.5 | 1.25 | 1.7 | 28.4 | 1511 | 8112E142 |
| 20 | 0.45 | 1.5 | 25.0 | 1.25 | 1.8 | 31.1 | 1968 | 8112E145 |
| 24 | 0.45 | 1.5 | 27.1 | 1.25 | 1.8 | 33.2 | 2247 | 8112E148 |

RT = Radial Thickness