

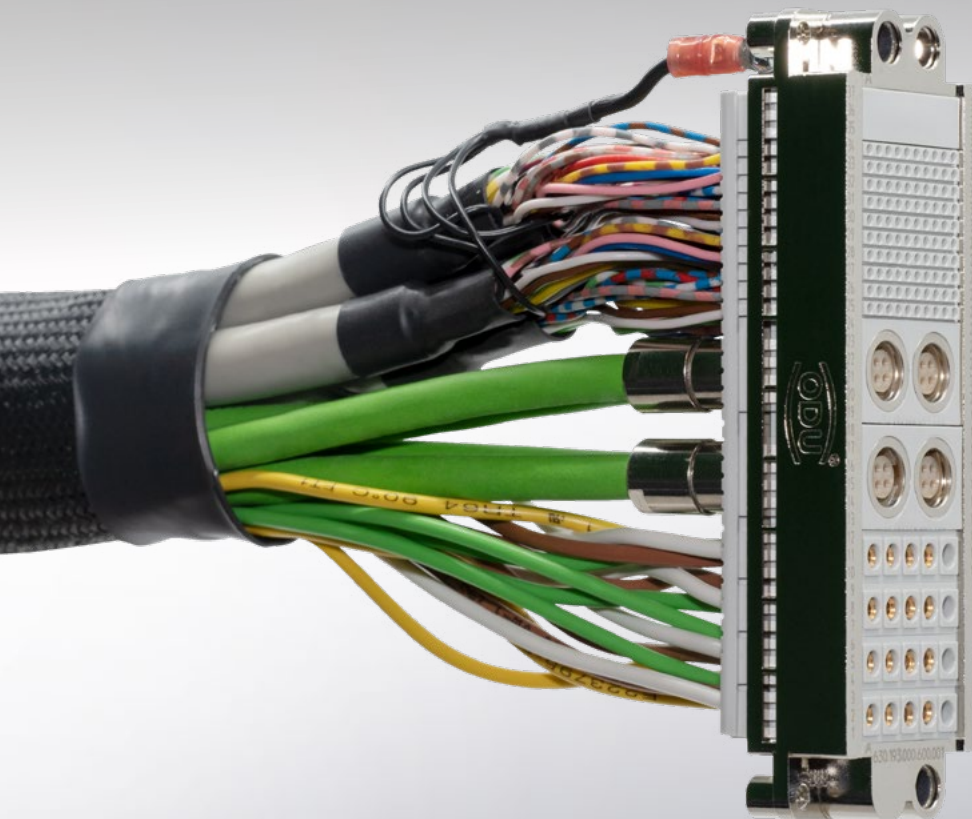
A PERFECT ALLIANCE.

# STANDARD CABLES AND ACCESSORIES

Cable assembly

ACCESSORIES FOR YOUR  
ASSEMBLED ODU PRODUCTS

Complete  
systems  
from one  
source



# CABLE ASSEMBLY

## FEATURES

- One point of contact for the complete solution
- Extended cable assembly experience
- High technical expertise regarding our proprietary connectors combined with an excellent technical understanding when it comes to processing third-party products
- Standard and customized overmolding via hot-melt and high-pressure processes in both straight and right-angled designs
- Silicone overmolding for medical products
- 100 % final inspection
- Custom labeling and cable printing
- State-of-the-art manufacturing facilities for small, medium and high volumes at production sites worldwide
- Close collaboration with leading cable manufacturers for the various markets
- Process-controlled solder and crimp monitoring from initial samples to full production
- Cleanroom production possible in accordance with ISO 14644-1:2015
- High-speed data technology system solutions
- Production in accordance with UL possible (File: E333666)

## APPLICATIONS

- Medical
- Industrial
- Test and measurement
- Military and security
- Automotive

## DISCLAIMER

These ODU specific connectors can transmit common data transmission protocols such as HDMI® 2.0, USB® 2.0, USB® 3.2 Gen 1x1 and USB® 3.2 Gen 2x2, but they are not HDMI®- and USB®-standard connectors.



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# ODU EXPRESS


## FEATURES

ODU Express is a proven ODU standard product that offers the advantage of fast availability. We therefore recommend to use ODU Express for time-sensitive projects in particular. Our Customer Consultants will be happy to advise you on current delivery times.

## EXAMPLE

Below is an example of a table and the way it is used on the following pages in this or a similar form.

Part number	Contacts	AWG	Contact type	Connection type	Series	Matching contacts
● 12345678	2	26–28	Socket	Crimp contact	Molex 1.25 mm	87 651 234
● 87654321	3	26–28	Socket	Crimp contact	Molex 1.25 mm	32 147 685
● 12348765	4	26–28	Socket	Crimp contact	Molex 1.25 mm	24 135 687



- ① Display of availability (color code see below)
- ② Part number (8 digits)

- ③ Technical informations (such as: number of cores, plocs, dimensions, etc.)
- ④ If applicable: part number of suitable components (e.g. sealing inserts)

## ODU EXPRESS COLOR CODE

The availability of the article is marked in front of the 8-digit part number. The colored markings indicate the following:

- The green dot marks ODU Express articles. These articles are in stock and thus immediately available – the first choice for time-sensitive projects.
- The orange dot, on the other hand, marks items that are not in stock and have to be manufactured – resulting in longer delivery times.

WE ARE PLEASED TO ADVISE YOU  
[cable-assembly@odu.de](mailto:cable-assembly@odu.de)



**” SUPPORT FROM START TO  
FINISH FROM ONE SOURCE**

Finding the best solution is our challenge.

