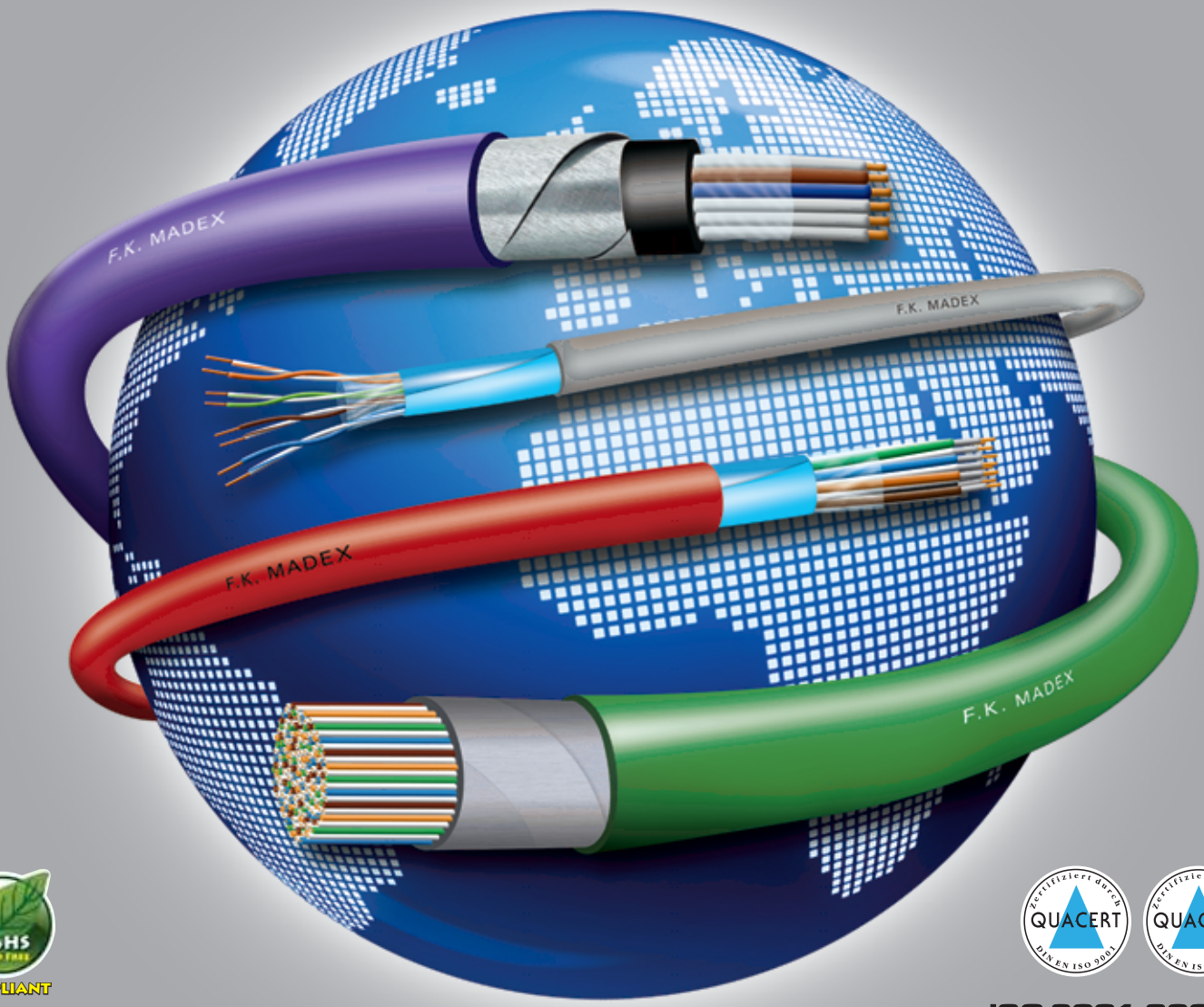
FABRYKA KABLI

MADEX

SINCE 1988

PRODUCTION PROGRAMME

- DATA COMMUNICATION CABLES
- TELECOMMUNICATION CABLES
- CONTROL AND INSTRUMENTATION CABLES
- LOW VOLTAGE POWER CABLES



RoHS LEAD FREE COMPLIANT

All Madex cables meet ROHS directive.

QUACERT DIN EN ISO 9001

QUACERT DIN EN ISO 14001

ISO 9001:2008
ISO 14001:2005

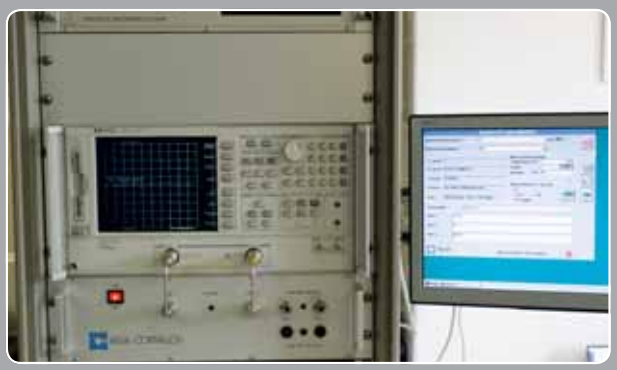
FABRYKA KABLI

MADEX

since 1988

FIRMA POLSKA

over 20 years of tradition



The Cable Factory Madex operates on the market since 1988. The Company specialises in manufacturing of data communication, telecommunication and coaxial copper cables.

Our production lines are equipped with machines and devices of the best companies on the cable machinery market: Northampton Machinery Company, Henrich, Unitek and Beta Lasermike.

The complete production profile offer includes:

- **data cables: UTP, FTP, S-FTP, STP, SSTP cat.5e-7$_A$ solid and stranded conductors, both PVC and LSOH sheath;**
- **telecommunication cables incl. cables for broadband transmission;**
- **halogen-free and fire-resistant cables;**
- **low voltage power cables;**
- **coaxial cables;**
- **signal and steering cables**
- **special cables.**

Permanent maintaining of high quality of production is possible through implementation of the Quality Management System ISO 9001. In anxiety for natural environment we have implemented the System of Environmental Management ISO 14001.

Fully computerised research and control laboratory equipped with the most modern devices of AESA Cortaillod allows for accurate and universal assessment of final product quality. The offered by us cables comply with the most restricted quality requirements set for modern products of cable industry. It is confirmed by the awarded Certificates of Homologation and Quality, and other documents.

The quality of the entire data cables production process, not only the electric parameters, is confirmed by awarded certificates by Danish company 3P Third Party Testing which are honoured all over the world. Each commercial unit of the computer cable is fully controlled and delivered with parameter printout.

Cable Factory Madex is the recognised supplier for the biggest cable purchasers of the telecommunication and data communication market such as: TP S.A., Netia Telekom, Molex Premise Networks, C&C Partners Krone, Panduit and many others. Data communication cables and coaxial cables are also offered within the distribution network throughout Poland.

The strategic objective of the Company is to offer products of the best possible quality at moderate prices with the most convenient date and place of delivery for our Customer.

The complete production profile offer includes:

- **data cables: UTP, FTP, S-FTP, STP, SSTP cat.5e-7$_A$ solid and stranded conductors, both PVC and LSOH sheath**
- **telecommunication cables incl. cables for broadband transmission**
- **halogen-free and fire-resistant cables**
- **low voltage power cables**
- **coaxial cables**
- **signal and steering cables**
- **special cables**

Our projects:

Shopping Malls

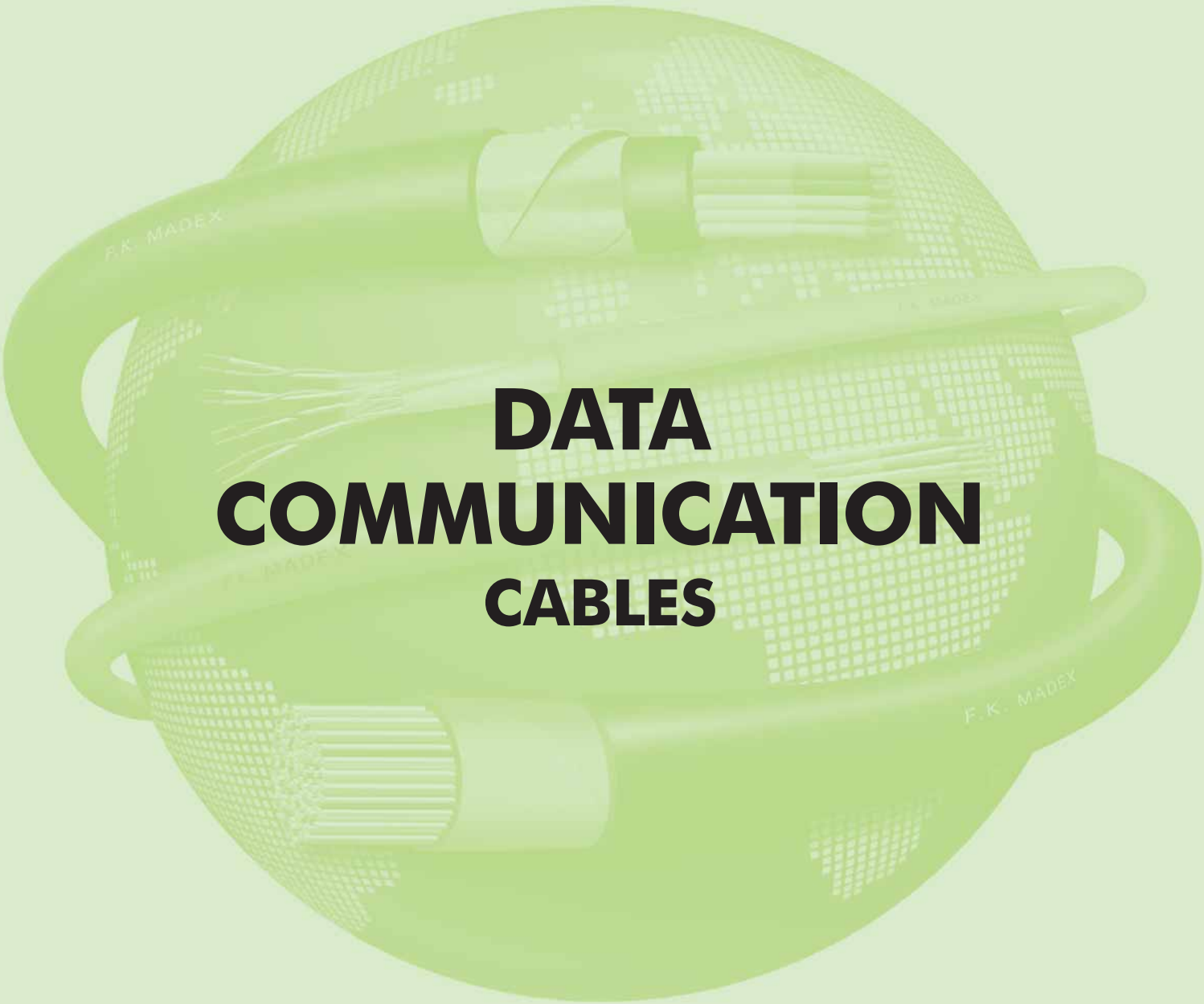
Warsaw Underground

PKP

MEN

Developers

TPSA



DATA COMMUNICATION
CABLES

Unshielded data cables with solid conductors for indoor installations

Symbol of cable	Standard	PKWiU	Remarks:
UTP 2PR 24AWG Cat. 5e **UTP 4PR 24AWG Cat. 5e** **UTP Ultralink 4×2×0.5 Cat. 5e** **UTP 2×4PR 24AWG Cat. 5e** **UTP 4PR 23AWG Cat. 6** **UTP 2×4PR 23AWG Cat. 6**	ZN-MADEX-04 ISO/IEC 11801 EN 50173 IEC 61156-5 EN 50288-3-1 (Cat.5e) EN 50288-6-1 (Cat.6) ANSI/TIA/EIA 568-B.2. Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Cable name according with ISO/IEC 11801 Ed. 2 **U/UTP** equivalent to UTP All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey 7035, other colours can be made according to customer requirement.

Application	Cables are intended for use in SCS as horizontal or backbone cable within networks, which are not exposed to electromagnetic interference. Cables category 5e are suitable for digital signals transmission, signal frequency spectrum up to 125 MHz. Cables category 6 are suitable for digital signals transmission, signal frequency spectrum up to 250 MHz. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C cables with LSOH jacket -10°C ÷ +50°C Min. bending ratio during installation: 8 × outer diameter of the cable. Min. bending ratio after installation: 4 × outer diameter of the cable. Maximal pulling force of cable: 20N per pair.

Unshielded data cables with flexible conductors (patch cables) for indoor installations

Symbol of cable	Standard	PKWiU	Remarks:
UTP Patch Cable 4PR 26AWG Cat. 5e **UTP Patch Cable 1PR 24AWG Cat. 5e** **UTP Patch Cable 2PR 24AWG Cat. 5e** **UTP Patch Cable 4PR 24AWG Cat. 5e** **UTP Patch Cable 2×4PR 24AWG Cat. 5e** **UTP Patch Cable 4PR 24AWG Cat. 6**	ZN-MADEX-03 ISO/IEC 11801 EN 50173 IEC 61156-6 EN 50288-3-2 (Cat.5e) EN 50288-6-2 (Cat.6) ANSI/TIA/EIA 568-B.2. Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Cable name according with ISO/IEC 11801 Ed. 2 **U/UTP** equivalent to UTP All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey 7035, other colours can be made according to customer requirement.

Application	Cables are intended to be used as work area cables to connect a telecommunications outlet to the terminal equipment and for patch cord cables to establish connections on a patch panel. Work area cables may also be used as patch cord cables in any distributor of a generic building wiring system to interconnect with equipment or to cross-connect between cabling systems. Cables category 5e are suitable for digital signals transmission, signal frequency spectrum up to 125MHz. Cables category 6 are suitable for digital signals transmission, signal frequency spectrum up to 250MHz. Cables are not intended for connection of power devices Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. bending ratio during installation: 8 × outer diameter of the cable. Min. bending ratio after installation: 4 × outer diameter of the cable Maximal pulling force of cable: 20N per pair

100% QUALITY SUPERVISING

WARRANTY 20 YEARS

Screened data cables with solid conductors for indoor installations

Symbol of cable	Standard	PKWiU	Remarks:
FTP 4PR 24AWG Cat. 5e **FTP 4PR 23AWG Cat. 6** **S-FTP 4PR 24AWG Cat. 5e** **STP 4PR 23AWG Cat. 6** **S-STP 4PR 23AWG Cat. 6** **S-STP 4PR 23AWG Cat. 7** **S-STP 4PR 22AWG Cat. 7_A (up to 1,2 GHz)** NEW	ZN-MADEX-04 ISO/IEC 11801 EN 50173 IEC 61156-5 EN 50288-2-1 (Cat.5e) EN 50288-5-1 (Cat.6) EN 50288-4-1 (Cat.7) ANSI/TIA/EIA 568-B.2. (Cat.5e i Cat.6) Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Cable name according with ISO/IEC 11801 Ed. 2 **F/UTP** equivalent to FTP **U/FTP** equivalent to STP **SF/UTP** equivalent to S-FTP **S/FTP** equivalent to S-STP All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey 7035, other colours can be made according to customer requirement.

Application	Cables are intended for use in SCS as horizontal or backbone cable within networks, which can be exposed to electromagnetic interference. Cables category 5e are suitable for digital signals transmission, signal frequency spectrum up to 125MHz. Cables category 6 are suitable for digital signals transmission, signal frequency spectrum up to 250MHz. Cables category 7 are suitable for digital signals transmission, signal frequency spectrum up to 600MHz. Cables category 7_A are suitable for digital signals transmission, signal frequency spectrum up to 1200MHz. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. bending ratio during installation: 8 × outer diameter of the cable. Min. bending ratio after installation: 4 × outer diameter of the cable. Maximal pulling force of cable: 20N per pair.

NEW

Screened data cables with flexible conductors (patch cables) for indoor installations

Symbol of cable	Standard	PKWiU	Remarks:
FTP Patch Cable 4PR 24AWG Cat.5e **FTP Patch Cable 4PR 26AWG Cat. 5e** **S-FTP Patch Cable 4PR 26AWG Cat. 5e**	ZN-MADEX-03 ISO/IEC 11801 EN 50173 IEC 61156-6 EN 50288-2-2 ANSI/TIA/EIA 568-B.2. Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Cable name according with ISO/IEC 11801 Ed. 2 **F/UTP** equivalent to FTP **SF/UTP** equivalent to S-FTP All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey 7035, other colours can be made according to customer requirement.

Application	Cables are intended to be used as work area cables to connect a telecommunications outlet to the terminal equipment and for patch cord cables to establish connections on a patch panel. Work area cables may also be used as patch cord cables in any distributor of a generic building wiring system to interconnect with equipment or to cross-connect between cabling systems. Cables category 5e are suitable for digital signals transmission, signal frequency spectrum up to 125MHz. Cables category 6 are suitable for digital signals transmission, signal frequency spectrum up to 250MHz. Cables are not intended for connection of power devices Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. bending ratio during installation: 8 × outer diameter of the cable. Min. bending ratio after installation: 4 × outer diameter of the cable. Maximal pulling force of cable: 20N per pair.

