

Selection table flexible control cable

| Operational criteria | | Cable and conductor description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------------------|---|-------------|--------------|----------------|--------------------|--------|----------------|-------------|---------------|--------------------|--------|--------|--------|---------------|---------------|-------|-------|--------|-----------|--------------------|------------|--------------|--------|-----------|------------|---------------|---------|-------------|---|---|---|
| △ fixed installation ▲ fixed installation/flexing ▲ flexing | | JZ-500 | JZ-500 COLD | JZ-500 black | Single 600-J/O | Single 600-CY -J/O | JZ-600 | JZ-500-C black | JZ-600-Y-CY | JZ-600 UL/CSA | JZ-600-Y-CY UL/CSA | JZ-750 | JB-500 | JB-750 | JZ-500 orange | JB-750 yellow | SY-JZ | SY-JB | JZ-602 | JZ-602-CY | JZ-602 PUR DC / AC | JZ-602-PUR | JZ-602-C-PUR | JZ-603 | JZ-603-CY | JZ-500 PUR | JZ-500-FC-PUR | PUR6-JZ | F-C-PUR6-JZ | | | |
| Page | | A6 | A8 | A9 | N120 | N121 | A16 | A24 | A36 | N10 | N20 | A14 | A21 | A22 | A10 | A23 | A34 | A40 | N7 | N17 | N48 | N46 | N51 | N9 | N19 | A43 | A52 | A44 | A54 | | | |
| Technical Data | Standards | according to DIN / VDE | ● | ● | | | ● | ● | ● | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | ● | ● | ● | ● | | |
| | | adapted with VDR Reg No. | ● | | | | | | | | | | | ● | | ● | | ● | ● | | | | | | | | | | | | | |
| | | adapted with HAR approbation | | | | | | | | | | | | | | | | | | | | | | | | ● | ● | | | | | |
| | | adapted with UL approbation | | | | ● | ● | | | | ● | ● | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | | adapted with CSA approbation | | | | ● | ● | | | | ● | ● | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Temperature range | + 100 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | + 90 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | + 80 °C | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | |
| | | + 75 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | + 70 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | + 60 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | - 5 °C | | | | ▲ | ▲ | | ▲ | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ |
| | | - 15 °C | ▲ | | ▲ | | | ▲ | | ▲ | | | | | ▲ | | | | ▲ | ▲ | | | | | | | | | | | | |
| | | - 20 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | - 25 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - 30 °C | | ▲ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - 40 °C | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | |
| | - 50 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Nominal voltage | 250 V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 300 / 300 V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 300 / 500 V | | ● | ● | ● | | | | ● | | | | | ● | | ● | | ● | ● | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| 600 V acc. UL/CSA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 450 / 750 V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 600 / 1000 V | | | | | ● | ● | ● | | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | |
| Cable structure | Core insulation | PVC / special PVC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | | PUR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | special material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | rubber | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Core identification | numbering according to DIN VDE 0293 | ● | ● | ● | | | ● | ● | ● | ● | ● | ● | | | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | | colour code according to DIN VDE 0293 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | JB colour code (varicoloured cores) | | | | ● | ● | | | | | | | ● | ● | | | ● | | | | | | | | | | | | | | |
| | Screening | Cu-braiding | | | | ● | | | | ● | | ● | | | | | | | | | ● | | | | ● | | | | | | | |
| | | steel wire braiding | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Outer sheath | PVC / special PVC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | | PUR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | special material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Sheath colour | grey | ● | | | | | | | | | | ● | ● | ● | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | | black | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | |
| orange | | | | | | | | | | | | | | | | ● | | | | | | | | | | | | | | | | |
| yellow | | | | | | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| green | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| blue | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| transparent | | | | | | | | | | | | | | | | | ● | ● | | | | | | | | | | | | | | |
| Application | Application in drag chains | see selection table cable in drag chains / prefix page 30 to 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | for intrinsic safety power circuit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | warning indication | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | interlocking purposes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | open air | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | ● | ● | ● | ● | | |
| Properties | halogen-free | see selection table flexible control cable halogen-free | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | chemicals resistant | see selection table chemical resistance in chapter X page X 64 and X 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | EMV-preferred type | | | | | ● | | | ● | ● | | | | | | | | | | | ● | | ● | | ● | | ● | ● | ● | | | |
| | resistant to weathering effects | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | ● | ● | ● | ● | | |
| | abrasion resistance | | | | | | | | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | | |

Selection table flexible control cable

| Cable and conductor description | | | | | | | | | | | | | | | | | Operational criteria | | | | | | | | | | | | | |
|---|------------|---------------|---------|-----------|------------|------------|--------------------|--------|-----------|----------------|------------------|------------------|--------------------|-------|----------|----------|--|---------------------|----------------|-----------------|---------|---------|---------|----------------------|--------------------------|---------------------------|-----------------|-------------------|-----------------|-------------------|
| Y0-C-PUR0-JZ | JZ-600 PUR | JZ-600-YC-PUR | PUR-750 | PUR-C-PUR | PUR-ORANGE | PUR-YELLOW | H05BQ-F / H07 BQ-F | UNIPUR | UNIPUR-CP | BIOFLEX-500-JZ | BIOFLEX-500-JZ-C | KOMPOFLEX-JZ-500 | KOMPOFLEX-JZ-500-C | OZ-BL | OZ-BL-CY | H05VV5-F | (H)05VV5-F | H05VVCAV5-K | (H)05VVCAV5-K | F-CY-OZ (L)Y-CV | F-CY-JZ | Y-CY-JZ | Y-CY-JB | JZ 604 TC TRAY CABLE | JZ 604-FCY TC TRAY CABLE | JZ 604 -YCY TC TRAY CABLE | TRAYCONTROL 500 | TRAYCONTROL 500-C | TRAYCONTROL 600 | TRAYCONTROL 600-C |
| A56 | N49 | N52 | A51 | A60 | A46 | A47 | A48 | A49 | A58 | A84 | A85 | A87 | A88 | A80 | A81 | A11 | A13 | A29 | A31 | A25 | A27 | A32 | A38 | N25 | N35 | N34 | N27 | N35 | N30 | N37 |
| | | | | | | | | | | | | | | | | | Page | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | according to DIN / VDE | Standards | Technical Data | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | adapted with VDR Reg No. | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | adapted with HAR approbation | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | adapted with UL approbation | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | adapted with CSA approbation | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | + 100 °C | Temperature range | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | + 90 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | + 80 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | + 75 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | + 70 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | + 60 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | - 5 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | -15 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | - 20 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | - 25 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | - 30 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | - 40 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | - 50 °C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 250 V | Nominal voltage | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 300 / 300 V | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 300 / 500 V | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 600 V acc. UL/CSA | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 450 / 750 V | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 600 / 1000 V | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | PVC / special PVC | Core insulation | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | PUR | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | special material | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | rubber | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | numbering according to DIN VDE 0293 | Core identification | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | colour code according to DIN VDE 0293 JB colour code (varicoloured cores) | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | Cu-braiding | Screening | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | steel wire braiding | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | PVC / special PVC | Outer sheath | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | PUR | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | special material | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | grey | Sheath colour | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | black | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | orange | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | yellow | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | green | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | blue | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | transparent | | | | | | | | | | | | | |
| see selection table cable in drag chains / prefix page 30 to 35 | | | | | | | | | | | | | | | | | Application in drag chains | Application | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | for intrinsic safety power circuit | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | warning indication | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | interlocking purposes | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | open air | | | | | | | | | | | | | |
| see selection table flexible control cable halogen-free | | | | | | | | | | | | | | | | | halogen-free | Properties | | | | | | | | | | | | |
| see selection table chemical resistance in chapter X page X 64 and X 65 | | | | | | | | | | | | | | | | | chemicals constant | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | EMV-preferred type | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | resistant to weathering effects | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | abrasion resistance | | | | | | | | | | | | | |