# A PERFECT ALLIANCE

**Creating connections, building alliances, collaborating into the future:** Whether two technical components come together to form a unit or people come together to strive for great results – the key is to aspire to achieve superb results. This goal drives our work. **Perfect connections that inspire and deliver on the promises.**



## ODU GROUP OVERVIEW

- Almost 80 years of experience in connector technology
- Over 2,300 employees worldwide
- Sales subsidiaries in China, Denmark, France, Germany, Hong Kong, Italy, Japan, Korea, Romania, Sweden, UK and the US as well as 5 production and logistics sites
- All technologies under one roof: Design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly

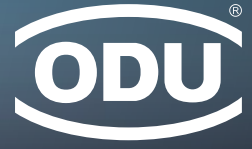
As of February 2020

## CERTIFICATES & APPROVALS

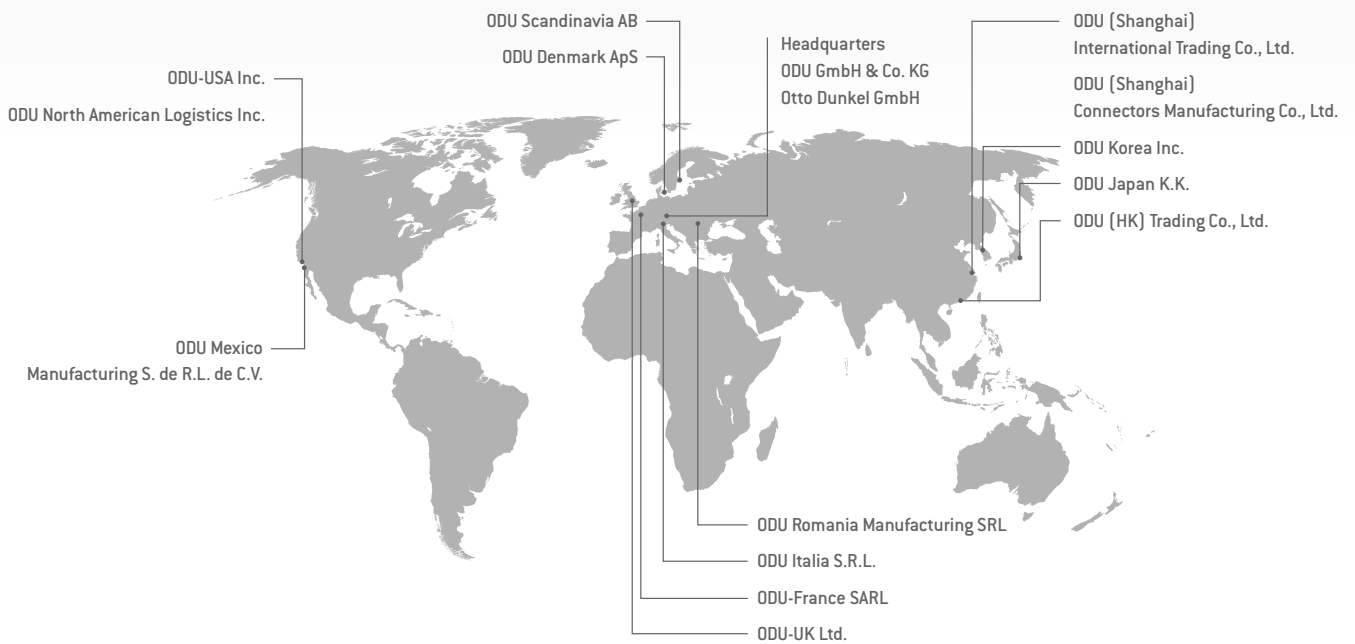
- ISO 9001
- IATF 16949
- ISO 13485
- ISO 14001
- ISO 50001
- Wide range of UL, CSA, VG and VDE approvals
- UL Wiring Harnesses certified

For a complete list of our certifications and approvals, please visit our website.





## WORLDWIDE CUSTOMER PROXIMITY

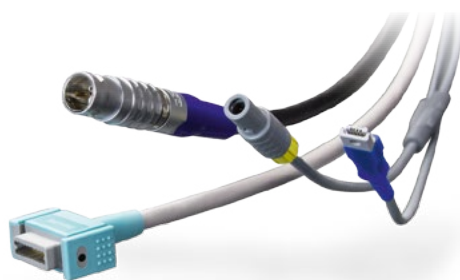


# CONNECTIONS THAT LIVE UP TO ANY REQUIREMENT



## ELECTRICAL CONTACTS

- Versatile contact technologies
- Outstanding reliability and durability
- Current-carrying capacity of up to 2,400 A
- Rugged and universal contact systems
- Stamping technology for customer-specific high volume solutions
- Very high vibration resistance
- Low, stable contact resistance



## CABLE ASSEMBLY

- Complete system solutions from one source based on years of expertise
- State-of-the-art production facilities with 100 % end testing
- Cable assembly available for ODU products
- Overmolding in silicone, hot-melt and high-pressure procedures
- Customer-specific labeling and cable printing
- Wide range of standard cables and accessories available
- Prototype, small series and high volume production
- Rapid prototyping



## CIRCULAR CONNECTORS

- Circular connector series in robust metal or plastic housing
- Contacts for soldering, crimping and PCB termination
- Different locking systems available: Push-Pull and Screw-Locking options or Break-Away function for quick release
- 2 up to 55 contacts
- Protection classes IP50 to IP69
- Autoclavable for medical applications
- Hybrid inserts for combined transmission
- Including cable assembly – system solution from one source