Data cables with solid conductors for outdoor installations

Symbol of cable	Standard	PKWiU	Remarks:
UTPz 4×2×0.5 Cat. 5e **UTPz 4PR 23AWG Cat. 6** **FTPz 4PR 24AWG Cat. 5e** **FTPzn 4PR 24AWG Cat. 5e** **UTPw 4PR 24AWG Cat. 5e** **UTPw 4PR 23AWG Cat. 6** **UTPzw 4PR 24AWG Cat. 5e** **UTPzwn 4PR 24AWG Cat. 5e** **FTPw 4PR 24AWG Cat. 5e** **FTPw 4PR 23AWG Cat. 6** NEW	ZN-MADEX-04 ISO/IEC 11801 EN 50173 IEC 61156-6 EN 50288-3-1 EN 50288-2-1 ANSI/TIA/EIA 568-B.2.	31.30.13 – 30.54	All cables are made with PE jacket in black colour. **UTPz** and **FTPz** – unfilled cables **UTPw** – filled, without moisture barrier **UTPzw** – filled, with moisture barrier (both sides plastic coated aluminium tape) without drain wire **UTPzwn** – selfsupporting,filled, with moisture barrier (both sides plastic coated aluminium tape) without drain wire **FTPw** – filled, with moisture barrier (one side plastic coated aluminium tape) with CuSn drain wire

Application	Cables UTPz and FTPz are intended for use in outdoor data communication networks to be installed under batten. Cables UTPzw are suitable for pulling in ducts or directly buried in ground, where mechanical stresses are likely to occur Cables UTPzwn are intended for aerial installation between buildings. Cables UTPw and FTPw are suitable for pulling in ducts or outside buildings. All cables features high resistance against UV radiation. Cables category 5e are suitable for digital signals transmission, signal frequency spectrum up to 125MHz. Cables category 6 are suitable for digital signals transmission, signal frequency spectrum up to 250MHz. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. bending ratio during installation: 8 × outer diameter of the cable. Min. bending ratio after installation: 4 × outer diameter of the cable. Maximal pulling force of cable: 20N per pair.

Unshielded multi-pair data cables with solid conductors for indoor installations

Symbol of cable	Standard	PKWiU	Remarks:
UTP Cat. 3 **5, 10, 15, 25, 50, 75 lub 100PR 24AWG** **UTP Cat. 5** **5, 10, 15, 25, 50, 75 lub 100PR 24AWG**	ZN-MADEX-09 ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568-B.2. Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Cable name according with ISO/IEC 11801 Ed. 2 **U/UTP** equivalent to UTP All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey 7035, other colours can be made according to customer requirement.

Application	Cables are intended for use in SCS as backbone cable within networks, which are not exposed to electromagnetic interference. Cables category 3 are suitable for digital signals transmission, signal frequency spectrum up to 16MHz. Cables category 5 are suitable for digital signals transmission, signal frequency spectrum up to 100MHz. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable. Maximal pulling force of cable: 20N per pair.

100% QUALITY SUPERVISING

WARRANTY 20 YEARS

Screened multi-pair data cables with solid conductors for indoor installations

Symbol of cable	Standard	PKWiU	Remarks:
FTP Cat. 3 **5, 10, 15, 25, 50, 75 and 100PR 24AWG**	ZN-MADEX-09 ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568-B.2. Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Cable name according with ISO/IEC 11801 Ed. 2 **F/UTP** equivalent to FTP All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey 7035, other colours can be made according to customer requirement.
Application	Cables are intended for use in SCS as backbone cable within networks, which can be exposed to electromagnetic interference. Cables category 3 are suitable for digital signals transmission, signal frequency spectrum up to 16MHz. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter. Maximal pulling force of cable: 20N per pair.		

Outdoor multi-pair data cables

Symbol of cable	Standard	PKWiU	Remarks:
UTPzw Cat. 3 **5, 10, 15, 25, 50, 75 and 100PR 24AWG**	ZN-MADEX-09 ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568-B.2.	31.30.13 – 30.54	Sheaths of outdoor cables are made from black coloured polyethylene (with carbon black).
Application	Cables for outdoor installation, for pulling in ducts or directly buried in ground, where mechanical stresses are likely to occur, features high resistance against electromagnetic interference and UV radiation. Cables category 3 are suitable for digital signals transmission, signal frequency spectrum up to 16MHz. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷+50°C Min. permissible bending radius: 10 × outer diameter of the cable. Maximal pulling force of cable: 20N per pair.		

100% QUALITY SUPERVISING

WARRANTY 20 YEARS

TELECOMMUNICATION
CABLES

Telecommunication data cables for xDSL systems

Symbol of cable	Standard	PKWiU	Remarks:
xDSL – 120 Ω 24×2×0,4 **xDSL – 120 Ω 4×(12×2×0,4)** **xDSL – 120 Ω 3×(24×2×0,4)** **xDSL – 120 Ω 24×2×0,5** **xDSL – 120 Ω 4×(12×2×0,5)** **xDSL – 120 Ω 3×(24×2×0,5)** **S-02YS(St)Y – 100 Ω 24×2×0,4** **S-02YS(St)CY – 100 Ω 4×(24×2×0,4)** **S-02YS(St)H – 100 Ω 24×2×0,4** **S-02YS(St)CH – 100 Ω 4×(24×2×0,4)**	ZN-MADEX-15 and acc. DIN VDE 0813 Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	All cables can be made with PVC or LSOH jacket. Jacket colour: standard grey.
Application	Cables are intended for use in indoor telecommunication installation suitable for xDSL systems with frequency range up to 10MHz, features high resistance against electromagnetic interference. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C cables with LSOH jacket -10°C ÷ +50°C Min. permissible bending radius: 10 x outer diameter of the cable.		

Telecommunication station cables with PE insulation and PVC sheath, screened, 120Ω

Symbol of cable		Standard	PKWiU	Remarks:
S-02YS(St)CY – 120 Ω **S-02YS(St)CH – 120 Ω**	2×2×0,4(c) 4×2×0,4(c) 8×2×0,4(c) 4×2×0,6(c) 8×2×0,6(c) 12×2×0,6(c)	acc. DIN VDE 0813	31.30.13 – 30.54	Sheath colour: grey.
H-HTKSXpekw – 120 Ω	4x(2x2x0,4c)	acc. DIN VDE 0813 Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Sheath colour: grey.
Application	Telecommunication high frequency cables for fixed wiring in telecommunication, electronic, measuring and data processing equipment used for transmission up to 10MHz. Resistance against electromagnetic interference. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket 0°C ÷ +50°C cables with LSOH jacket -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.			

Control cable with PVC insulation and sheath, screened

Symbol of cable	Standard	PKWiU	Remarks:
EIB-BUS – 2×2×0,8	PN-92/T-90321	31.30.13 – 30.54	Sheath made from PVC with oxygen index not less than 29 Sheath colour: green
Application	Cable used for the transmission of bus signals for intelligent systems in buildings. The cable ensure perfect communication in accordance with EIB regulations (European installation bus). It can be installed over, in, or below the plaster, in pipes and pipe ducts, in dry, moist, and wet areas, as well as outside, provided that is protected against direct exposure to the sun. Wiring together with high-power supply cables is possible without limitation. Can be used to control lighting, blinds, heating, ventilation, indicator boards, etc.		

Low frequency station cables for safety systems, screened and unscreened

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
YnTKSY	(1 ÷ 10) × 2	0,5; 0,6; 0,8; 1,0	ZN-MADEX-06 Certificate CNBOP Nr2409/2007 Fire performance test acc. IEC 60332-1	31.30.13 – 30.54	Sheath colour: red.
YnTKSYekw 120		0,5; 0,6; 0,8			
YnTKSYekw 100 YnTKSYekw 150		1,0			
Application	Cables for fixed wiring in control and signal processing equipment, especially for fire safety installations. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: -15°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Halogen-free low frequency station cables for safety systems, screened and unscreened

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
HTKSH HTKSHekw	(1 ÷ 10) × 2	0,5 0,6 0,8 1,0	ZN-MADEX-06	31.30.13 – 30.54	Low smoke zero halogen flame retardant insulation and sheath, oxygen index not less than 35. Sheath colour: red.
Application	Flame resistant, halogen-free cables for fixed wiring in control and signal processing equipment, especially for fire safety installations. The static screen prevents strong interference impulse. Suitable for fixed installation everywhere, where in case of fire human life and material assets are to be protected and a safety consciousness take a special significance, e.g. in industrial complexes, public buildings, hotels, airports, under ground railway networks, hospitals. Cables are not intended for direct connection to mains electricity supply. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Fire warning, halogen-free installation cable, screened and unscreened