Selection table flexible control cable halogen-free

| Operational criteria | | Cable and conductor description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------------------|---|----------------|--------------|----------------|---------|-----------|--------|-----------|------------------|--------------------|------|-----------|-----------|-------------|------------------|---------------------|-----------------------|---------------------|---------------------|-----------------------|------------|--------------|------------|--------------|------------|--------------|-----------|-------------|------------------|--------------|--------------|---|---|---|
| △ fixed installation ▲ fixed installation / flexing ▲ flexing | | MEGAFLEX 500 | MEGAFLEX 500-C | MEGAFLEX 600 | MEGAFLEX 600-C | PUR 750 | PUR-C-PUR | UNIPUR | UNIPUR CP | KOMPOFLEX JZ-500 | KOMPOFLEX JZ-500-C | SIHF | SIHF/GL-P | SIHF-C-Si | SIHF UL/CSA | SIHF-C-Si UL/CSA | THERMIFLEX 180 EWKF | THERMIFLEX 180 EWKF-C | H05SS-F / H05SS-F-F | HELUTHERM 145 MULTI | HELUTHERM 145 MULTI-C | JZ 500 HMH | JZ 500 HMH-C | JB 750 HMH | JB 750 HMH-C | JZ 600 HMH | JZ 600 HMH-C | DATAFLAMM | DATAFLAMM-C | DATAFLAMM-C-PAAR | (H)03 Z1Z1-F | (H)05 Z1Z1-F | | | |
| | Page | N54 | N56 | N58 | N60 | A51 | A60 | A49 | A58 | A87 | A88 | E7 | E16 | E17 | N75 | N77 | E9 | E19 | E10 | E5 | E14 | A62 | A71 | A68 | A77 | A66 | A75 | B8 | B23 | B24 | A69 | A70 | | | |
| Technical Data | Standards | according to DIN / VDE | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | | adapted with VDR Reg No. | | | | | | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | adapted with HAR approbation | | | | | | | | | | | | | | | | | | | ● | | | | | | | | | | | | ● | ● | |
| | | adapted with UL approbation | ● | ● | ● | ● | | | | | | | | | | | ● | ● | | | | | | | | | | | | | | | | | |
| | | adapted with CSA approbation | ● | ● | ● | ● | | | | | | | | | | | ● | ● | | | | | | | | | | | | | | | | | |
| | Temperature range | + 180 °C | | | | | | | | | | | | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | | | | | | | | | | | | | | | |
| | | + 150 °C after UL/CSA | | | | | | | | | | | | | | | ▼ | ▼ | | | | | | | | | | | | | | | | | |
| | | + 145 °C | | | | | | | | | | | | | | | | | | | | ▽ | ▽ | | | | | | | | | | | | |
| | | + 120 °C | | | | | | | | | | | | | | | | | | | | ▼ | ▼ | | | | | | | | | | | | |
| | | + 90 °C | | | | | | | ▼ | ▼ | ▼ | ▼ | | | | | | | | | | | | | | | | | | | | | | | |
| | | + 80 °C | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | + 70 °C | | | | | | | | | | | | | | | | | | | | | | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | |
| | | + 5 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | ▲ | ▲ |
| | | - 5 °C | | | | | | ▲ | | | | | | | | | | | | | | | | | | | | | | | | | | ▲ | ▲ |
| | | - 15 °C | | | | | | | | | | | | | | | | | | | | | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | | | | | | |
| | | - 20 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | - 25 °C | | | | | | | | | | | | | | | | | ▲ | ▲ | | | | | | | | | | | | | | | |
| | | - 30 °C | ▲ | ▲ | ▲ | ▲ | | | | | | ▲ | ▲ | | | | | | | | | | | | | | | | | | | | | | |
| - 35 °C | | | | | | | | | | | | | | | | | | | | | | ▲ | ▲ | | | | | | | | | | | | |
| - 40 °C | △ | △ | △ | △ | ▲ | △ | ▲ | ▲ | △ | △ | | | | | | | | | | | | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | △ | | |
| - 50 °C after UL/CSA | | | | | | | | | | | | | | | ▲ | ▲ | | | | | △ | △ | | | | | | | | | | | | | |
| - 55 °C | | | | | | | | | | | | | | | | | | | | | △ | △ | | | | | | | | | | | | | |
| - 60 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal voltage | Operating peak voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 300 / 300 V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 300 / 500 V | ● | ● | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | 600 V acc. UL/CSA | | | | | | | | | | | | | | | ● | ● | | | | | | | | | | | | | | | | | | |
| | 450 / 750 V | | | | | ● | | ● | ● | | | | | | | | | | | | | ● | ● | | | ● | ● | | | | | | | | |
| 600 / 1000 V | | | ● | ● | | | | | | | | | | | | | | | | | | | | | | | ● | ● | | | | | | | |
| Cable structure | core insulation | Special Elastomer | | | | | | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | PUR | | | | | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Silicon | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| | | PE | | | | | | | | | | | | | | | | | | | | | | | | | | | | ● | ● | ● | | | |
| | | Special Polymer | ● | ● | ● | ● | | | | | | ● | ● | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | Core identification | numbering according to DIN VDE 0293 | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | | colour code according to DIN VDE 0293 | | | | | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | ● | ● |
| | | colour code according to DIN 47100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | JB colour code (varicoloured cores) | | | | | | | | | | | | | | | | | | | | | | | | ● | ● | | | | | | | | |
| | screening | Cu-braiding | | ● | | ● | | ● | | ● | | ● | | | | ● | | ● | | ● | | | ● | | ● | | ● | | ● | | ● | | ● | | |
| steel wire braiding | | | | | | | | | | | | | | | ● | | | | | | | | | | | | | | | | | | | | |
| Outer sheath | Silicon | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Special Polymer | ● | ● | ● | ● | | | | | | ● | ● | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | PUR | | | | | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheath colour | grey | ● | ● | | | | ● | ● | ● | | | | | | | | | | | | | | ● | ● | ● | ● | | | ● | ● | ● | ● | ● | | |
| | black | | | ● | ● | | | | | | ● | ● | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | ● | ● | | | | ● | ● | |
| | yellow | | | | | | | | ● | ● | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | | | ● | ● | |
| | orange | | | | | ● | | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | ● | ● | |
| | red-brown | | | | | | | | | | | | | | ● | ● | ● | | | | | | | | | | | | | | | | ● | ● | |
| Vappi- cation | Application in drag chains | see selection table cable in drag chains / prefix page 30 to 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | open air | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| Properties | chemicals consistent | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | EMV-preferred type | | ● | ● | ● | | ● | ● | ● | ● | ● | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | resistant to weathering effects | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | abrasion resistance | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |

Cables halogen-free

| Type | Page | Type | Page |
|--|-------------|-------------------------------|-------------|
| AIRPORT 400 Hz | T 49 - T 50 | MULTISPEED 500-PUR UL/CSA | N 89 - N 90 |
| BUS-Cables/I-BUS | R 142 | MULTISPEED 500-TPE | C 22 - C 23 |
| DATAFLAMM | B 8 | MULTISPEED 500-TPE UL/CSA | N 96 - N 97 |
| DATAFLAMM-C | B 23 | MULTISPEED 600-PUR-J/-O | N 124 |
| DATAFLAMM-C-Paar | B 24 | MULTISPEED 600-C-PUR-J/-O | N 125 |
| FMGCH (FMGCG) | W 7 | MULTISPEED TRONIC-C-PUR | N 106 |
| FMGSGO | W 8 | MULTISPEED TRONIC-PUR | N 105 |
| FMGSGO | W 9 | MULTITHERM 400 | E 13 |
| FZ-LSi, FZ-LS, Neon-Light-Cable | K 26 | MULTITHERM 400-ES | E 20 |
| GALVANICABLE | T 11 | (N)HMH-J | O 8 |
| H05Z-K, H07Z-K | K 16 - K 17 | (N)HMH-O | O 7 |
| H07 ZZ-F | F 12 - F 13 | N2XCH Power and Control cable | Q 26 - Q 27 |
| (H)03 Z1Z1-F | A 69 | N2XCH-FE 180/E30 | Q 33 - Q 34 |
| (H)05 Z1Z1-F | A 70 | N2XCH-FE 180/E90 | Q 41 - Q 42 |
| HELUTHERM 1200 | K 32 | N2XH Power and Control cable | Q 24 - Q 25 |
| HELUTHERM 1200-ES | K 32 | N2XH-FE 180/E30 | Q 31 - Q 32 |
| HELUTHERM 145 | K 22 - K 23 | N2XH-FE 180/E90 | Q 39 - Q 40 |
| HELUTHERM 145 MULTI | E 5 - E 6 | NHXCH-FE 180/E90 | Q 45 - Q 46 |
| HELUTHERM 145 MULTI-C | E 14 - E 15 | NHXCH-FE 180/E30 | Q 37 - Q 38 |
| HELUTHERM 145 UL/CSA approved | N 117 | NHXH-FE 180/E30 | Q 35 - Q 36 |
| HELUTHERM 145 | N 118 | NHXH-FE 180/E90 | Q 43 - Q 44 |
| HELUTHERM 600/600-ES | K 30 | NHXMH-J/-O | O 9 |
| HELUTHERM 800/800-ES | K 31 | NSHXAFö | K 36 |
| HELUWIND WK fire warning cable Torsion | T 35 | PUR 750 | A 51 |
| HELUWIND Thermflex 145 | T 39 | PUR-C-PUR | A 60 |
| J-2Y(St)H | P 12 | PUR-Single Core | K 15 |
| J-H(St)H | P 10 | RD-H(St)H | B 34 |
| J-H(St)HBMK red | P 11 | ROBOFLEX-sewer robot | H 10 |
| JB-750 HMH | A 68 | ROBOFLEX 156-flat | H 9 |
| JB-750 HMH-C | A 77 - A 78 | ROBOFLEX 150, 151, 152, 153 | H 7 - H 8 |
| JE-H(St)H BMK red | Q 29 | ROBOFLEX 2001 / 2001-C | H 6 |
| JE-H(St)H orange | Q 28 | Sensorflex-H | T 46 - T 47 |
| JE-H(St)HRH BMK | Q 30 | SiD, SiD/GL, SiF/GL | K 25 |
| JE-LiHCH | B 33 | SiF, SiFF | K 24 |
| JZ-500 HMH | A 62 - A 63 | SiHF | E 7 - E 8 |
| JZ-500 HMH-C | A 71 - A 72 | SiHF UL/CSA | N 75 - N 76 |
| JZ-600 HMH | A 66 - A 67 | SiHF-C-Si UL/CSA | N 77 |
| JZ-600 HMH-C | A 75 - A 76 | SiHF/GL-P | E 16 |
| KOMPOFLEX JZ-500 | A 87 | SOLARFLEX | T 18 - T 19 |
| KOMPOFLEX JZ-500-C | A 88 - A 89 | Ship's Power Cables MPRX | W 14 |
| KOMPOSPEED 600/600-C | K 37 | Ship's Power Cables MPRXCX | W 15 |
| KOMPOSPEED JZ-HF-500 | C 29 | SUPER-PAAR-TRONIC-C-PUR | C 35 |
| KOMPOSPEED JZ-HF-500-C | C 30 | SUPERTRONIC-330-PURö | N 102 |
| LFMGSSGO | W 10 | SUPERTRONIC-330-C-PURö | N 103 |
| LFMGSSGO | W 11 | SUPER-PAAR-TRONIC-340-C-PUR | N 104 |
| LMGSGO | W 6 | SUPERTRONIC-C-PURö | C 34 |
| MEGAFLEX 500 | A 64 - A 65 | THERMFLEX 180 EWKF | E 9 |
| MEGAFLEX 500 UL/CSA | N 54 - N 55 | THERMFLEX 180 EWKF-C | E 19 |
| MEGAFLEX 500-C | A 73 - A 74 | TOPFLEX 611-PUR | D 5 |
| MEGAFLEX 500-C UL/CSA | N 56 - N 57 | TOPFLEX 611-C-PUR | D 7 |
| MEGAFLEX 600 | N 58 - N 59 | TOPFLEX MOTOR EMV 1/1 | N 147 |
| MEGAFLEX 600-C | N 60 - N 61 | TOPFLEX-PUR | D 14/D 16 |
| MGSGO | W 4 | TOPSERV 109 PUR | N 131 |
| MULTIFLEX 512-C-PUR | C 19 - C 20 | TOPSERV 110/120 | D 9 |
| MULTIFLEX 512-PUR | C 14 - C 15 | TROMM-PUR | G 5 |
| MULTIFLEX 512-PUR UL/CSA | N 87 - N 88 | TROMM-PUR-H | G 4 |
| MULTIFLEX 512-C-PUR UL/CSA | N 92 - N 93 | UL-Style 3135 | N 119 |
| MULTISPEED 500-C-PUR UL/CSA | N 94 - N 95 | UNIPUR | A 49 - A 50 |
| MULTISPEED 500-C-TPE | C 24 | UNIPUR-CP | A 58 - A 59 |
| MULTISPEED 500-C-TPE UL/CSA | N 98 - N 99 | | |
| MULTISPEED 500-PUR | C 16 | | |

Cables to foreign standards

| Type | Page UL/CSA | Page GOST |
|--|---------------|---------------|
| A | | |
| A07 RN-F | | F 8 |
| A-BUS | R 147 - R 150 | |
| C | | |
| CAN BUS | R 132 - R 141 | |
| CC LINK BUS | R 157 | |
| Command Cables UL approved/screened | N 65 - N 73 | |
| D | | |
| DREINORM HAR-UL-CSA | N 111 - N 112 | |
| F | | |
| F-C-PURö-JZ | | A 54 - A 55 |
| F-CY-JZ | | A 27 - A 28 |
| F-CY-OZ (LiY-CY) | | A 25 - A 26 |
| FIVENORM | N 113 - N 114 | N 113 - N 114 |
| FOUNDATION™ Fieldbus Basic, NFPA 79 Ed. 2007 | R 122 | |
| H | | |
| H03 VV-F | | A 18 |
| H05 RN-F / RR-F | | F 5 |
| H05 V-K | | K 6 - K 7 |
| H05VV5-F, (N)SYLYÖ-JZ | | A 11 - A 12 |
| (H)05VV5-F, ((N) YSLYÖ-JZ) | | A 13 |
| H05VVC4V5-K, (N)SYLYCYÖ-JZ | | A 29 - A 30 |
| (H)05VVC4V5-K ((N)SYLYCYÖ-JZ | | A 31 |
| H05VV-F | | A 19 - A 20 |
| H05VV-F/SJT | N 12 - N 13 | N 12 - N 13 |
| H05VV-F/UL | N 14 | |
| (H)05 Z1Z1-F | | A 70 |
| H07 RN-F | | F 6 - F 7 |
| H05 V-K / H07 V-K | | K 13 |
| H07 V-R, H05 V-K, (H)07 V-K | | K 12 |
| H07 V-K, (H)07 V-K | | K 8 - K 9 |
| HELUKABEL FOUNDATION™ | R 122 - R 125 | |
| HELUTHERM 120 | | E 4 |
| HELUTHERM 145 UL/CSA approved | N 117 - N 118 | |
| HEL UWIND WK 103w EMV | T 27 | T 27 |
| HEL UWIND WK 135-Torsion | | T 29 |
| HEL UWIND WK Fire Warning Cables Torsion | | T 35 |
| HEL UWIND WK DLO 2kV | | T 37 |
| HEL UWIND WK H07BN4N4-F WIND-Torison | | T 33 |
| HEL UWIND Thermflex 145 | | T 39 |
| HEL UWIND WK (N)A2XH | | T 40 |
| I | | |
| I-BUS | R 142 - R 144 | |
| J | | |
| JB-500 | | A 21 |
| JB-750 | | A 22 |
| JB-750 yellow | | A 23 |
| JZ-500 | | A 6 - A 7 |
| JZ-500 HMH | | A 62 - A 63 |
| JZ-500 HMH-C | | A 71 - A 72 |
| JZ-500 orange | | A 10 |
| JZ-500 PUR | | A 43 |
| JZ-500-FC-PUR | | A 52 - A 53 |
| JZ-600 | | A 16 - A 17 |
| JZ-600 HMH | | A 66 - A 67 |
| JZ-600 HMH-C | | A 75 - A 76 |
| JZ-600 UL/CSA | N 10 - N 11 | |
| JZ-600-PUR | N 49 - N 50 | |