## APPLICATION AND CUSTOMER-SPECIFIC SOLUTIONS

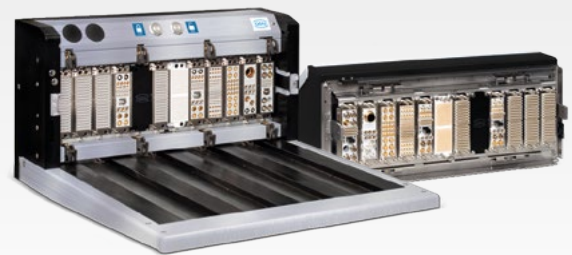
- Contacts, connectors and cable assemblies for the highest technical requirements as well as special applications
- First-class implementation expertise
- High level of vertical manufacturing – all competences and key technologies under one roof
- Expert advice based on mutual partnership
- Short development and production paths





## MODULAR CONNECTORS

- Application-specific hybrid interface
- For manual mating and automatic docking
- Flexible modular construction and highest packing density
- For the transmission of signals, power, high current, high voltage, HF signals (coax), media, high-speed data or fiber optics
- Variety of locking options available
- Mating cycles scalable as required from 10,000 to over 100,000 (1 million)
- Including cable assembly – system solution from one source



## MASS INTERCONNECT SOLUTIONS

- For testing printed circuit boards (PCBs) and electronically assembled units
- Innovative engagement option: electromechanical version
- 8 tensioning points stop the frame distorting
- Very high flexibility thanks to ODU-MAC® modules
- Adapter frame (ITA) with tolerance compensation
- Including cable assembly – system solution from one source



## HEAVY DUTY CONNECTORS

- Extremely durable even under extreme / harsh environments
- High vibration resistance
- Up to 400 A (higher currents upon request)



## PRINTED CIRCUIT BOARD CONNECTORS

- Maximum flexibility in application designs
- High resilience and outstanding quality
- Including cable assembly – system solution from one source

# OUR KNOW-HOW FOR YOUR SUCCESS

Customers rely on ODU technology wherever first-class, high-performance connector solutions are required.

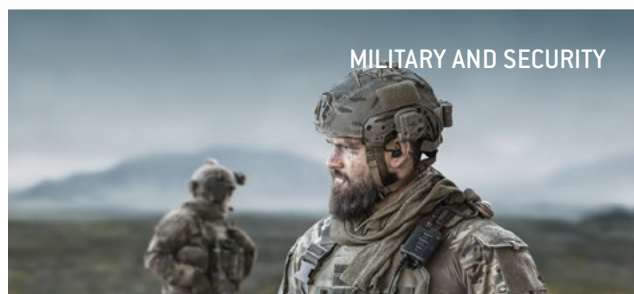
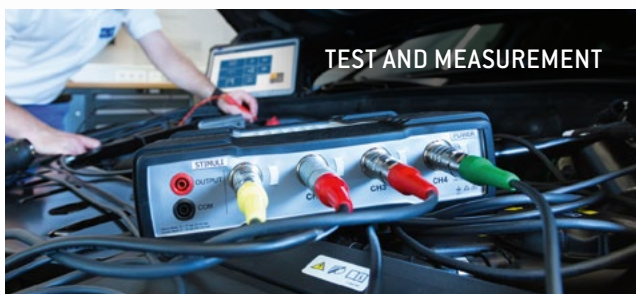
All our skills go into our products to ensure your success.

In addition to the top quality, reliable stability and maximum flexibility our products also stand for **dynamics, reliability, safety, precision, efficiency and sustainability.**

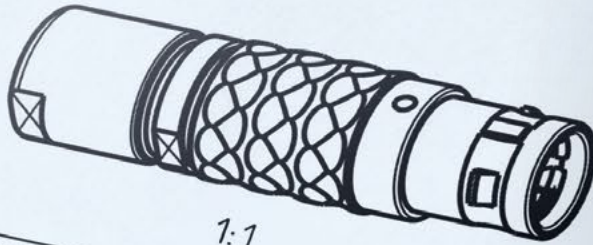
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## HIGH PERFORMANCE CONNECTOR TECHNOLOGY FOR DEMANDING KEY MARKETS

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S12L_C-P03MSNO-9900	> 9.0 - 9.9 mm
S12L_C-P03MSNO-9200	> 8.0 - 9.2 mm
S12L_C-P03MSNO-8200	> 7.0 - 8.2 mm
S12L_C-P03MSNO-7200	> 6.0 - 7.2 mm
S12L_C-P03MSNO-6200	> 5.0 - 6.2 mm
S12L_C-P03MSNO-5200	> 4.0 - 5.2 mm

## MORE THAN A CONNECTION

Contacts, connectors and cable assembly system solutions meeting the most demanding technical market requirements – ODU’s connector solutions and value-added services are characterized by their exclusive focus on meeting the customer’s needs.

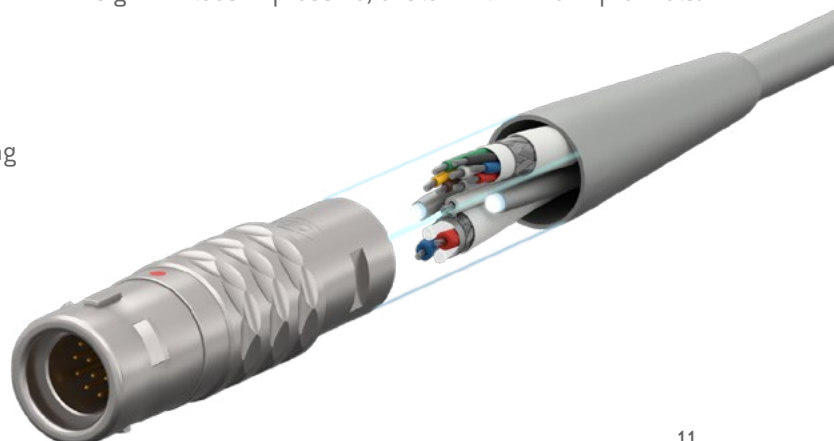
- Precise implementation of application-specific requirements regarding design, functionality, cost and exclusivity
- Modified connector solutions derived from standard products
- One-to-one local expertise and fair, friendly consulting
- Short development and production paths

## DEVELOPMENT OF CUSTOM SOLUTIONS

Demands that can’t be pigeon-holed call for creative specialists who think outside the box. ODU offers the type of expertise that focuses solely on the specific requirements of our customers.