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
HTKSH-PH90 **HTKSHekw- PH90**	(1 ÷ 5) × 2	0,8 1,0 1,4 1,8 2,3	ZN-MADEX-08 Certificate CNBOP Nr2430/2007	31.30.13 – 30.54	Insulation are made from mica tape plus low smoke zero halogen flame resistant material. Low smoke zero halogen flame resistant sheath , oxygen index not less than 35 Sheath colour: red.
Application	The halogen-free installation cables with improved characteristics in the case of fire are used for the telephone transmission, measurement and control technology in fire safety systems. The static screen protects the transmission circuits against outer electrical interferences. A fire propagation is prevented through high oxygen index of the insulation material and produce no corrosive gases in case of fire. These cables are suitable for fixed installation in areas with danger of fire, in dry and damp environments as well as on, in and under plaster. Cables are not intended for direct connection to mains electricity supply. Corrosiveness of combustion gases according to EN 50267-2-2 / IEC 60754-2 Smoke density according to EN 61034-1+2 / IEC 61034-1+2 Insure circuit integrity of 90 minutes according to EN 50200 Temperature range during installation: -10°C ÷ +50°C				

Telecommunications low frequency indoor cables

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
TKSY	1 × 2	0,5(c) 0,6(c) 0,8(c)	PN-92/T-90321	31.30.13 – 30.54	Cables sheath are made from PVC (Y) or low smoke zero halogen flame retardant material (H). Sheath colour: grey.
YTKSY **YTKSYekw**	(1 ÷ 53) × 2	0,5(c) 0,6(c) 0,8(c)	PN-92/T-90321		
YTKSYekp	(2 ÷ 21) × 2		PN-92/T-90323		
HTKSY **HTKSYekw**	(1 ÷ 53) × 2		PN-92/T-90321		
Application	Subscriber cables used for telecommunication inside plant and equipment and in electronic devices employing similar techniques. Suitable for installation in dry or dump installation, on or under plaster. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: cables with PVC jacket -15°C ÷+50°C cables with LSOH jacket -10°C ÷+50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

High frequency station cables with pairs individually shielded, PE insulation and PVC sheath

Symbol of cable	Cable structure	Standard	PKWiU	Remarks:
YTKSXekp **YnTKSXekp** **YTKSXpekp** **YnTKSXpekp**	1 × 2 × 0,4(c)	ZN-MADEX-13	31.30.13 – 30.54	Construction of core in 8 pairs cable: shielded and sheathed pairs stranded as 1 + 7, identification of pairs done by means of digital number printed in black on the sheath. Sheath colour: grey.
Y-YTKSXekp **Yn-YTKSXekp** **Y-YTKSXpekp** **Yn-YTKSXpekp**	8 × (1 × 2 × 0,4(c))			
Application	High frequency subscriber cables used for telecommunication inside plant and equipment and in electronic devices employing similar techniques. Signal frequency spectrum up to 1MHz. Cables are not intended for direct connection to mains electricity supply. Range of operating temperature: from -40°C to +70°C in case of lack of mechanical hazard from -10°C to +50°C in case of mechanical damages hazard Min. permissible bending radius: 10 × outer diameter of the cable.			

Low frequency terminating cables, with PVC insulation and sheath, screened

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
YTKZYekw	5 ÷ 50 × 4	0,5(c)	PN-92/T-90322	31.30.13 – 30.54	Sheath colour: grey or black.
Application	Cables used for terminating local telecommunication cables in switchboard station operating in moderate climate. Cables are not intended for connection of power devices. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: -15°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.				

Low frequency station cables with increased resistance for flame propagation

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
NTKSXekw NzTKSX	2 ÷ 48×2	0,8	ZN–MADEX-20 Certificate BBJ Z/12/14/07	31.30.13 – 30.54	Flame resistant according to EN 60332-3-22 / IEC 60332-3-22. Corrosiveness of combustion gases according to EN 50267-2-2 / IEC 60754-2 Smoke density according to EN 61034-1+2 / IEC 61034-1+2.
Application	Subscriber cables used for telecommunication inside plant and equipment and in electronic devices employing similar techniques. Suitable for installation in dry or dump installation, on or under plaster, in the areas where fire hazard are high. Should be installed according to detailed user's regulations. Flame retardant outer sheath with low emission of smoke, toxic and corrosive fumes. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 x outer diameter of the cable.				

Jumper wire

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
TDY TDX	1 2 3 4	0,4(c) 0,5(c) 0,6(c) 0,8(c)	PN-91/T-90200 PN-91/T-90205 PN-91/T-90206	31.30.13 – 50.11	The symbol of wire contains a letter which means symbol of conductor insulation colour. The wires with tinned conductor have in their symbols small letter (c). The example of symbol of wire type TDY, with single tinned copper conductor (c) nominal diameter 0,5mm and red coloured insulation (k): TDY (k) 1×0,5c mm.
Y		0,6 0,8	VDE 0815		
Application	Jumper wires are used for fixed internal connection in telecommunication and electronic devices. Jumper wires can not be used for connection in power devices.				

Telecommunication building cords with PVC insulation and sheath, screened or unscreened

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
YTDY YTDYekw	1 ÷ 12	0,5(c) 0,8(c)	PN-91/T-90200 PN-91/T-90206	31.30.13 – 50.11 31.30.13 – 50.12	Sheath colour: standard white, other colours can be made according to customer requirement.
Application	Used for telecommunication inside installation and equipment devices. Suitable for installation in dry or dump installation, on or under plaster. Can not be used for connection in power devices.				

Telephone installation cable, unit type

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
J-YYe...Bd	2 ÷ 50×2	0,6 0,8	acc. DIN VDE 0815	31.30.13 – 30.42	Conductors identification acc. IEC 708 – 1 Amendment A for 5×4 unit. Y – means PVC insulation and sheath. H – means halogen-free insulation and sheath. Bd – unit type cable
J-Y(St)Y...Bd J-H(St)H...Bd					
Application	The installation cables are used for the telephone transmission, measurement and control technology and are suitable for permanent installation on and under plaster in dry and damp rooms and for permanent installation on external walls. Can not be buried directly in the ground or nailed to the wall. The static screen (St) protects the transmission circuits against outer electrical interferences. The halogen-free cables produce no corrosive and toxic gases in case of fire. Cables are not intended for connection of power devices. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: cables with PVC jacket -15°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Telephone installation cable, layer type

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
J-Y(St)Y...Lg **J-H(St)H...Lg**	2 ÷ 50 × 2	0,6 0,8	DIN VDE 0815	31.30.13 – 30.42	Y – means PVC insulation and sheath. H – means halogen-free insulation and sheath. Lg – layer construction of cable core.
Application	The installation cables are used for the telephone transmission, measurement and control technology and are suitable for permanent installation on and under plaster in dry and damp rooms and for permanent installation on external walls. Can not be buried directly in the ground or nailed to the wall. The static screen (St) protects the transmission circuits against outer electrical interferences. The halogen-free cables produce no corrosive and toxic gases in case of fire. Cables are not intended for connection of power devices. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: cables with PVC jacket -15°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.				

Telephone installation cable, unit type, with flexible conductors

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
RD-Y(St)Y...Bd **RD-H(St)H...Bd**	2, 4, 8, 12, 16, 24, 32, 48	0,5 mm² 1,0 mm²	DIN VDE 0815	31.30.13 – 30.42	Conductors identification acc. DIN VDE 0815. Y – means PVC insulation and sheath H – means halogen-free insulation and sheath. Bd – unit type cable.
Application	Data transmission cables used in measurement and control technology such as in control rooms of industrial plants and power stations. The cables serves for transmission of analog and digital signals up to frequencies of approx. 10 kHz. The static shield (St) protects the transmission circuits against outer electrical interferences Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: cables with PVC jacket -15°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Instrumentation cables, unit type, with flexible conductors

Symbol of cable	Number of elements	Conductor's cross-section	Standard	PKWiU	Remarks:
RE-2Y(St)Y **RE-2Y(St)Yv**	2 ÷ 36 × 2	0,5 mm² 1,3 mm²	acc DIN VDE 0815 and 0816 IEC 60228	31.30.13 – 30.42	Jacket colour: black. Yv – PVC reinforced outer jacket. Cable with a blue outer jacket are used for intrinsic safe installations.
Application	Instrumentation cables are used in process control and data processing systems to ensure optimum data transmission at a mean transmission rate of up to 200 kbits/s. Adjusted twist lengths of pairs ensure enhanced crosstalk attenuation. Low mutual capacitance and attenuation allow extended transmission distances and short pulse times to be realized. The static screen protects the pairs against external electrical interference. Instrumentation cables are suitable for fixed installations in dry and moist rooms. Cables intended for installation In open spaces should have reinforced outer jacket. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: 0°C ÷ +50°C, cables with LSOH jacket -10°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.				

Telecommunication cables with PVC insulation and sheath, screened, unit type

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
S-Y(St)CY	16 × 2 32 × 2 36 × 2 64 × 2	0,4	acc DIN VDE 0813	31.30.13 – 30.54	Sheath colour: grey.
Application	Cables used for inside installation intended for interconnection of: transmission, telecommunication and data processing equipment. Cables are not intended for connection of power devices. Temperature range during working: -30°C ÷ +70°C. Temperature range during installation: -15°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Broadcasting cords

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
RPX XRPX YRPX YnRPX	1×2 1×4	0,9 1,2	ZN-MADEX-05	31.30.13 – 30.82	X – means PE insulation or sheath. Y – means PVC sheath. Yn – means flame retardant PVC sheath.
Application	Cords for internal broadcasting installation, inside building as well for underground installations. Temperature during installation not lower than 0°C in case of PVC sheathed cords, -10°C in case of other cords Min. permissible bending radius: 10 x outer diameter of the cable.				