| Type | Page UL/CSA | Page GOST |
|-------------------------------|-------------|-------------|
| JZ-600-YC-PUR | N 52 - N 53 | |
| JZ-600-Y-CY | | A 36 - A 37 |
| JZ-600-Y-CY UL/CSA | N 20 - N 21 | |
| JZ-602 | N 7 - N 8 | N 7 - N 8 |
| JZ-602-PUR DC/AC | N 48 | N 48 |
| JZ-602 RC | N 83 | N 83 |
| JZ-602 RC-C-PUR | N 91 | |
| JZ-602 RC-CY | N 85 | N 85 |
| JZ-602 RC-PUR | N 86 | |
| JZ-602-C-PUR | N 51 | N 51 |
| JZ-602-CY | N 17 - N 18 | N 17 - N 18 |
| JZ-602-PUR | N 46 - N 47 | N 46 - N 47 |
| JZ-603 | N 9 | N 9 |
| JZ-603-CY | N 19 | N 19 |
| JZ-604-FCY TC TRAY CABLE | N 33 | N 33 |
| JZ-604-TC TRAY CABLE | N 25 - N 26 | N 25 - N 26 |
| JZ-604-YCY TC TRAY CABLE | N 34 | N 34 |
| JZ-750 | | A 14 - A 15 |
| JZ-HF | | C 5 - C 6 |
| JZ-HF-CY | | C 8 - C 9 |
| K | | |
| KOMPOFLEX JZ-500 | | A 87 |
| KOMPOFLEX JZ-500-C | | A 88 - A 89 |
| KOMPOSPEED 600 | | K 37 |
| KOMPOSPEED JZ-HF 500 | | C 29 |
| KOMPOSPEED JZ-HF 500-C | | C 30 |
| M | | |
| MEGAFLEX 500 | N 54 - N 55 | N 54 - N 55 |
| MEGAFLEX 500-C | N 56 - N 57 | N 56 - N 57 |
| MEGAFLEX 600 | N 58 - N 59 | |
| MEGAFLEX 600-C | N 60 - N 61 | |
| MULTIFLEX-512-C-PUR | C 19 - C 20 | C 19 - C 20 |
| MULTIFLEX-512-PUR | C 14 - C 15 | C 14 - C 15 |
| MULTIFLEX 600 | N 62 | |
| MULTIFLEX 600-C | N 63 | |
| MULTISPEED 600 PUR-J/-O | N 124 | |
| MULTISPEED 600-C-PUR-J/-O | N 125 | |
| MULTISPEED-500-C-PUR UL/CSA | N 94 - N 95 | |
| MULTISPEED-500-C-PVC UL/CSA | N 84 | |
| MULTISPEED-500-C-TPE UL/CSA | N 98 - N 99 | |
| MULTISPEED-500-PUR UL/CSA | N 89 - N 90 | |
| MULTISPEED-500-PVC UL/CSA | N 82 | |
| MULTISPEED-500-TPE UL/CSA | N 96 - N 97 | |
| MULTISPEED-TRONIC-C-PUR | N 106 | |
| MULTISPEED-TRONIC-PUR | N 105 | |
| N | | |
| N2XH | | Q 24 - Q 25 |
| N2XCH Power and Control cable | | Q 26 - Q 27 |
| N2XCH-FE 180/E30 | | Q 33 - Q 34 |
| N2XH-FE 180/E30 | | Q 31 - Q 32 |
| N2XH-FE 180/E90 | | Q 39 - Q 40 |
| N2XSY | | Q 50 - Q 51 |
| N2XS2Y | | Q 54 - Q 55 |
| N2XS(F)2Y | | Q 58 - Q 59 |
| N2XSEY | | Q 62 |
| NAYY-J | | Q 9 |
| NHXCH-FE 180/E30 | | Q 37 - Q 38 |
| NHXCH-FE 180/E90 | | Q 45 - Q 46 |

Cables to foreign standards

| Type | Page UL/CSA | Page GOST |
|--|---------------|-------------|
| NHXX-FE 180/E30 | | Q 35 - Q 36 |
| NHXX-FE 180/E90 | | Q 43 - Q 44 |
| NYCWW | | Q 16 - Q 17 |
| NYCY | | Q 12 - Q 13 |
| NYM-J/ NYM-O | | O 5 |
| NYJ und NYO | | Q 6 - Q 7 |
| O | | |
| OB-BL-PAAR-CY | | A 82 |
| OZ-BL | | A 80 |
| OZ-BL-CY | | A 81 |
| P | | |
| PAAR-CY-OZ | | B 13 |
| PAAR-TRONIC | | B 6 - B 7 |
| PAAR-TRONIC-CY | | B 11 - B 12 |
| PROFIBUS | R 107 - R 121 | |
| PROFInet Type A, B, C | R 101 - R 106 | |
| PURö-JZ | | A 44 - A 45 |
| PURö-JZ-HF | | C 12 - C 13 |
| PURö-JZ-HF-YCP | | C 17 - C 18 |
| PUR-YELLOW | | A 47 |
| PUR-ORANGE | | A 46 |
| PVC+Nylon-Single cores THHN/THWN | N 115 | |
| PVC-single cores UL/CSA ap. Style 1007 | N 108 | |
| PVC-single cores UL/CSA ap. Style 1015 | N 110 | N 110 |
| PVC-single cores UL/CSA ap. Style 1569 | N 109 | |
| R | | |
| RE-2Y(St)YV | | B 28 |
| RE-2Y(St)YV PiMF | | B 29 |
| RG-Coaxial cables | M 4 - M 7 | |
| ROBOFLEX 150 ... 153 | | H 7 - H 8 |
| ROBOFLEX 2001 | | H 6 |
| ROBOFLEX 2001-C | | H 6 |
| Rubber/Neoprene Control Cable UL+CSA | N 81 | |
| S | | |
| SHIPFLEX 109 | W 20 - W 21 | |
| SHIPFLEX 113 | W 22 | |
| SHIPFLEX 121 | W 23 | |
| SHIPFLEX 512 | W 17 | |
| SHIPFLEX 330 | W 18 | |
| SHIPFLEX 340 | W 19 | |
| SiF/SiIF/GL/SiFF/SiD/SiD/GL | | K 24 - K 25 |
| SiHF | | E 7 - E 8 |
| SiHF UL/CSA | N 75 - N 76 | |
| SiHF/GL-P | | E 16 |
| SiHF-C-Si | | E 17 - E 18 |
| SiHF-C-Si UL/CSA | N 77 | |
| Single 600-J/-O | N 120 | N 120 |
| Single 600-CY-J/-O | N 121 | N 121 |
| Single 602-RC-CY-J/-O | N 123 | N 123 |
| Single 602-RC-J/-O | N 122 | N 122 |
| SOLARFLEX-X PV1-F | | T 18 |
| SUPER-PAAR-TRONIC-C-PUR | | C 35 |
| SUPERTRONIC-C-PURö | | C 34 |
| SUPERTRONIC-C-PVC | | C 32 |
| SUPERTRONIC-PVC | | C 31 |
| SUPERTRONIC-310-C-PVC | N 101 | |
| SUPERTRONIC-310-PVC | N 100 | |
| SUPERTRONIC-330-C-PURö | N 103 | |

| Type | Page UL/CSA | Page GOST |
|---------------------------------|---------------|-------------|
| SUPERTRONIC-330-PURö | N 102 | |
| SUPER-PAAR-TRONIC-340-C-PUR | N 104 | |
| SY-JB | | A 40 - A 41 |
| SY-JZ | | A 34 - A 35 |
| T | | |
| TOPFLEX® 1002 | T 7 | |
| TOPFLEX® 300 | T 6 | |
| TOPFLEX® 301/301-C | T 9 | |
| TOPFLEX® 302/302-UL | T 8 | |
| TOPFLEX® 600-C-PVC | | D 6 |
| TOPFLEX® 600-PVC | | D 4 |
| TOPFLEX® 600 VFD | N 137 | |
| TOPFLEX® 611-C-PUR | | D 7 |
| TOPFLEX® 611-PUR | | D 5 |
| TOPFLEX® 650 VFD | N 138 | |
| TOPFLEX®-EMV-UV-2YSLCYK-J | N 141 - N 142 | |
| TOPFLEX®-EMV 2YSLCY-J | | D 17 - D 18 |
| TOPFLEX®-EMV-3PLUS 2YSLCY-J | | D 21 - D 22 |
| TOPFLEX®-EMV-UV-3PLUS 2YSLCYK-J | N 143 - N 144 | |
| TOPFLEX® Motor 103 | N 150 | |
| TOPFLEX® Motor EMV 1/1 | N 147 | |
| TOPFLEX® Motor EMV 3/3 | N 148 - N 149 | |
| TOPSERV® 109 PUR | N 131 | N 131 |
| TOPSERV® 110 | | D 9 |
| TOPSERV® 120 | | D 9 |
| TOPSERV® 600 VFD | N 139 | |
| TOPSERV® 650 VFD | N 140 | |
| TRAYCONTROL® 300 | N 38 - N 39 | |
| TRAYCONTROL® 300 TP | N 42 - N 43 | |
| TRAYCONTROL® 300-C | N 40 - N 41 | |
| TRAYCONTROL® 300-C TP | N 44 - N 45 | |
| TRAYCONTROL® 500 | N 27 - N 28 | |
| TRAYCONTROL® 500-C | N 35 - N 36 | |
| TRAYCONTROL® 600 | N 30 - N 31 | |
| TRAYCONTROL® 600-C | N 37 | |
| TRONIC (LiYY) | | B 4 - B 5 |
| TRONIC-CY (LiY-CY) | | B 9 - B 10 |
| U | | |
| UL-Style 3135 | N 119 | |
| UNIPUR | | A 49 - A 50 |
| UNIPUR-CP | | A 58 - A 59 |
| V | | |
| Verteilerflex | N 151 - N 152 | |
| Y-CY-JB | | A 38 - A 39 |
| Y-CY-JZ | | A 32 - A 33 |
| YÖ-C-PURö-JZ | | A 56 - A 57 |