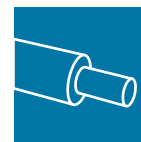
For every development order we get, we not only perform a thorough check to make sure it’s feasible, we intensively incorporate our customers in the ongoing design process.

This guarantees impressive, custom-fit final end products.



# SINGLE WIRE PVC

UL-Style 1061 / 10002 | UL-Style 1007 / 1569 | UL-Style 1015



## TECHNICAL DATA

Conductor	TPC – tin plated copper acc. to EN13602
Insulation	UL-PVC semi rigid (UL-Style 1061 / 10002) UL-PVC 105 °C (UL-Style 1007 / 1569 & 1015)
Temperature range in motion	–10 up to + 105 °C
Temperature range at rest	–30 up to + 105 °C
Spark test	2.500 V (UL-Style 1061 / 10002) 3.000 V (UL-Style 1007 / 1569) 6.000 V (UL-Style 1015)
Operating voltage	300 V (UL-Style 1061 / 10002 & 1007 / 1569) 600 V (UL-Style 1015)

### Cross section 0.08 mm<sup>2</sup> / AWG 28 – UL-style 1061 / 10002

Composition: 7 x 0.127 mm

Wall thickness of insulation: min. 0.23 mm

Part number	Color	Cable-Ø in mm
● 50 155 034	Black	0.90 ± 0.05
● 50 155 035	Brown	0.90 ± 0.05
● 50 155 036	Red	0.90 ± 0.05
● 50 155 037	Orange	0.90 ± 0.05
● 50 155 038	Yellow	0.90 ± 0.05
● 50 155 039	Green	0.90 ± 0.05
● 50 155 040	Blue	0.90 ± 0.05
● 50 155 041	Violet	0.90 ± 0.05
● 50 155 042	Gray	0.90 ± 0.05
● 50 155 043	White	0.90 ± 0.05
● 50 287 871	Green-Yellow	0.90 ± 0.05

### Cross section 0.14 mm<sup>2</sup> / AWG 26 – UL-style 1061 / 10002

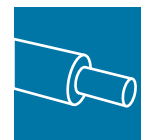
Composition: 7 x 0.160 mm

Wall thickness of insulation: min. 0.23 mm

Part number	Color	Cable-Ø in mm
● 50 155 054	Black	1.00 ± 0.05
● 50 155 055	Brown	1.00 ± 0.05
● 50 155 056	Red	1.00 ± 0.05
● 50 155 057	Orange	1.00 ± 0.05
● 50 155 058	Yellow	1.00 ± 0.05
● 50 155 059	Green	1.00 ± 0.05
● 50 155 060	Blue	1.00 ± 0.05
● 50 155 061	Violet	1.00 ± 0.05
● 50 155 062	Gray	1.00 ± 0.05
● 50 155 063	White	1.00 ± 0.05
● 50 287 864	Green-Yellow	1.00 ± 0.05

# SINGLE WIRE PVC

UL-Style 1061 / 10002 | UL-Style 1007 / 1569 | UL-Style 1015



## Cross section 0.25 mm<sup>2</sup> / AWG 24 – UL-style 1061 / 10002

Composition: 7 x 0.203 mm

Wall thickness of insulation: min. 0.23 mm

Part number	Color	Cable-Ø in mm
● 50 155 281	Black	1.15 ± 0.05
● 50 155 356	Brown	1.15 ± 0.05
● 50 155 357	Red	1.15 ± 0.05
● 50 155 358	Orange	1.15 ± 0.05
● 50 155 359	Yellow	1.15 ± 0.05
● 50 155 360	Green	1.15 ± 0.05
● 50 155 361	Blue	1.15 ± 0.05
● 50 155 362	Violet	1.15 ± 0.05
● 50 155 363	Gray	1.15 ± 0.05
● 50 155 364	White	1.15 ± 0.05
● 50 287 861	Green-Yellow	1.15 ± 0.05

## Cross section 0.34 mm<sup>2</sup> / AWG 22 – UL-style 1061 / 10002

Composition: 7 x 0.254 mm

Wall thickness of insulation: min. 0.23 mm

Part number	Color	Cable-Ø in mm
● 50 155 074	Black	1.30 ± 0.05
● 50 155 075	Brown	1.30 ± 0.05
● 50 155 076	Red	1.30 ± 0.05
● 50 155 077	Orange	1.30 ± 0.05
● 50 155 078	Yellow	1.30 ± 0.05
● 50 155 079	Green	1.30 ± 0.05
● 50 155 080	Blue	1.30 ± 0.05
● 50 155 081	Violet	1.30 ± 0.05
● 50 155 082	Gray	1.30 ± 0.05
● 50 155 083	White	1.30 ± 0.05
● 50 287 856	Green-Yellow	1.30 ± 0.05

## Cross section 0.50 mm<sup>2</sup> / AWG 20 – UL-style 1061 / 10002

Composition: 7 x 0.320 mm

Wall thickness of insulation: min. 0.23 mm

Part number	Color	Cable-Ø in mm
● 50 155 094	Black	1.50 ± 0.05
● 50 155 095	Brown	1.50 ± 0.05
● 50 155 096	Red	1.50 ± 0.05
● 50 155 097	Orange	1.50 ± 0.05
● 50 155 098	Yellow	1.50 ± 0.05
● 50 155 099	Green	1.50 ± 0.05
● 50 155 100	Blue	1.50 ± 0.05
● 50 155 101	Violet	1.50 ± 0.05
● 50 155 102	Gray	1.50 ± 0.05
● 50 155 103	White	1.50 ± 0.05
● 50 287 851	Green-Yellow	1.50 ± 0.05