Local quad, unit type, filled cables with foam-skin polyethylene insulation and moisture barrier polyethylene sheath

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XzTKMXpw	5 ÷ 250×4 5 ÷ 150×4 5 ÷ 100×4	0,5 0,6 0,8	PN-92/T-90335 PN-92/T-90336	31.30.13 – 30.52	Xp – means foam-skin PE insulation. Xz – means moisture barrier polyethylene sheath. w – means jelly filling of cable core.
Application	Local cable networks, suitable for pulling in ducts or directly buried in ground, where mechanical stresses are likely to occur. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Local quad, unit type cables with polyethylene insulation and moisture barrier polyethylene sheath

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
A-2Y(L)2Y.... St III Bd A-2YF(L)2Y...St III Bd	(2 ÷ 200)×2 (2 ÷ 100)×2	0,6 0,8	acc. DIN VDE 0816 part 1	31.30.13 – 30.52	Conductors identification acc. IEC 708 – 1 Amendment A for 5×4 unit 2Y – means PE insulation or sheath. L – means moisture barrier. F – means jelly filling of cable core. St III – quads. Bd – unit type cable.
Application	Local cable networks, suitable for pulling in ducts or directly buried in ground, where mechanical stresses are likely to occur. Cables type A-2Y(L)2Y only for pulling in ducts. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Local quad, unit type, filled cables with foam-skin polyethylene insulation and moisture barrier polyethylene sheath, armoured with steel tapes

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XzTKMXpwFtx	5 ÷ 200×4 5 ÷ 150×4 5 ÷ 100×4	0,5 0,6 0,8	PN-92/T-90335 PN-92/T-90336	31.30.13 – 30.52	Xp – means foam-skin PE insulation Xz – means moisture barrier polyethylene sheath w – means jelly filling of cable core Ft – means steel tapes armour x – means polyethylene outer sheath
Application	Local cable networks, suitable for direct burial in areas of high-risk mechanical damages. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C.				

Local quad, unit type cables with polyethylene insulation and moisture barrier polyethylene sheath, armoured with steel tapes

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
A-2Y(L)2YB2Y.... St III Bd **A-2YF(L)2YB2Y...St III Bd**	(2 ÷ 200) × 2 (2 ÷ 100) × 2	0,6 0,8	acc. DIN VDE 0816 part 1	31.30.13 – 30.52	Conductors identification acc. IEC 708 – 1 Amendment A for 5×4 unit. 2Y – means PE insulation or sheath. L – means moisture barrier. F – means jelly filling of cable core. B – means steel tapes armour. St III – quads. Bd – unit type cable.
Application	Local cable networks, suitable for or direct burial in areas of high-risk mechanical damages. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Self-supporting, local quad, unit type, filled cables

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XzTKMXpwn	5 ÷ 50 × 4	0,5 0,6	PN-92/T-90335 PN-92/T-90337	31.30.13 – 30.52	Xp – means foam-skin PE insulation. Xz – means moisture barrier polyethylene sheath. w – means jelly filling of cable core. n – means suspension strand of steel. wires covered with zinc.
	5 ÷ 35 × 4	0,8			
Application	Self-supporting cables are suitable for aerial installation in local outdoor networks. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.				

Local pair, filled cables with solid or foam-skin polyethylene insulation and moisture barrier polyethylene sheath

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XTKMXpw	1 ÷ 9 × 2	0,5 0,6 0,8	ZN-MADEX-07/01	31.30.13 – 30.52	X – means solid PE insulation. Xp – means foam-skin PE insulation. Xz – means moisture barrier. polyethylene sheath. w – means jelly filling of cable core.
XzTKMXpw			ZN-MADEX-07/02		
Application	Local cable networks, suitable for pulling in ducts or directly buried in ground, where mechanical stresses are likely to occur. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Self-supporting, local pair, filled cables

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XTKMXpwn	1 ÷ 9 × 2	0,5 0,6 0,8	ZN-MADEX-07/03	31.30.13 – 30.52	X – means solid PE insulation. Xp – means foam-skin PE insulation. Xz – means moisture barrier polyethylene sheath. w – means jelly filling of cable core. n – means suspension strand of steel wires covered with zinc.
XzTKMXpwn			ZN-MADEX-07/04		
Application	Self-supporting cables are suitable for aerial installation in local outdoor networks. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.				

Local pair, unfilled cables for broadband digital communications for indoor installations

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
NzTKMDXp – 120 Ω	(10 ÷ 100) × 2	0,5	ZN-MADEX-02 IEC 62255-2 category 60MHz. Fire performance test acc. IEC 60332-1.	31.30.13 – 30.52	Local pair, unfilled cables with foam-skin polyethylene insulation, unit type, with moisture barrier low smoke zero halogen flame retardant sheath. Sheath colour: grey.
Application	Cables intended for broadband digital communications indoor network, to be used for various communications which may use all pairs for bi-directional traffic. These cables are intended to operate with voltages and currents normally encountered in communication systems and are not intended to be used in conjunction with low impedance sources, for example, the electric power supplies of public utility mains.				

Local quad, unit type, unfilled cables with foam-skin polyethylene insulation, moisture barrier zero halogen flame retardant sheath, armoured with steel tapes

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
NzTKMXpFtN	5 ÷ 100 × 4	0,5 0,6 0,8	ZN-MADEX-19 Certificate BBJ Z/12/13/07 Fire performance test acc. IEC 60332-3-22	31.30.13 – 30.52	Xp – means foam-skin PE insulation. Nz – means moisture barrier halogen free lame retardant sheath. Ft – means steel tapes armour. N – means halogen free lame retardant outer sheath.
Application	Local cable networks, suitable for direct burial in areas of high fire hazard and high-risk mechanical damages. Should be installed according to detailed user's regulations. Flame retardant inner and outer sheath with low emission of smoke, toxic and corrosive fumes. Corrosiveness of combustion gases according to EN 50267-2-2 / IEC 60754-2 Smoke density according to EN 61034-1+2 / IEC 61034-1+2 Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Local pair, filled cables, with foam-skin polyethylene insulation and moisture barrier polyethylene sheath, for broadband digital communications

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XzTKMDXpw – 120 Ω	(5 ÷ 200) × 2	0,5	ZN-MADEX-02; IEC 62255-3 category 60MHz	31.30.13 – 30.52	Xp – means foam-skin PE insulation. Xz – means moisture barrier polyethylene sheath. w – means jelly filling of cable core. n – means suspension strand of steel wires covered with zinc. Ft – means steel tapes armour
XzTKMDXpwn – 120 Ω	(5 ÷ 50) × 2				
XzTKMDXpwFtx – 120 Ω	(5 ÷ 200) × 2				
Application	Cables intended for high bit rate digital access outside telecommunications networks, to be used for various communications which may use all pairs for bi-directional traffic. Suitable for pulling in ducts or directly buried in ground, where mechanical stresses are likely to occur. Self-supporting cables (XzTKMDXpwn) are suitable for aerial installation. Armoured cables can be installed directly in the burial. These cables are intended to operate with voltages and currents normally encountered in communication systems and are not intended to be used in conjunction with low impedance sources, for example, the electric power supplies of public utility mains. Temp. range during working: -20°C ÷ +70°C. Temp. range during installation: -10°C ÷ +50°C. Min. permissible bending radius: 10 x outer diameter of the cable. Maximal pulling force of cable: 50N × min. cross-section of all conductors in mm².				

Telecommunication mining cables with increased resistance for flame propagation

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
NTKGXFtN	5 ÷ 50 × 2	0,8	ZN-MADEX-21 Certificate BBJ Z/12/1/08 Fire performance test acc. IEC 60332-3-22	31.30.13 – 30.72	Xp – means foam-skin PE insulation. Nz – means moisture barrier halogen free lame retardant sheath. Ft – means steel tapes armour. N – means halogen free lame retardant outer sheath.
Application	Cables intended for telecommunications networks in mines and underground coalmines. Flame retardant inner and outer sheath with low emission of smoke, toxic and corrosive fumes. Corrosiveness of combustion gases according to EN 50267-2-2 / IEC 60754-2. Smoke density according to EN 61034-1+2 / IEC 61034-1+2. Cables are not intended for direct connection to mains electricity supply. Temperature range during working: -20°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.				