Selection table cables in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Control cable, screened and unscreened

| Type | Application | | | | Cable Structure | | | | Technical Data | | | | Resistance | | | | Standards | |
|------------------------------------|------------------------|--------------------------------------|------------|-------------------|-----------------|-----------------|--------------------|-----------------|-------------------------|--------------|---------------------------|---------------|------------------------|----------|-----|---------|-----------|---------------------------------|
| | Movement Distance max. | Min. Bending Radius D=Outer diameter | Speed max. | Acceleration max. | Cycle min. | Core Insulation | Outer Sheath | Nominal Voltage | Temperature Range in C° | halogen-free | extensively oil resistant | oil resistant | Jacket flame retardant | microbes | lye | coolant | | radiation resistant 80/100 Mrad |
| JZ-602 RC-C PUR | 5 m | 5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| Single 602-RC-J/-O single core | 15 m | 7,5 x D | 3 m/s | 5 m/s | 5 Mio | PVC special | PUR special | 600 V/UL-CSA | -10 | x | x | x | x | x | x | x | x | x |
| Single 602-RC-J/-O +CY single core | 30 m | 10 x D | 4 m/s | 10 m/s² | 1 Mio | PVC special | Cu-braid, Cu-layer | 300/500 V | -5 | x | x | x | x | x | x | x | x | x |
| JZ-602 RC | 100 m | 12,5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 1000 V | 70 | x | x | x | x | x | x | x | x | x |
| JZ-602 RC PUR | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -20 | x | x | x | x | x | x | x | x | x |
| JZ-602 RC-CY | 10 m (to 25 cores) | 7,5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -30 | x | x | x | x | x | x | x | x | x |
| JZ-HF | 15 m | 5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| JZ-HF CY | 15 m | 7,5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| MULTIFLEX® 600 | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| MULTIFLEX® 600-C | 15 m | 12,5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| PUR0-JZ-HF | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| PUR0-JZ-HF-YCP | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| MULTIFLEX® 512-PUR | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| MULTIFLEX® 512-C-PUR | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| MULTIFLEX® 512-PUR UL/CSA | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |
| MULTIFLEX® 512-C-PUR UL/CSA | 15 m | 10 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | x | x | x | x | x | x | x | x | x |

Continuation ▲

The table indicates the main application. In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support.

Phone +49 7150 9209-0 or techsupport@helukabel.de.

A cycle is a double lift; a representative sample has been tested and measured in our Test Workshop.

The cycle count is only valid when appropriate and professionally installed (see the installation advice, rules for connections, page 36, and under permitted environment conditions).

Selection table cables in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Control Cable, screened and unscreened

| Type | Application | | | | Cable Structure | | | | Technical Data | | | | Resistance | | | | Standards | | | |
|------------------------------|------------------------|--------------------------------------|------------|-------------------|-----------------|-----------------|--------------|-----------------|-------------------------|--------------|---------------------------|---------------|------------------------|----------|-----|---------|---------------------------------|---------|--------------------------------|-----------------|
| | Movement Distance max. | Min. Bending Radius D=Outer diameter | Speed max. | Acceleration max. | Cycle min. | Core Insulation | Outer Sheath | Nominal Voltage | Temperature Range in C° | halogen-free | extensively oil resistant | oil resistant | Jacket flame retardant | microbes | lye | coolant | radiation resistant 80/100 Mrad | uv-rays | VDE-Register-No. | UL/CSA-approved |
| MULTISPEED® 600-PUR-J/-O | 5 m | 5 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 1000 V | -40 | x | x | x | x | x | x | x | x | x | adapted to V DE 0245/0281/0282 | UL/CSA-approved |
| MULTISPEED® 600-C-PUR-J/-O | 15 m | 7,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-PVC | 30 m | 10 x D | 4 m/s | 50 m/s² | 1 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-PVC UL/CSA | 100 m | 12,5 x D | 5 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 600 V/UL-CSA | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-PUR | 450 m | 15 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 1000 V | -40 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-PUR UL/CSA | 15 m | 7,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-TPE | 30 m | 10 x D | 4 m/s | 50 m/s² | 1 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-TPE UL/CSA | 100 m | 12,5 x D | 5 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 600 V/UL-CSA | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-C-PVC | 450 m | 15 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 1000 V | -40 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-C-PVC UL/CSA | 15 m | 7,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-C-PUR | 30 m | 10 x D | 4 m/s | 50 m/s² | 1 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-C-PUR UL/CSA | 100 m | 12,5 x D | 5 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 600 V/UL-CSA | -20 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-C-TPE | 450 m | 15 x D | 2 m/s | 10 m/s² | 1 Mio | PVC special | PUR special | 1000 V | -40 | x | x | x | x | x | x | x | x | x | | |
| MULTISPEED® 500-C-TPE UL/CSA | 15 m | 7,5 x D | 3 m/s | 10 m/s² | 5 Mio | PVC special | PUR special | 300/500 V | -20 | x | x | x | x | x | x | x | x | x | | |

The table indicates the main application.
 In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support.
 Phone +49 7150 9209-0 or techsupport@helukabel.de.
 A cycle is a double lift: a representative sample has been tested and measured in our Test Workshop.
 The cycle count is only valid when appropriate and professionally installed (see the installation advice; rules for connections, page 36, and under permitted environment conditions).



Selection table cables in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Electronic-Data-BUS-Cables, screened and unscreened

| Type | Application | | | | Cable Structure | | | Technical Data | | | | Standards | | | | | | | | | | | | | | | | | |
|------------------------------------|------------------------|--------------------------------------|------------|-------------------|-----------------|-----------------|--------------|-----------------|-------------------------|-----|-----|-----------|----|----|----|----|--------------|---------------------------|---------------|------------------------|----------|-----|---------|---------------------------------|---------|------------------|--------------------------------|-----------------|---------------------|
| | Movement Distance max. | Min. Bending Radius D=Outer diameter | Speed max. | Acceleration max. | Cycle min. | Core Insulation | Outer Sheath | Nominal Voltage | Temperature Range in C° | | | | | | | | | | | | | | | | | | | | |
| SUPERTRONIC-PVC | 5 m | 10 m (to 25 cores) | 2 m/s | 10 m/s² | 1 Mio | PVC special | PE | 300/300 V | -40 | -30 | -20 | -10 | -5 | 70 | 80 | 90 | halogen-free | extensively oil resistant | oil resistant | Jacket flame retardant | microbes | lye | coolant | radiation resistant 80/100 Mrad | UV-rays | VDE-Register-No. | adapted to V DE 0245/0281/0282 | UL/CSA-approved | DESINA [®] |
| SUPERTRONIC-C-PVC | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPERTRONIC 310-PVC | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPERTRONIC 310 C-PVC | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPERTRONIC-PURö | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPERTRONIC-C-PURö | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPERTRONIC 330 PURö | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPERTRONIC 330 C PURö | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPER-PAAR-TRONIC-C-PUR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SUPER-PAAR-TRONIC 340 C PUR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| MULTISPEED-TRONIC-PUR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| MULTISPEED-TRONIC-C-PUR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S FTP Drag chain 4x2xAWG 24 PUR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PROFIBUS L2 1x20.64 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PROFIBUS CAN, high flexible | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| I-BUS Drag chain | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| POF mit PUR-Jacket, simplex duplex | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| TOPGEBER 512 PUR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Tachofeedback-Cable-C-Pur | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

The table indicates the main application. In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support. Phone +49 7150 9209-0 or techsupport@helukabel.de. A cycle is a double lift: a representative sample has been tested and measured in our Test Workshop. The cycle count is only valid when appropriate and professionally installed (see the installation advice; rules for connections, page 36, and under permitted environment conditions).

Selection table cables in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Servo Cables and Motor Cables, screened and unscreened

| Type | Application | | | | Cable Structure | | | Technical Data | | | | | | | Resistance | | Standards | | | | |
|--|------------------------|--------------------------------------|------------|-------------------|-----------------|-----------------|--------------|-----------------|-------------------------|---------------------------|---------------|------------------------|----------|-----|------------|---------------------------------|-----------|------------------|-----------------|---------|--|
| | Movement Distance max. | Min. Bending Radius D=Outer diameter | Speed max. | Acceleration max. | Cycle min. | Core Insulation | Outer Sheath | Nominal Voltage | Temperature Range in C° | extensively oil resistant | oil resistant | jacket flame retardant | microbes | lye | coolant | radiation resistant 80/100 Mrad | uv-rays | VDE-Register-No. | UL/CSA-approved | DESINA® | |
| TOPSERV® 109 PUR | x | | | | | | | | | | | | | | | | | | | | |
| TOPSERV® 113 PUR | x | | | | | | | | | | | | | | | | | | | | |
| TOPSERV® 121 PUR | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 300 | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 301 | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 301 C | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 304 | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 304 C | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 611 PUR | x | | | | | | | | | | | | | | | | | | | | |
| TOPFLEX® 611-C-PUR | x | | | | | | | | | | | | | | | | | | | | |
| TOPSERV® 110+120 w. Control pair. screened | x | | | | | | | | | | | | | | | | | | | | |

The table indicates the main application. In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support. Phone +49 7150 9209-0 or techsupport@helukabel.de. A cycle is a double lift: a representative sample has been tested and measured in our Test Workshop. The cycle count is only valid when appropriate and professionally installed (see the installation advice; rules for connections, page 36, and under permitted environment conditions).