## Cross section 1.00 mm<sup>2</sup> / AWG 18 – UL-Style 1007 / 1569

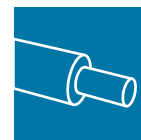
Composition: 28 x 0.2 mm

Wall thickness of insulation: min. 0.38 mm

Part number	Color	Cable-Ø in mm
● 50 155 114	Black	2.15 ± 0.10
● 50 155 115	Brown	2.15 ± 0.10
● 50 155 116	Red	2.15 ± 0.10
● 50 155 117	Orange	2.15 ± 0.10
● 50 155 118	Yellow	2.15 ± 0.10
● 50 155 119	Green	2.15 ± 0.10
● 50 155 120	Blue	2.15 ± 0.10
● 50 155 121	Violet	2.15 ± 0.10
● 50 155 122	Gray	2.15 ± 0.10
● 50 155 123	White	2.15 ± 0.10
● 50 155 180	Green-Yellow	2.15 ± 0.10

# SINGLE WIRE PVC

UL-Style 1061 / 10002 | UL-Style 1007 / 1569 | UL-Style 1015



## Cross section 1.5 mm<sup>2</sup> / AWG 16 – UL-Style 1007 / 1569

Composition: 41 x 0.203 mm

Wall thickness of insulation: nom. 0.38 mm

Part number	Color	Cable-Ø in mm
● 50 155 182	Black	2.50 ± 0.10
● 50 155 183	Brown	2.50 ± 0.10
● 50 155 184	Red	2.50 ± 0.10
● 50 155 185	Orange	2.50 ± 0.10
● 50 155 186	Yellow	2.50 ± 0.10
● 50 155 187	Green	2.50 ± 0.10
● 50 155 188	Blue	2.50 ± 0.10
● 50 155 189	Violet	2.50 ± 0.10
● 50 155 190	Gray	2.50 ± 0.10
● 50 155 191	White	2.50 ± 0.10
● 50 155 202	Green-Yellow	2.50 ± 0.10

## Cross section 2.5 mm<sup>2</sup> / AWG 14 – UL-Style 1569

Composition: 19 x 0.375 mm

Wall thickness of insulation: min. 0.38 mm

Part number	Color	Cable-Ø in mm
● 50 155 134	Black	2.80 ± 0.10
● 50 155 135	Brown	2.80 ± 0.10
● 50 155 136	Red	2.80 ± 0.10
● 50 155 137	Orange	2.80 ± 0.10
● 50 155 138	Yellow	2.80 ± 0.10
● 50 155 139	Green	2.80 ± 0.10
● 50 155 140	Blue	2.80 ± 0.10
● 50 155 141	Violet	2.80 ± 0.10
● 50 155 142	Gray	2.80 ± 0.10
● 50 155 143	White	2.80 ± 0.10
● 50 155 181	Green-Yellow	2.80 ± 0.10

## Cross section 4.0 mm<sup>2</sup> / AWG 12 – UL-Style 1015

Composition: 19 x 0.475 mm

Wall thickness of insulation: 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 289 344	Black	4.00 ± 0.10
● 50 289 345	Brown	4.00 ± 0.10
● 50 289 346	Red	4.00 ± 0.10
● 50 289 825	Orange	4.00 ± 0.10
● 50 289 347	Yellow	4.00 ± 0.10
● 50 289 348	Green	4.00 ± 0.10
● 50 289 349	Blue	4.00 ± 0.10
● 50 289 351	Violet	4.00 ± 0.10
● 50 289 352	Gray	4.00 ± 0.10
● 50 289 353	White	4.00 ± 0.10
● 50 289 354	Green-Yellow	4.00 ± 0.10

## Cross section 6.0 mm<sup>2</sup> / AWG 10 – UL-Style 1015

Composition: 105 x 0.254 mm

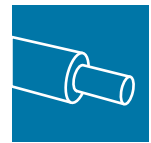
Wall thickness of insulation: 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 289 338	Black	5.10 ± 0.10
● 50 289 339	Brown	5.10 ± 0.10
● 50 289 340	Blue	5.10 ± 0.10
● 50 289 341	Gray	5.10 ± 0.10
● 50 289 342	White	5.10 ± 0.10
● 50 289 343	Green-Yellow	5.10 ± 0.10



# SINGLE WIRE PVC

UL-Style 1061 / 10002 | UL-Style 1007 / 1569 | UL-Style 1015



## Cross section 10.0 mm<sup>2</sup> / AWG 8 – UL-Style 1015

Composition: 72 x 0.39 mm

Wall thickness of insulation: 1.14 mm

Part number	Color	Cable-Ø in mm
● 50 289 334	Black	6.60 ± 0.10
● 50 289 335	Brown	6.60 ± 0.10
● 50 289 336	Blue	6.60 ± 0.10
● 50 289 337	Green-Yellow	6.60 ± 0.10

## Cross section 16.0 mm<sup>2</sup> / AWG 6 – UL-Style 1015

Composition: 266 x 0.25 mm

Wall thickness of insulation: 1.52 mm

Part number	Color	Cable-Ø in mm
● 50 289 330	Black	8.70 ± 0.10
● 50 289 331	Brown	8.70 ± 0.10
● 50 289 332	Blue	8.70 ± 0.10
● 50 289 333	Green-Yellow	8.70 ± 0.10