Alarm and signal cables with polyethylene insulation and sheath, filled

Symbol of cable	Number of elements	Diameter of wire	Standard	PKWiU	Remarks:
XzKAXwekw	2 ÷ 10 × 2	0,8	acc PN-92/T-90335 PN-92/T-90336	31.30.13 – 30.79	X – means solid PE insulation Xz – means moisture barrier polyethylene sheath. w – means jelly filling of cable core ekw – means screen of Al/PET tape + drain wire. L – means multi-wire conductors.
Application	Cables for use in alarm and signal systems, which can be exposed to electromagnetic interference. Suitable for pulling in ducts or directly buried in ground. Temperature range during working: -40°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.				

Alarm and signal cables with polyethylene insulation and sheath, filled

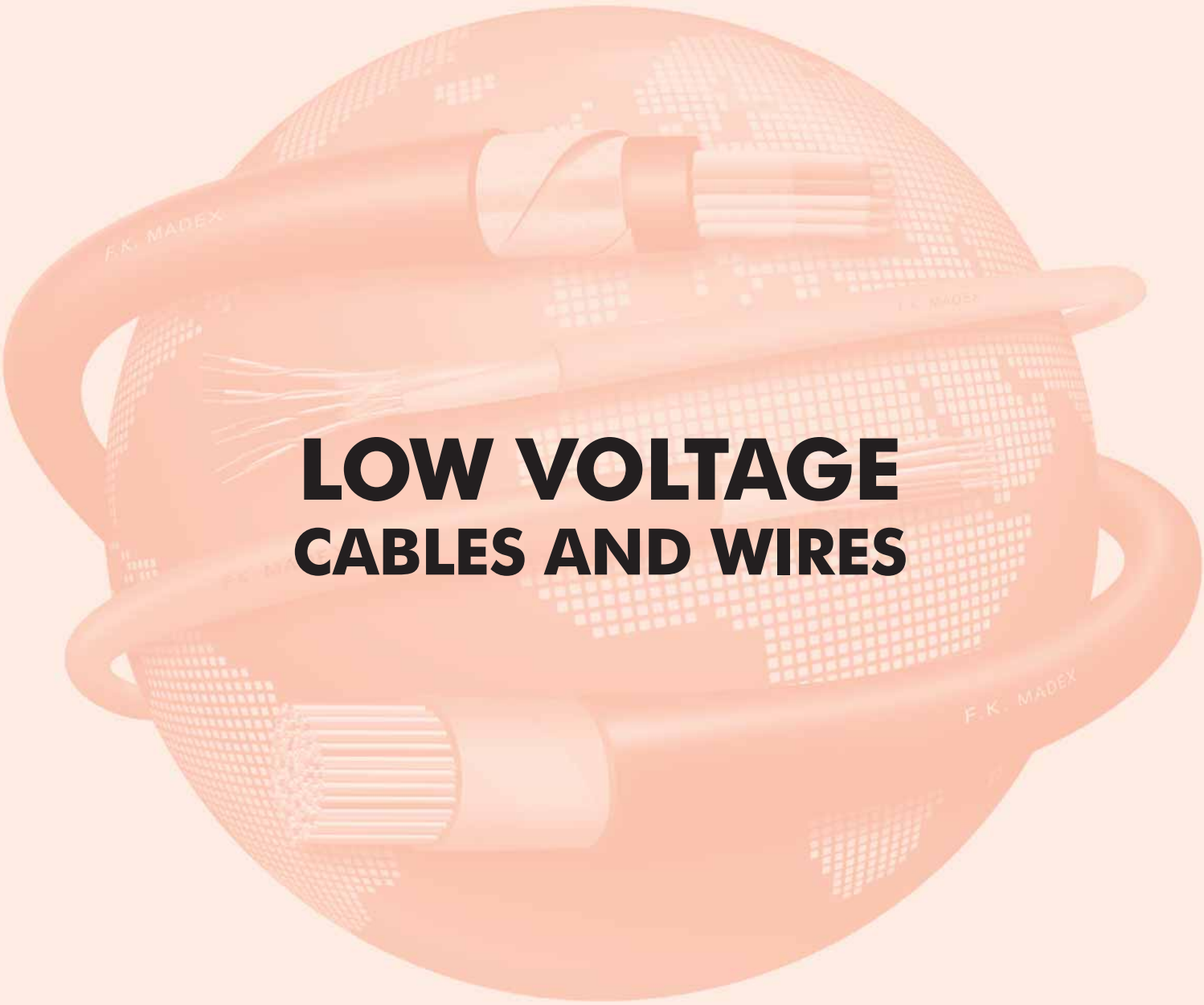
Symbol of cable	Number of elements	Standard	PKWiU	Remarks:
XzKSLXwekw	2 × 1,5 4 × 2,5	acc PN-93/E-90403	31.30.13 – 30.79	X – means solid PE insulation Xz – means moisture barrier polyethylene sheath. w – means jelly filling of cable core ekw – means screen of Al/PET tape + drain wire. L – means multi-wire conductors.
Application	Cables for use in alarm and signal systems, which can be exposed to electromagnetic interference. Suitable for pulling in ducts or directly buried in ground. Temperature range during working: -40°C ÷ +70°C. Temperature range during installation: -10°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable.			

High frequency coaxial cables

Symbol of cable	Standard	PKWiU	Remarks	Detail application
YWDXek 75-0,59/3,7 **XWDXek 75-0,59/3,7**	ZN-MADEX-11	31.30.12 – 00.11	Y – PVC sheath. X – black PE sheath. H – halogen free flame retardant sheath.	RTV, CATV
YWDXpek 75-0,8/3,7 **XWDXpek 75-0,8/3,7** **HWDXpek 75-0,8/3,7**				RTV, CATV, SAT
YWDXpek 75-1,0/4,8 **XWDXpek 75-1,0/4,8** **HWDXpek 75-1,0/4,8**				RTV, CATV, SAT
YWDXpek 75-1,05/4,8 **XWDXpek 75-1,05/4,8** **HWDXpek 75-1,05/4,8**				RTV, CATV, SAT
YWDXpek 75-1,05/5,0 **XWDXpek 75-1,05/5,0** **HWDXpek 75-1,05/5,0**				RTV, CATV, SAT
YWDXpek 75-1,1/4,8 **XWDXpek 75-1,1/4,8** **HWDXpek 75-1,1/4,8**				RTV, CATV, SAT
YWD 75-0,59/3,7 **XWD 75-0,59/3,7**				RTV, TVP
YWDX 50-0,7/2,5				CB, CT
RG 6 75Ω (braid covering ≥ 60% and 95%)				RTV, CATV, SAT
RG 59 75Ω (braid covering ≥ 60% and 95%)				RTV, CATV
RG 59 75Ω – LSOH (braid covering ≥ 60% and 95%)				RTV, CATV
YWL 50-0,96/2,95 **XWL 50-0,96/2,95**		31.30.12 – 00.12		CB, CT
MH 155 50Ω				CB, CT
Application	The halogen-free cables produce no corrosive and toxic gases in case of fire. Intended for use in buildings with high fire hazard. Cables are not intended for connection of power devices. Temperature range during working: -20°C ÷ +60°C. Temperature range during installation: 0°C ÷ +50°C. Min. permissible bending radius: 5 × outer diameter of the cable.			

High frequency coaxial cables with moisture barrier polyethylene sheath

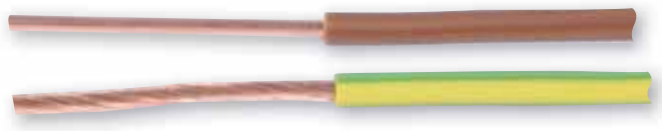
Symbol of cable	Standard	PKWiU	Remarks:
XzWDXpek 75-1,05/4,8	ZN-MADEX-11	31.30.12 – 00.11	Cables are water protected by jelly filling and moisture barrier polyethylene sheath. Resistant for UV radiation.
XzWDXpek 75-1,05/5,0			
Application	Cables are not intended for RTV, Sat and CATV outside installation. Temperature range during working: -20°C ÷ +60°C. Temperature range during installation: -10°C ÷ +50°C. Min. permissible bending radius: 5 × outer diameter of the cable.		