Selection table cables in drag chains

Other Technical Details can be found in the Product Pages of our Catalogue.

Environment friendly Cables, screened and unscreened

| Type | Application | | | | Cable Structure | | | Technical Data | | | | Resistance | | | | | | | Standards | | | | | | | |
|-------------------------------------|---------------------------|--|---------------|----------------------|-----------------|--------------------|--------------------|--------------------|----------------------------|---|---|------------|--------------|---------------------------|---------------|------------------------|----------|-----|-----------|---------------------------------|---------|--------------------|--------------------------------|-----------------|---------------------|---|
| | Movement Distance max. | Min. Bending Radius D=Outerdiameter | Speed max. | Acceleration max. | Cycle min. | Core Insulation | Outer Sheath | Nominal Voltage | Temperature Range in C° | | | | halogen-free | extensively oil resistant | oil resistant | Jacket flame retardant | microbes | Ive | coolant | radiation resistant 80/100 Mrad | uv-rays | VDE-Registrier-No. | adapted to V DE 0245/0281/0282 | UL/CSA-approved | DESINA [®] | |
| BIOFLEX [®] 500 JZ-HF | 5 m | 5 x D | 2 m/s | 10 m/s ² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| BIOFLEX [®] 500 JZ-HF-C | 10 m (to 25 cores) | 5 x D | 3 m/s | 10 m/s ² | 5 Mio | PUR special | Cu-braid, Cu-layer | 600 V/UL-CSA | -20 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| KOMPOSPEED [®] 600 | 15 m | 7,5 x D | 4 m/s | 50 m/s ² | 1 Mio | TPE special | Inner sheath | 300/500 V | -10 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| KOMPOSPEED [®] 600-C | 30 m | 10 x D | 3 m/s | 10 m/s ² | 5 Mio | TPE special | Inner sheath | 300/500 V | -5 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| KOMPOSPEED [®] JZ-HF-500 | 50 m | 12,5 x D | 4 m/s | 10 m/s ² | 1 Mio | TPE special | Inner sheath | 300/500 V | -10 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| KOMPOSPEED [®] JZ-HF-C-500 | 100 m | 15 x D | 5 m/s | 50 m/s ² | 1 Mio | PVC special | Cu-braid, Cu-layer | 1000 V | -40 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

Ship Cables

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|--------------------|----------|-------|---------------------|-------|-------------|--------------------|--------------|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHIPELEX 512 | 5 m | 5 x D | 2 m/s | 10 m/s ² | 1 Mio | PVC special | PVC special | 300/300 V | -40 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| SHIPELEX 330 | 10 m (to 25 cores) | 5 x D | 3 m/s | 10 m/s ² | 5 Mio | PUR special | Cu-braid, Cu-layer | 600 V/UL-CSA | -20 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| SHIPELEX 340 | 15 m | 7,5 x D | 4 m/s | 50 m/s ² | 1 Mio | TPE special | Inner sheath | 300/500 V | -10 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| SHIPELEX 109 | 30 m | 10 x D | 3 m/s | 10 m/s ² | 5 Mio | TPE special | Inner sheath | 300/500 V | -5 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| SHIPELEX 109 | 50 m | 12,5 x D | 4 m/s | 10 m/s ² | 1 Mio | TPE special | Inner sheath | 300/500 V | -10 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| SHIPELEX 113 | 100 m | 15 x D | 5 m/s | 50 m/s ² | 1 Mio | PVC special | Cu-braid, Cu-layer | 1000 V | -40 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| SHIPELEX 121 | 100 m | 15 x D | 5 m/s | 50 m/s ² | 1 Mio | PVC special | Cu-braid, Cu-layer | 1000 V | -40 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

The table indicates the main application.

In case of moving cables at higher speeds, over longer distances or higher cycling rates please contact our Technical Support.

Phone +49 7150 9209-0 or techsupport@helukabel.de.

A cycle is a double lift: a representative sample has been tested and measured in our Test Workshop.

The cycle count is only valid when appropriate and professionally installed (see the installation advice: rules for connections, page 36, and under permitted environment conditions).

Selection Table for Energy Drag Chains

| HELUKABEL® for drag chains | Drag chains Type from | | | | | |
|--|--|---|------------------------------|---|--|--|
| | IGUS® | Kabelschlepp® | EKD Celenkrohr® | Murrplastik® | BS Brevetti Stendaito® | Flexatec |
| <p>All cables and chains in fields of the same colour can be used in combination.</p> <p>Control and connecting cables JZ+HF+CY PURÖ-JZ-HF+YCP MULTIFLEX 512®-PUR+C-PUR MULTISPEED 500+C (alle Typen) JZ-602 RC+CY</p> <p>Data cables SUPERTRONIC-PURÖ+C-PURÖ SUPER-PAAR-TRONIC-C-PUR SUPERTRONIC-PVC+C-PVC TOPGEBER 500+502+503+510 Tachofeedback-cable -C-PUR Incremental feedback cable -C-PUR</p> <p>Servo and Motor cables TOPSERV® 100 bis 124 TOPFLEX® 116 TOPFLEX® 611-PUR+611-C-PUR</p> <p>ECO cable KOMPOSPEED® JZ HF500+C KOMPOSPEED® 600+C BIOFLEX 500® JZ H+C</p> | Zipper Easy-Chain® E 2 micro E 2 mini E 2 medium E 2 R 100 E 2 R E 4 / 0 E 4 / 4 E 4 / 100 E 6 | Mono Uniflex KC KE MC ME/AMK XLC Profile® Quantum | PFR PKK PLE Kolibri | MP®-Serie | Serie SR Light Medium Heavy Sliding Protection Serie Steel | P/PL/PLT PC PCT PCA S 5 S 7 / SUT 7 S 10 / SUT 10 S 12 / SUT 12 S 17 |
| | Easy Triflex® Twister Chain® | Robotrax® | Interflex® K | MP® Rotary movement on request | Robot Serie | Available on request |
| | E-Band E 6 | Quantum | Reintec | MP® 44 | SR 305 A | PL35-34 PL35-44 PL35-64 PL35-79 PL 35-109 |
| <p>Clean room cables JZ-HF-CY MULTIFLEX 512®-C-PUR MULTISPEED 500-C-TPE</p> <p>Certified for Clean Room use</p> | IPA Certificate | IPA Certificate | IPA Certificate | IPA Certificate | IPA Certificate | IPA Certificate |

For installation of the chain please observe the manufacturers advice.

The mentioned types, brands and certifications represent our state of knowledge. Changes are possible.



Installation manual

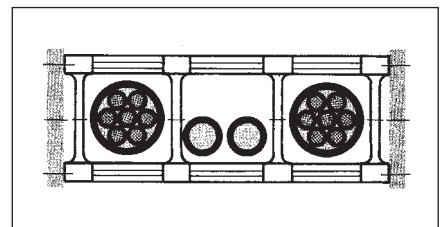
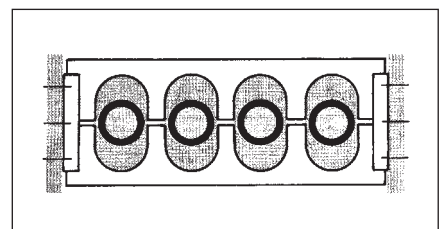
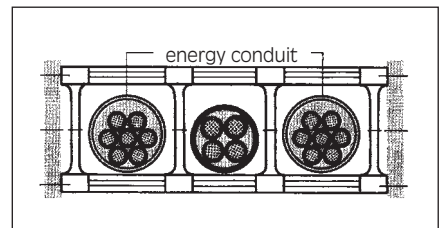
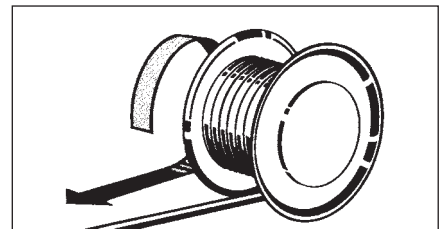
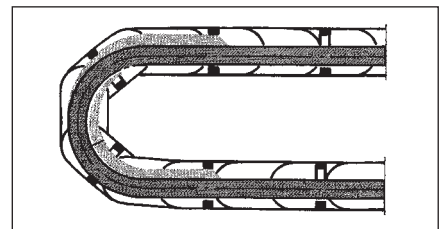
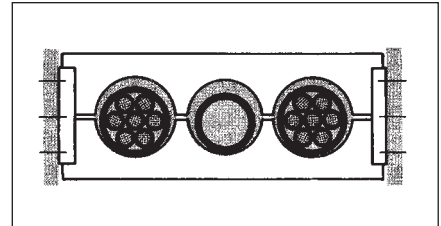
Cable installation in drag chains