## Cross section 25.0 mm<sup>2</sup> / AWG 4 – UL-Style 1015

Composition: 196 x 0.40 mm

Wall thickness of insulation: 1.52 mm

Part number	Color	Cable-Ø in mm
● 50 282 013	Black	10.00 ± 0.10
● 50 282 014	Brown	10.00 ± 0.10
● 50 282 020	Blue	10.00 ± 0.10
● 50 287 757	Green-Yellow	10.00 ± 0.10

## Cross section 35.0 mm<sup>2</sup> / AWG 2 – UL-Style 1015

Composition: EN 60228 Kl. 5

Wall thickness of insulation: 1.5 mm

Part number	Color	Cable-Ø in mm
● 50 287 752	Black	11.30 ± 0.30
● 50 288 182	Brown	11.30 ± 0.30
● 50 287 755	Blue	11.30 ± 0.30
● 50 287 756	Green-Yellow	11.30 ± 0.30

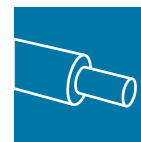
## Cross section 50.0 mm<sup>2</sup> / AWG 1 – UL-Style 1015

Composition: EN 60228 Kl. 5

Wall thickness of insulation: 2.0 mm

Part number	Color	Cable-Ø in mm
● 50 287 749	Black	13.50 ± 0.40
● 50 288 199	Green-Yellow	13.50 ± 0.40

# SINGLE WIRE PTFE



## TECHNICAL DATA

Conductor	SPC – silver plated copper acc. to EN13602
Insulation	PTFE – 5Y
Temperature range in motion	–65 up to + 200 °C
Temperature range at rest	–65 up to + 200 °C
Spark test	3.400 V
Operating voltage	600 V

### Cross section 0.08 mm<sup>2</sup> / AWG 28

Composition: 7 x 0.127 mm

Wall thickness of insulation: nom. 0.25 mm

Part number	Color	Cable-Ø in mm
● 50 155 650	Black	0.89 ± 0.10
● 50 155 651	Brown	0.89 ± 0.10
● 50 155 652	Red	0.89 ± 0.10
● 50 155 653	Orange	0.89 ± 0.10
● 50 155 654	Yellow	0.89 ± 0.10
● 50 155 655	Green	0.89 ± 0.10
● 50 155 656	Blue	0.89 ± 0.10
● 50 155 657	Violet	0.89 ± 0.10
● 50 155 658	Gray	0.89 ± 0.10
● 50 155 659	White	0.89 ± 0.10

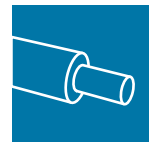
### Cross section 0.14 mm<sup>2</sup> / AWG 26

Composition: 7 x 0.160 mm

Wall thickness of insulation: nom. 0.25 mm

Part number	Color	Cable-Ø in mm
● 50 243 012	Black	0.99 ± 0.10
● 50 243 006	Brown	0.99 ± 0.10
● 50 243 011	Red	0.99 ± 0.10
● 50 284 961	Orange	0.99 ± 0.10
● 50 243 008	Yellow	0.99 ± 0.10
● 50 243 007	Green	0.99 ± 0.10
● 50 243 010	Blue	0.99 ± 0.10
● 50 243 013	Violet	0.99 ± 0.10
● 50 243 009	Gray	0.99 ± 0.10
● 50 243 005	White	0.99 ± 0.10

# SINGLE WIRE PTFE



## Cross section 0.25 mm<sup>2</sup> / AWG 24

Composition: 19 x 0.127 mm

Wall thickness of insulation: nom. 0.25 mm

Part number	Color	Cable-Ø in mm
● 50 155 319	Black	1.13 ± 0.10
● 50 154 980	Brown	1.13 ± 0.10
● 50 154 971	Red	1.13 ± 0.10
● 50 154 972	Orange	1.13 ± 0.10
● 50 154 976	Yellow	1.13 ± 0.10
● 50 154 970	Green	1.13 ± 0.10
● 50 154 975	Blue	1.13 ± 0.10
● 50 154 968	Violet	1.13 ± 0.10
● 50 154 979	Gray	1.13 ± 0.10
● 50 154 981	White	1.13 ± 0.10

## Cross section 0.34 mm<sup>2</sup> / AWG 22

Composition: 19 x 0.160 mm

Wall thickness of insulation: nom. 0.27 mm

Part number	Color	Cable-Ø in mm
● 50 154 965	Black	1.27 ± 0.10
● 50 154 967	Brown	1.27 ± 0.10
● 50 154 964	Red	1.27 ± 0.10
● 50 155 269	Orange	1.27 ± 0.10
● 50 154 962	Yellow	1.27 ± 0.10
● 50 155 325	Green	1.27 ± 0.10
● 50 154 963	Blue	1.27 ± 0.10
● 50 155 326	Violet	1.27 ± 0.10
● 50 154 961	Gray	1.27 ± 0.10
● 50 154 966	White	1.27 ± 0.10

## Cross section 0.5 mm<sup>2</sup> / AWG 20

Composition: 19 x 0.203 mm

Wall thickness of insulation: nom. 0.25 mm

Part number	Color	Cable-Ø in mm
● 50 155 280	Black	1.47 ± 0.10
● 50 155 337	Brown	1.47 ± 0.10
● 50 155 338	Red	1.47 ± 0.10
● 50 155 339	Orange	1.47 ± 0.10
● 50 155 340	Yellow	1.47 ± 0.10
● 50 155 341	Green	1.47 ± 0.10
● 50 155 342	Blue	1.47 ± 0.10
● 50 155 343	Violet	1.47 ± 0.10
● 50 155 344	Gray	1.47 ± 0.10
● 50 155 345	White	1.47 ± 0.10