LOW VOLTAGE
CABLES AND WIRES

Single core non-sheathed cables, PVC insulated for fixed wiring

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
DY H05V-U	300/500	0,5 ÷ 4 0,5 ÷ 1	1	PN-87/E90054 PN-HD 21.3	31.30.13 – 75.11	Plain copper conductors class 1 acc IEC 60228
DY H07V-U	450/750	1,0 ÷ 10 1,5 ÷ 10	1	PN-87/E90054 PN - HD 21.3	31.30.13 – 75.11	
LY H05V-R	300/500	0,35 ÷ 6 0,5 ÷ 1	1	PN-87/E90054 PN - HD 21.3	31.30.13 – 75.11	Stranded copper wires class 2 acc IEC 60228
LY H07V-R	450/750	0,35 ÷ 240 1,5 ÷ 35	1	PN-87/E90054 PN - HD 21.3	31.30.13 – 75.11	
LgY H05V-K	300/500	0,35 ÷ 2,5 0,5 ÷ 1	1	PN-87/E90054 PN - HD 21.3	31.30.13 – 75.11	Stranded copper wires class 5 acc IEC 60228 cords can be also made with halogen free insulation as LgH or with oil and heat resistant PVC as LgYc
LgY H07V-K	450/750	1 ÷ 120 1,5 ÷ 35	1	PN-87/E90054 PN - HD 21.3	31.30.13 – 75.11	
LgYd	450/750	1 ÷ 120	1	PN-87/E90054	31.30.13 – 75.11	Stranded copper wires class 5 acc IEC 60228 PVC reinforced insulation (d)
Application	Cables used for energy supply, for the connection of portable equipments, switch cabinets, motors and transformers. Can be installed in conduits on and under plaster as well as in cable ducts. Heat resistant cables are intended for power current installation in places which are subject to direct contact with high temperature. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					



Polyvinyl chloride insulated and sheathed cables for fixed wiring

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YDY(żo)	300/500 450/750	1 ÷ 6 1,5 ÷ 10	2 ÷ 4 2 ÷ 5	PN-87/E90056	31.30.13 – 75.13	Plain copper conductors class 1 acc IEC 60228
HO5VV-U (equivalent to NYM J/O)	300/500	1,5 ÷ 10	2 ÷ 5	PN-HD 21.4	31.30.13 – 75.13	Plain copper conductors class 1 acc IEC 60228
YLY(żo)	600/1000	1 ÷ 50 1 ÷ 10	1 ÷ 4 5 ÷ 10	PN-87/E90056	31.30.13 – 75.13	Stranded copper wires class 2 acc IEC 60228
NYM J/O	300/500	16 ÷ 35	2 ÷ 5	PN-HD 21.4	31.30.13 – 75.13	Stranded copper wires class 2 acc IEC 60228
YDYp(-żo)	300/500 450/750	0,5 ÷ 6 1 ÷ 10	2 ÷ 4 2 ÷ 4	PN-87/E90060	31.30.13 – 75.13	Plain copper conductors class 1 acc IEC 60228
Application	Cables used for industrial and wiring purposes. Useable in the open, in dry, damp and wet environments in the open and concealed, as well as in masonry and in cement, not suitable for imbedding in solidified or compressed concrete. Outdoor use is only possible as long as the cable is protected against direct sunlight. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Halogen-free cables for fixed Installation 300/500 V

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
NHXMH - J(O)	300/500	1 ÷ 16	1 ÷ 7	DIN VDE 0250-214	31.30.13 – 75.13	Plain copper conductors class 1 acc IEC 60228 O-version: without green-yellow conductor. J-version: with green-yellow conductor insulation.
Application	Halogen-free cables with enhanced characteristics in case of fire are used for applications where harm to human life and damage to property must be prevented in the event of fire, e.g. in industrial installations, communal establishments, hotels, airports, underground stations, railway stations, hospitals, department stores, banks, schools etc. Suitable for installation in dry, damp or wet environments, for installation above, in and beneath plaster as well as in masonry walls and in concrete, not however for direct embedding in vibrated, compacted or tamped concrete. These cables are also suitable for outdoor applications. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

PVC insulated and sheathed flexible cable flat and round 300/300 V

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
H03VV-F (OMY)	300/300	0,5 ÷ 0,75	2 ÷ 4	PN-HD 21.5	31.30.13 – 75.21	Stranded copper wires class 5 acc IEC 60228.
H03VVH2-F (OMYp)		0,5 ÷ 0,75				
OMYp		0,5 ÷ 1,5		PN-91/E-90103		
Application	These cable types are especially suited for use on small appliances with low mechanical stress and for connection for light household appliances, e.g. kitchen utensils, desk lamps, floor lamps, vacuum cleaners, office machines, radios, etc. as far as this cable is admitted to the relevant specifications of the equipment. These cables are not permitted for use with cooking or heating apparatus. Not suitable for outdoor use or use of industrial or farmer machineries. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

PVC insulated and sheathed flexible cable 300/500 V

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
H05VV-F (OWY)	300/500	0,75 ÷ 4	2 ÷ 5	PN-HD 21.5	31.30.13 – 75.22	Stranded copper wires class 5 acc IEC 60228.
Application	These cables are suited for medium mechanical stress in damp and wet environments such as refrigerators, washing machines, spin dryers and other appliances, as long as it meets applicable equipment specifications. These cables are also suited for cooking and heating apparatus, provided that the cable does not come into direct contact with the hot parts of the apparatus or with any other heat source. Further applications of this cable include: Fixed installation in furniture, partition walls, decorative covering, and in the hollow spaces of prefabricated building parts. They are not suitable for outdoor use, industrial (except clothing manufacture) or farming applications. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C Min. permissible bending radius: 10 × outer diameter of the cable					

PVC insulated and sheathed flexible cable, oil resistant, screened or unscreened 300/500 V

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
H05VV5-F	300/500	0,5 ÷ 2,5	2 ÷ 61	PN-HD 21.13	31.30.13 – 75.22	Stranded copper wires class 5 acc IEC 60228 oil resistant to EN 60811-2-1.
H05VVC4V5-F	300/500	0,5 ÷ 2,5	2 ÷ 24	PN-HD 21.13	31.30.13 – 75.22	
Application	These cables are used for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms but are not suitable for open air. These are designed as control and connecting cables to machines, tool machineries, conveyor belts and production lines. These cables are not affected by the chemical influences. Cables for moist and wet rooms, specially used for machines in breweries, bottling plants and car washing stations. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Control cable, screened or unscreened 300/500 V

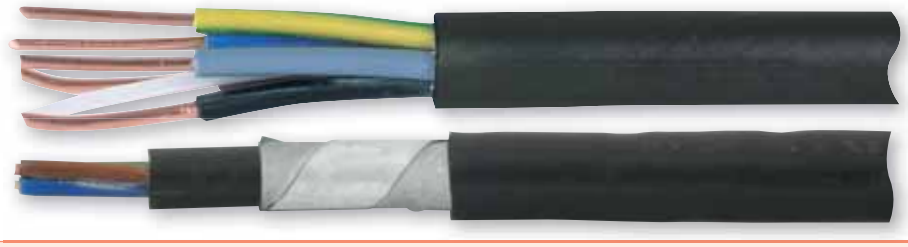
Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
LiYYnr	300/500	0,5 ÷ 1,5	2 ÷ 61	acc PN -HD 21.13	31.30.13 – 75.28	Stranded copper wires class 5 acc IEC 60228 conductors identification – numbers printed on black colour insulation.
LiYCYnr		0,5 ÷ 1,5	2 ÷ 24			
Application	Cables are used for transmission of data and impulses in measuring and regulation techniques, in electrical control circuits and for data transmission in computers. These cables are suitable for installation in moist areas as well as for outer use. High cover braid screen (C) deflects external electrical influences and ensures precise pulse transmission. Maximum permissible operating temperature at conductor: +70°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Unscreened control cables 300/500 V

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YStYnr(-żo)	300/500	0,75 ÷ 2,5	2 ÷ 61	ZN-MADEX-18	31.30.13 – 75.22	Stranded copper wires class 5 acc IEC 60228 conductors identification – numbers printed on black colour insulation.
Application	Control PVC cables are used for flexible connection with free movement but without tensile stress or forced movements in dry wet and moist areas but are not suitable for open air application. Temperature range during working: -20°C ÷ +60°C for fixed installation -5°C ÷ +60°C for flexing installation. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 15 x outer diameter of the cable.					

Power cables PVC insulated and sheathed 0,6/1 kV

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YKY(-żo) (equivalent to NYY-O and NYY-J) **YKYFty(-żo)**	0,6/1 kV	1 ÷ 240	1	PN-HD 603 S1 PN-HD 627 S1 PN-93/E-90401	31.30.13 – 73.39	Y – means PVC insulation and sheath. Ft – means steel tapes armour. (-Żo) – version: with green-yellow conductor insulation.
		1 ÷ 50	2 ÷ 5			
Application	Power cables for energy supply. Cables are intended for use in fixed installations indoors, outdoors in ducts and directly in the ground. Cables armoured with steel tapes are designed for direct burial in areas of high-risk mechanical damages. For customer request cables can be made with flame retardant PVC sheath (YnKY) Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					



YKY(-żo)

YKYFty(-żo)

Power cables, PVC insulated and sheathed, screened 0,6/1 kV

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YKYekw (-żo) YKYektmy (-żo)	0,6/1 kV	1	1 ÷ 16	PN-HD 603 S1 PN-93/E-90401	31.30.13 – 73.39	ekw – screen of Al/PET tape on cable core. ektm – screen of Cu tape on filler sheath.
		2 ÷ 5	1 ÷ 16			
Application	Power cables for energy supply. Cables are intended for use in fixed installations indoors, outdoors in ducts and directly in the ground. Suitable for networks which can be exposed to electromagnetic interference. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Power cables cross-linked polyethylene (XLPE) insulated, unscreened or screened 0,6/1 kV