The control cables in drag chains undertake an important task for the controlling and power technique, must be good synchronized with each other in the power chain systems. Further the installation of the cables and protection tubes in the power drag chains must be conducted with great care. An efficient usage upon accurate and exact cable installation. The following basic points should be noticed:

1. Where flat and round cables are mixed in one drag tray, then these should be installed loosely next to one another. The guide stays should be installed between the cables laid side by side. Try and avoid placing different sizes of round cables next to one another. Due to the limited space relationship cables arranged one above the other, frame stays are to be installed.
2. The cables must be installed with guide stays, dividers or in separate hole stays so as to move freely in the drag tray guides. As free space for the cables in the guide stay should be at least 10% of the cable \varnothing .
3. Always ensure that the cable can follow the drag trays motions without appearing to be forced.
4. If the cables are to be installed in the drag tray in layers then it is important to check upon installation that the cables are laid in such a way that they do not block each other when the drag tray alters direction.
5. Cables should always be installed in nonkinking and nontwisting flat position into the drag trays. The cables must be reeled down tangential from the reels or drums; the cables should not be lifted up in twisted or looping form over head. Before the installation, the cables must be laid in straight and non-twisted form on plane surface. The cables must have an additional length of at least 10% of the whole length so that these can be laid freely without twisting in drag chains.
6. In case that is not possible to lay the cables as described under 5, in order to lay several multi core high flexible cables with an outer diameter < 10 mm, we recommend the use of a guiding tube, in which these cables should loosely laid. This tube is than integrated into the drag system.
The cross section of this tube has to be much larger as the sum of the cross sections of the cables. For the free movement of the flexible energy conduits, the guide or divider stays must be installed.
7. In case that pressure- or hydraulic tubes are integrated in a power drag system, those should be able to expand and to shrink under alternating charges without interrupting the functionality of the drag system.
8. In order to maintain a balanced running of the drag chain it is necessary to ensure that the weight of the cables inside is divided up evenly, with the heavier cables installed on the edges and the lighter types in the middle.
All cables must be securely fixed at one end of the drag chain. Thus assuring that the cores are securely fastened to one side with the other, open, side allowing enough slack to take up the drag chain's motion.

Generally it is recommended, if possible, not to use cables with a multi layer construction, e.g. >25 cores, but to split the necessary number of conductors over several cables.

**If you have any further questions
please call our special cable department.**



Please send inquiry to:
 MARYLAND METRICS
 P.O. Box 261
 Owings Mills, MD 21117 USA
 ph: (410)358-3130 (800)638-1830
 fx: (410)358-3142 (800)872-9329
 email: sales@mdmetric.com
 web: <http://mdmetric.com>

Questionnaire for Energy Drag Chain Systems

Customer _____
 Installation site _____
 Kind of machine _____
 In operation since _____
 date _____

Sender _____
 Contact _____
 Phone _____ Fax _____

1. Drag Chain-Parameter

- Chain length/chain width m/mm _____
- Chain pitch mm _____
- Bending radius mm _____
- Guide stays existing yes no
- Frame stays existing yes no
- Layout/Installation horizontal vertical

3. Cable-Parameter

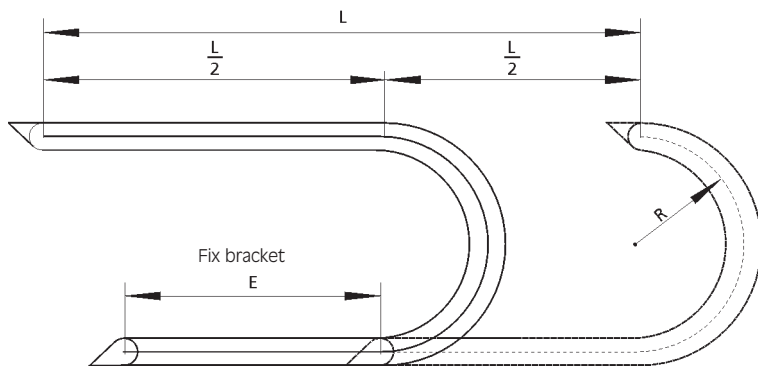
- Cable length (total) m _____
- Cable length (mobile) m _____
- Number of cables n _____
- Cable clamping without strain yes no
- Number of cores per cable n _____
- Cable screened yes no
- Cable halogen-free yes no

2. Installation and Movement-Parameter

- Movement distance (max.) m _____
- Speeds m/s _____
- Acceleration m/s² _____
- Frequency per time unit x/h _____
- Average movement distance/cycle m _____
- Daily working duration h _____
- Feeding at mid of moving distance yes no
- Additional weight/chain kg _____

4. Environmental-Parameter

- Operating temperature °C _____
- Kind of chemical influences _____
- Other environmental influences _____



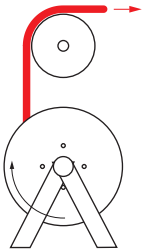
L = Movement distance
 R = Radius
 E = Distance between cable entrance and mid of moving distance

5. Cross-section and size of power cables

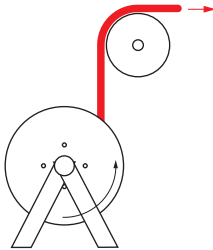
| No. | Part-No. | Cable type | No. cores/cross-sec. | Notes |
|-----|----------|------------|----------------------|-------|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |

Assembly instructions/laying reel cables NSHTÖU / (N)SHTÖU

Correct



Incorrect



1. The cables are to be pulled from the reeling drum without twisting, using a drawing cable and cable grip. Deflecting or pulling the cable over edges should be avoided.

In the case of rings, the cable should be unwound tangential.

Correct



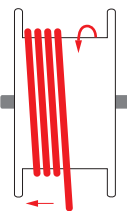
Incorrect



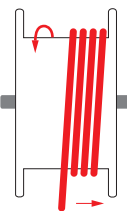
2. The cables must always be attached to the equipment drum without torsion.

Select the largest possible distance between the reeling drum and operating drum.

Correct

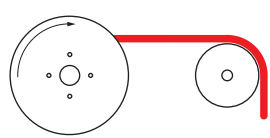


Incorrect

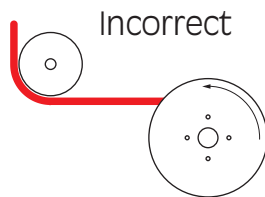


4. The cables are to be rolled onto the operating drums so that the cable moves to the left when started.

Correct

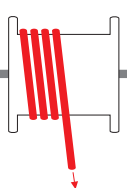


Incorrect



5. The S-shaped deflection of cables is to be avoided.

Correct



6. 2-3 windings on the operating drum must remain when the cable is extended.