## Cross section 1.0 mm<sup>2</sup> / AWG 18

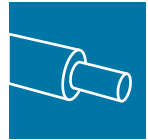
Composition: 19 x 0.254 mm

Wall thickness of insulation: nom. 0.25 mm

Part number	Color	Cable-Ø in mm
● 50 287 888	Black	1.75 ± 0.10
● 50 287 882	Brown	1.75 ± 0.10
● 50 287 887	Red	1.75 ± 0.10
● 50 287 890	Orange	1.75 ± 0.10
● 50 287 884	Yellow	1.75 ± 0.10
● 50 287 883	Green	1.75 ± 0.10
● 50 287 886	Blue	1.75 ± 0.10
● 50 287 889	Violet	1.75 ± 0.10
● 50 287 885	Gray	1.75 ± 0.10
● 50 287 881	White	1.75 ± 0.10

# AUTOMOTIVE WIRE

FLY / FLRY acc. to ISO 6722



## TECHNICAL DATA

Conductor	bare copper acc. to EN13602
Insulation	PVC acc. to ISO 6722 Class A (FLY) PVC acc. to ISO 6722 Class B (FLRY)
Temperature range in motion	-40 up to + 85 °C (FLY) -40 up to + 105 °C (FLRY)
Temperature range at rest	-25 up to + 85 °C (FLY) -40 up to + 105 °C (FLRY)
Spark test	1.000 V
Operating voltage	60 V

### Cross section 0.35 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

Composition: 7 x 0.25 mm – Typ A

Wall thickness of insulation: min. 0.25 mm

Part number	Color	Cable-Ø in mm
● 50 243 457	Black	1.30 ± 0.05
● 50 243 459	Brown	1.30 ± 0.05
● 50 243 458	Red	1.30 ± 0.05
● 50 288 155	Orange	1.30 ± 0.05
● 50 288 150	Yellow	1.30 ± 0.05
● 50 288 149	Green	1.30 ± 0.05
● 50 288 153	Blue	1.30 ± 0.05
● 50 288 154	Violet	1.30 ± 0.05
● 50 288 151	Gray	1.30 ± 0.05
● 50 247 115	White	1.30 ± 0.05
● 50 288 152	Pink	1.30 ± 0.05

### Cross section 0.50 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

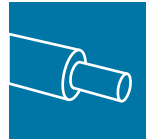
Composition: 19 x 0.19 mm – Typ A

Wall thickness of insulation: min. 0.28 mm

Part number	Color	Cable-Ø in mm
● 50 155 721	Black	1.60 ± 0.10
● 50 243 475	Brown	1.60 ± 0.10
● 50 155 722	Red	1.60 ± 0.10
● 50 253 018	Orange	1.60 ± 0.10
● 50 252 321	Yellow	1.60 ± 0.10
● 50 252 320	Green	1.60 ± 0.10
● 50 155 261	Blue	1.60 ± 0.10
● 50 288 148	Violet	1.60 ± 0.10
● 50 288 147	Gray	1.60 ± 0.10
● 50 155 260	White	1.60 ± 0.10
● 50 274 458	Pink	1.60 ± 0.10

# AUTOMOTIVE WIRE

FLY / FLRY acc. to ISO 6722



## Cross section 0.75 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

Composition: 24 x 0.20 mm – Typ B

Wall thickness of insulation: min. 0.30 mm

Part number	Color	Cable-Ø in mm
● 50 243 479	Black	1.90 ± 0.10
● 50 243 482	Brown	1.90 ± 0.10
● 50 155 703	Red	1.90 ± 0.10
● 50 288 116	Orange	1.90 ± 0.10
● 50 288 111	Yellow	1.90 ± 0.10
● 50 288 110	Green	1.90 ± 0.10
● 50 288 114	Blue	1.90 ± 0.10
● 50 288 115	Violet	1.90 ± 0.10
● 50 288 112	Gray	1.90 ± 0.10
● 50 288 109	White	1.90 ± 0.10
● 50 288 113	Pink	1.90 ± 0.10

## Cross section 1.00 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

Composition: 32 x 0.20 mm – Typ B

Wall thickness of insulation: min. 0.30 mm

Part number	Color	Cable-Ø in mm
● 50 243 535	Black	2.10 ± 0.10
● 50 155 252	Brown	2.10 ± 0.10
● 50 155 254	Red	2.10 ± 0.10
● 50 288 086	Orange	2.10 ± 0.10
● 50 288 081	Yellow	2.10 ± 0.10
● 50 288 080	Green	2.10 ± 0.10
● 50 288 084	Blue	2.10 ± 0.10
● 50 288 085	Violet	2.10 ± 0.10
● 50 288 082	Gray	2.10 ± 0.10
● 50 248 600	White	2.10 ± 0.10
● 50 288 083	Pink	2.10 ± 0.10

## Cross section 1.50 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

Composition: 30 x 0.25 mm – Typ B

Wall thickness of insulation: min. 0.35 mm

Part number	Color	Cable-Ø in mm
● 50 243 537	Black	2.40 ± 0.10
● 50 243 540	Brown	2.40 ± 0.10
● 50 243 539	Red	2.40 ± 0.10
● 50 288 070	Orange	2.40 ± 0.10
● 50 288 065	Yellow	2.40 ± 0.10
● 50 288 064	Green	2.40 ± 0.10
● 50 288 068	Blue	2.40 ± 0.10
● 50 288 069	Violet	2.40 ± 0.10
● 50 288 066	Gray	2.40 ± 0.10
● 50 288 063	White	2.40 ± 0.10
● 50 288 067	Pink	2.40 ± 0.10