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YKXS(żo); YKCXS(żo) N2XY - (J/O); N2XCY - (J/O) N2XH - (J/O); N2XCH - (J/O)	0,6/1 kV	1	1,5 ÷ 240	PN-HD 603 S1 PN-HD 627 S1	31.30.13 – 73.39	O-version: without green-yellow conductor. J or (-żo) – version: with green-yellow conductor insulation.
		2 ÷ 5	1,5 ÷ 50			
Application	Power cables for energy supply with enhanced operating temperature. Suitable for fixed installation in dry, damp or wet environments, in, above, on and beneath plaster as well as in concrete. These cables are suitable for outdoor applications and in underground by using in conduits or tubes ie areas where mechanical damages are not to be expected. Halogen-free power cables with enhanced characteristics in case of fire are used for applications where harm to human life and damage to property must be prevented in the event of fire, e.g. in industrial installations, communal establishments, hotels, airports, underground stations, railway stations, hospitals, department stores, banks, schools, theatres, multi-story buildings, process control centres etci. Maximum permissible operating temperature at conductor: +90°C. Maximum temperature for short circuit conditions: +250°C. Temperature range during installation: -10°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Low voltage signalling cables with PVC insulation and sheath, screened 0,6/1kV

Symbol of cable	Number of cores	Nominal conductor cross-section [mm²]	Nominal voltage Uo/U [V]	Standard	PKWiU	Remarks:
YKSYekwnr (-żo)	7 ÷ 61	1 ÷ 2,5	0,6/1 kV	PN-93/E-90403	31.30.13 – 73.39	nr – conductors identification – numbers printed on black colour insulation. ekw – screen of Al/PET tape on cable core.
	7 i 10	4				
Application	Cables are intended for use in primary power or control circuits in manufacturing and processing plants, primary feeders in industrial and commercial distribution systems, power supply station. May be used in static installations, indoors, outdoors in ducts and directly in the ground. Suitable for networks which can be exposed to electromagnetic interference. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Low voltage signalling cables with PVC insulation and sheath, with or without the armour 0,6/1kV

Symbol of cable	Number of cores	Nominal conductor cross-section [mm²]	Nominal voltage Uo/U [V]	Standard	PKWiU	Remarks:
YKSY(-żo)	7 ÷ 75	1 ÷ 1,5	0,6/1 kV	PN-93/E-90403 PN-HD 21.4	31.30.13-73.39	Conductors identification in each layer of cable core: marker – brown reference – blue remaining – natural green-yellow conductor placed in outer layer as reference conductor instead of blue.
	7 ÷ 48	1 ÷ 2,5				
	7 i 10	4 ÷ 10				
YKSYFty(-żo)	7 ÷ 48	1 ÷ 2,5				
	7 i 10	4 ÷ 10				
YKSYnr(-żo) (equivalent to NYY-O; NYY-J)	7 ÷ 75	1 ÷ 1,5				nr – conductors identification – numbers printed on black colour insulation.
	7 ÷ 48	1 ÷ 2,5				
	7 i 10	4				
YKSYFtynr(-żo)	7 ÷ 48	1 ÷ 2,5				
	7 i 10	4 ÷ 10				
Application	Cables are intended for use in primary power or control circuits in manufacturing and processing plants, primary feeders in industrial and commercial distribution systems, power supply station. May be used in static installations, indoors, outdoors in ducts and directly in the ground. Cables armoured with steel tapes are designed for direct burial in areas of high-risk mechanical damages. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

YKSYnr(-żo)

YKSYFty(-żo)

Low voltage signalling cables with flexible conductors

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YKSLYnr(-żo) YKSLYekwnr(-żo)	300/500 V	0,5 ÷ 2,5	2 ÷ 48	acc. PN-HD 21.13	31.30.13 – 75.28	Stranded copper wires class 5 acc IEC 60228. Conductors identification – numbers printed on black colour insulation.
YKSLYnr(-żo) YKSLYekwnr(-żo)	0,6/1 kV	0,75 ÷ 2,5	2 ÷ 48	acc. PN-93/E-90403		
Application	Cables are intended for use in primary power or control circuits in manufacturing and processing plants, primary feeders in industrial and commercial distribution systems, power supply station. May be used in static installations, indoors, outdoors in ducts and directly in the ground. Screened cables are suitable for areas which can be exposed to electromagnetic interference. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Low voltage signalling cables with flexible conductors, paired

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
YKSLY-pnr(-żo) YKSLYekw-pnr(-żo)	300/500 V	0,5 ÷ 2,5	2 ÷ 48	acc. PN-HD 21.13	31.30.13 – 75.28	Stranded copper wires class 5 acc IEC 60228. Conductors identification – numbers printed on black and brown colour insulation in each pair.
YKSLY-pnr(-żo) YKSLYekw-pnr(-żo)	0,6/1 kV	0,75 ÷ 2,5	2 ÷ 48	acc. PN-93/E-90403		
Application	Cables are intended for use in primary power or control circuits in manufacturing and processing plants, primary feeders in industrial and commercial distribution systems, power supply station. May be used in static installations, indoors, outdoors in ducts and directly in the ground. Screened cables are suitable for areas which can be exposed to electromagnetic interference. Maximum permissible operating temperature at conductor: +70°C. Maximum temperature for short circuit conditions: +160°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Control cables with flexible conductors, PVC insulated and sheathed, screened

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
PFSP (H05VVCV – K)	300/500 V	0,75	2 ÷ 28	HD 627-4 B1 IEC 60332-1	31.30.13 – 75.28	Stranded copper wires class 5 acc IEC 60228.
Application	Control PVC cables are used for flexible connection with free movement but without tensile stress or forced movements in dry wet and moist areas. May be used in static installations, indoors, outdoors in ducts and directly in the ground, suitable for areas which can be exposed to electromagnetic interference. Maximum permissible operating temperature at conductor: +70°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

Halogen-free control cables with flexible conductors, screened

Symbol of cable	Nominal voltage Uo/U [V]	Nominal conductor cross-section [mm²]	Number of cores	Standard	PKWiU	Remarks:
IFSI	300/500 V	0,75	2 ÷ 28	HD 627-4 B1 IEC 60332-3	31.30.13 – 75.28	Stranded copper wires class 5 acc IEC 60228.
Application	Control PVC cables are used for flexible connection with free movement but without tensile stress or forced movements in dry wet and moist areas. May be used in static installations, indoors, outdoors in ducts and directly in the ground, suitable for areas which can be exposed to electromagnetic interference and where harm to human life and damage to property must be prevented in the event of fire. Maximum permissible operating temperature at conductor: +70°C. Temperature range during installation: -5°C ÷ +50°C. Min. permissible bending radius: 10 × outer diameter of the cable.					

FABRYKA KABLI MADEX

QUACERT

CERTIFICATE

DIN EN ISO 9001:2008

FABRYKA KABLI MADEX

FABRYKA KABLI MADEX SPÓŁKA JAWNA
STEFANÓWKA, ul. ŻURAWIA 96
05-462 WIĄZOWNA

has introduced for

development, production and selling of telecommunication, energy cables, data and low voltage power cables

A quality management system complying with the requirements of the above-mentioned norm.
Proof of this has been furnished during a certification audit on 27 and 28 August 2009.

First certification: 1997
Period of validity: 2009/09/14 - 2012/09/13
Registration number: QC-QM-Z-97/04-001

Zertifiziert durch QUACERT DIN EN ISO 9001

TGA-ZM-05-95-60
TGA-ZM-05-95-00

Schwäbisch Gmünd, 15 September 2009

Management

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QUACERT

CERTIFICATE

DIN EN ISO 14001:2005

FABRYKA KABLI MADEX

FABRYKA KABLI MADEX SPÓŁKA JAWNA
STEFANÓWKA, ul. ŻURAWIA 96
05-462 WIĄZOWNA

has for

development, production and selling of telephone, computer cables and energy cables

Introduced in their company an environmental management system complying with the requirements of the above-mentioned norm.
Proof of this has been furnished during a certification audit on 27 - 28 August 2009.

First certification: 2000
Validity period: 16-09-09 - 15-09-12
Registration number: QC-UM-Z-97/04-001

Zertifiziert durch QUACERT DIN EN ISO 14001

TGA-ZM-05-95-60
TGA-ZM-05-95-00

Schwäbisch Gmünd, 14 October 2009

Management

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THIRD PARTY TESTING 3P

Compliance Statement

Unscreened Category 6
ISO/IEC, EN & TIA/EIA Communication Cable

Madex Identification UTP 4PR AWG23 Cat. 6
Category 6, Unscreened
100 Ω, 4 Twisted Pairs, 23 AWG, Flame Retardant, Copper Cable

Fabryka Kabli Madex s.j.
Stefanówka 4B
05-462 Wiązowna, Poland

[illegible]

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