Correct



7. In order to avoid crushing when fixing the cable to the end, a cable grip is to be used.

Please send inquiry to:
 MARYLAND METRICS
 P.O. Box 261
 Owings Mills, MD 21117 USA
 ph: (410)358-3130 (800)638-1830
 fx: (410)358-3142 (800)872-9329
 email: sales@mdmetric.com
 web: <http://mdmetric.com>

Record form for reel cables

Customer _____

Installation site _____

Type of machine _____

In operation since _____

Date _____

Sender _____

Contact _____

Phone _____ Fax _____

1. Drum configuration

1.1. Monospiral

1.2. Single layer

1.3. Multi layer

2. Arrangement of cables

2.1. Horizontal

2.2. Vertical

2.3. With deflection

2.4. Feed

2.5. Feed

2.6. Different feed (please enclose sketch or photo)

3. Track end cable fixing

3.1. Cable grip

3.2. Clamp

3.3. Other _____

4. Motion parameters

4.1. Travel (m) _____

4.2. Travel speed (m/s) _____

4.3. Travel acceleration (m/s²) _____

4.4. Number of cycles/time unit _____

Selection table low voltage joints

| Cable | joints | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-----------------|-----------------|----------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------------|------------------------|--------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--|
| | NSVM-S 3X1,5-10 | NSVM-S 4X1,5-10 | NSVM-S 5X1,5-6 | NSVM-S 3X6-25 | NSVM-S 4X6-25 | NSVM-S 5X6-16 | NSVM-S 1X16-35 | NSVM-S 3X16-50 | NSVM-S 4X16-50 | NSVM-S 5X16-35 | NSVM-S 1X35-95 | NSVM-S 3X35-150 | NSVM-S 4X35-150 | NSVM-S 5X70-150 | NSVM-S 1X95-100 | NSVM-S 1X95-300 | NSVM-S 3X95-300 | NSVM-S 4X95-300 | NSVM-S 4X16/16-4X35/16 | NSVM-S 4X60/25-4X95/50 | NSVM-S 4X95/50-4X240/120 | NSVM-SVK 7X1,5-2,5 | NSVM-SVK 14X1,5-2,5 | NSVM-SVK 21X1,5-2,5 | NSVM-SVK 40X1,5-2,5 | NSVM-SVK 75X1,5-2,5 | |
| NYJ-J 1X16RE | | | | | | | ● | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 1X25RM | | | | | | | ● | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 1X35RM | | | | | | | ● | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 1X50RM | | | | | | | | | | | ● | | | | | | | | | | | | | | | | |
| NYJ-J 1X70RM | | | | | | | | | | | ● | | | | | | | | | | | | | | | | |
| NYJ-J 1X95RM | | | | | | | | | | | ● | | | | | | | | | | | | | | | | |
| NYJ-J 1X120RM | | | | | | | | | | | | | | | | ● | | | | | | | | | | | |
| NYJ-J 1X150RM | | | | | | | | | | | | | | | | ● | | | | | | | | | | | |
| NYJ-J 1X185RM | | | | | | | | | | | | | | | | ● | | | | | | | | | | | |
| NYJ-J 1X240RM | | | | | | | | | | | | | | | | ● | | | | | | | | | | | |
| NYJ-J 1X300RM | | | | | | | | | | | | | | | | ● | | | | | | | | | | | |
| NYJ-J 3X1,5RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X2,5RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X4RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X6RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X10RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X16RE | | | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X25RM | | | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X50SM | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| NYJ-J 3X70SM | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| NYJ-J 3X95SM | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| NYJ-J 3X120SM | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| NYJ-J 3X25RM/16RE | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X35SM/16RE | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X50SM/25RM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYJ-J 3X70/35SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 3X95/50SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 3X120/70SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 3X150/70SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 3X185/95SM | | | | | | | | | | | | | | | | | ● | | | | | | | | | | |
| NYJ-J 3X240/120SM | | | | | | | | | | | | | | | | | ● | | | | | | | | | | |
| NYJ-J 4X1,5RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X2,5RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X4RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X6RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X10RE | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X16RE | | | | | ● | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X25RM | | | | | ● | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X35SM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X50SM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYJ-J 4X70SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 4X95SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 4X120SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 4X150SM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NYJ-J 4X185SM | | | | | | | | | | | | | | | | | ● | | | | | | | | | | |
| NYJ-J 4X240SM | | | | | | | | | | | | | | | | | ● | | | | | | | | | | |
| NYJ-J 5X1,5RE | | | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 5X2,5RE | | | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 5X4RE | | | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 5X6RE | | | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 5X10RE | | | | | | ● | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 5X16RE | | | | | | ● | | | | | | | | | | | | | | | | | | | | | |
| NYJ-J 5X25RM | | | | | | | | | ● | | | | | | | | | | | | | | | | | | |
| NYJ-J 7X1,5RE | | | | | | | | | | | | | | | | | | | | | | ● | | | | | |
| NYJ-J 10X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |
| NYJ-J 12X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |
| NYJ-J 14X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |
| NYJ-J 16X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |
| NYJ-J 19X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |
| NYJ-J 21X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |
| NYJ-J 24X1,5RE | | | | | | | | | | | | | | | | | | | | | | | ● | | | | |

Selection table low voltage joints

| Cable | joints | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|-----------------|-----------------|----------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------------|------------------------|--------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--|
| | NSVM-S 3X1,5-10 | NSVM-S 4X1,5-10 | NSVM-S 5X1,5-6 | NSVM-S 3X6-25 | NSVM-S 4X6-25 | NSVM-S 5X6-16 | NSVM-S 1X16-35 | NSVM-S 3X16-50 | NSVM-S 4X16-50 | NSVM-S 5X16-35 | NSVM-S 1X35-95 | NSVM-S 3X35-150 | NSVM-S 4X35-150 | NSVM-S 5X70-150 | NSVM-S 1X95-100 | NSVM-S 1X95-300 | NSVM-S 3X95-300 | NSVM-S 4X95-300 | NSVM-S 4X16/16-4X35/16 | NSVM-S 4X60/25-4X95/50 | NSVM-S 4X95/50-4X240/120 | NSVM-SVK 7X1,5-2,5 | NSVM-SVK 14X1,5-2,5 | NSVM-SVK 21X1,5-2,5 | NSVM-SVK 40X1,5-2,5 | NSVM-SVK 75X1,5-2,5 | |
| NYCY 0,6/1KV 3X16RE | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 4X1,5RE | | ● | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 4X2,5RE | | ● | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 4X4RE | | ● | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 4X6RE | | ● | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 4X10RE | | ● | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 4X16RE | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCY 0,6/1KV 5X1,5RE | | | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 5X2,5RE | | | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 5X4RE | | | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 5X6RE | | | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCY 0,6/1KV 5X10/RE | | | | | | ● | | | | | | | | | | | | | | | | | | | | | |
| NYCY 3X300/150SM | | | | | | | | | | | | | | | | | | | ● | | | | | | | | |
| NYCWY 0,6/1KV 3X10 | ● | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X16 | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X25RM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X35SM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X50SM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X70SM | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X95SM | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X120S | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X150S | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X185S | | | | | | | | | | | | | | | | | | ● | | | | | | | | | |
| NYCWY 0,6/1KV 3X240S | | | | | | | | | | | | | | | | | | ● | | | | | | | | | |
| NYCWY 0,6/1KV 3X25R | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X35SM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X50SM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X70SM | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X95 S | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X120 | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X150 | | | | | | | | | | | | | | ● | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 3X185 | | | | | | | | | | | | | | | | | | ● | | | | | | | | | |
| NYCWY 0,6/1KV 4X10RE | | | | | ● | | | | | | | | | | | | | | | | | | | | | | |
| NYCWY 0,6/1KV 4X16RE | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCWY 0,6/1KV 4X25RM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCWY 0,6/1KV 4X35SM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCWY 0,6/1KV 4X50SM | | | | | | | | | | | | | | | | | | | | | ● | | | | | | |
| NYCWY 0,6/1KV 4X70SM | | | | | | | | | | | | | | | | | | | | | ● | | | | | | |
| NYCWY 0,6/1KV 4X95SM | | | | | | | | | | | | | | | | | | | | | ● | | | | | | |
| NYCWY 0,6/1KV 4X120S | | | | | | | | | | | | | | | | | | | | | | ● | | | | | |
| NYCWY 0,6/1KV 4X150S | | | | | | | | | | | | | | | | | | | | | | ● | | | | | |
| NYCWY 0,6/1KV 4X185S | | | | | | | | | | | | | | | | | | | | | | ● | | | | | |
| NYCWY 0,6/1KV 4X240S | | | | | | | | | | | | | | | | | | | | | | ● | | | | | |
| NYCY 3X150SM | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| NYCY 3X185SM | | | | | | | | | | | | | ● | | | | | | | ● | | | | | | | |
| NYCY 3X240SM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCY 3X150SM | | | | | | | | | | | | ● | | | | | | | | | | | | | | | |
| NYCY 3X185SM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCY 3X240SM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NYCY 0,6/1KV 3X240 | | | | | | | | | | | | | | | | | | | ● | | | | | | | | |
| NYCY 5 X 35 QMM | | | | | | | | | ● | | | | | | | | | | | | | | | | | | |
| NAYY-J 4 X 16 QMM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NAYY-J 4 X 25 QMM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NAYY-J 4 X 35 QMM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NAYY-J 4 X 50 QMM | | | | | | | | ● | | | | | | | | | | | | | | | | | | | |
| NAYY-J 4 X 70 QMM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NAYY-J 4 X 95 QMM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NAYY-J 4 X 120 QMM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NAYY-J 4 X 150 QMM | | | | | | | | | | | | | ● | | | | | | | | | | | | | | |
| NAYY-J 4 X 185 QMM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |
| NAYY-J 4 X 240 QMM | | | | | | | | | | | | | | | | | | | | ● | | | | | | | |