## Cross section 2.50 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

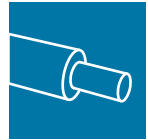
Composition: 50 x 0.25 mm – Typ B

Wall thickness of insulation: min. 0.35 mm

Part number	Color	Cable-Ø in mm
● 50 243 544	Black	3.00 ± 0.15
● 50 243 546	Brown	3.00 ± 0.15
● 50 243 545	Red	3.00 ± 0.15
● 50 288 009	Orange	3.00 ± 0.15
● 50 288 005	Yellow	3.00 ± 0.15
● 50 288 004	Green	3.00 ± 0.15
● 50 288 007	Blue	3.00 ± 0.15
● 50 288 008	Violet	3.00 ± 0.15
● 50 288 006	Gray	3.00 ± 0.15
● 50 247 116	White	3.00 ± 0.15

# AUTOMOTIVE WIRE

FLY / FLRY acc. to ISO 6722



## Cross section 4.00 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

Composition: 56 x 0.30 mm – Typ B

Wall thickness of insulation: nom. 0.40 mm

Part number	Color	Cable-Ø in mm
● 50 243 547	Black	3.70 ± 0.15
● 50 243 553	Brown	3.70 ± 0.15
● 50 243 552	Red	3.70 ± 0.15
● 50 287 993	Yellow	3.70 ± 0.15
● 50 287 992	Green	3.70 ± 0.15
● 50 287 995	Blue	3.70 ± 0.15
● 50 287 994	Gray	3.70 ± 0.15
● 50 287 986	White	3.70 ± 0.15

## Cross section 6.00 mm<sup>2</sup> / FLRY acc. to ISO 6722 Class B

Composition: 84 x 0.30 mm – Typ B

Wall thickness of insulation: nom. 0.40 mm

Part number	Color	Cable-Ø in mm
● 50 243 555	Black	4.30 ± 0.15
● 50 243 557	Brown	4.30 ± 0.15
● 50 243 556	Red	4.30 ± 0.15
● 50 274 407	Blue	4.30 ± 0.15
● 50 287 982	White	4.30 ± 0.15

## Cross section 10.00 mm<sup>2</sup> / FLY acc. to ISO 6722 Class A

Composition: 80 x 0.40 mm

Part number	Color	Cable-Ø in mm
● 50 287 969	Black	6.50 ± 0.10
● 50 287 963	Brown	6.50 ± 0.10
● 50 287 965	Red	6.50 ± 0.10

## Cross section 16.00 mm<sup>2</sup> / FLY acc. to ISO 6722 Class A

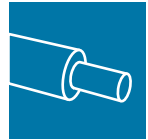
Composition: 126 x 0.40 mm

Part number	Color	Cable-Ø in mm
● 50 287 961	Black	8.30 ± 0.10
● 50 287 958	Brown	8.30 ± 0.10
● 50 287 960	Red	8.30 ± 0.10



# AUTOMOTIVE WIRE

FLY / FLRY acc. to ISO 6722



## Cross section 25.00 mm<sup>2</sup> / FLY acc. to ISO 6722 Class A

Composition: 196 x 0.40 mm

Part number	Color	Cable-Ø in mm
● 50287956	Black	10.40 ± 0.10
● 50287955	Brown	10.40 ± 0.10
● 50287957	Red	10.40 ± 0.10

## Cross section 35.00 mm<sup>2</sup> / FLY acc. to ISO 6722 Class A

Composition: 276 x 0.40 mm

Part number	Color	Cable-Ø in mm
● 50287953	Black	10.80 ± 0.3
● 50287947	Red	10.80 ± 0.3

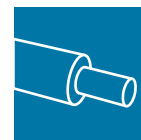
## Cross section 50.00 mm<sup>2</sup> / FLY acc. to ISO 6722 Class A

Composition: max. 396 x 0.41 mm

Part number	Color	Cable-Ø in mm
● 50287946	Black	13.50 ± 0.4

# HARMONISED WIRES

H05V-K / H07V-K



## TECHNICAL DATA

Conductor	bare copper acc. to EN13602
Insulation	PVC acc. to VDE 0207 P4 / EN 50363-3
Temperature range in motion	-5 up to +70 °C
Temperature range at rest	-30 up to +70 °C
Spark test	2.000 V (H05V-K) 2.500 V (H07V-K)
Operating voltage U <sub>0</sub> /u	300 / 500 V (H05V-K) 450 / 750 V (H07V-K)

### Cross section 0.50 mm<sup>2</sup> / H05V-K acc. to EN 50525-2-31

Composition: 16 x 0.20 mm

Wall thickness of insulation: min. 0.60 mm

Part number	Color	Cable-Ø in mm
● 50 154 784	Black	2.30 ± 0.20
● 50 155 377	Brown	2.30 ± 0.20
● 50 155 378	Red	2.30 ± 0.20
● 50 155 379	Orange	2.30 ± 0.20
● 50 155 380	Yellow	2.30 ± 0.20
● 50 155 381	Green	2.30 ± 0.20
● 50 155 382	Blue	2.30 ± 0.20
● 50 155 383	Violet	2.30 ± 0.20
● 50 155 384	Gray	2.30 ± 0.20
● 50 155 385	White	2.30 ± 0.20
● 50 155 386	Green-Yellow	2.30 ± 0.20

### Cross section 0.75 mm<sup>2</sup> / H05V-K acc. to EN 50525-2-31

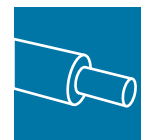
Composition: 24 x 0.20 mm

Wall thickness of insulation: min. 0.60 mm

Part number	Color	Cable-Ø in mm
● 50 154 798	Black	2.45 ± 0.25
● 50 155 387	Brown	2.45 ± 0.25
● 50 154 997	Red	2.45 ± 0.25
● 50 155 388	Orange	2.45 ± 0.25
● 50 155 389	Yellow	2.45 ± 0.25
● 50 155 390	Green	2.45 ± 0.25
● 50 155 391	Blue	2.45 ± 0.25
● 50 155 392	Violet	2.45 ± 0.25
● 50 155 393	Gray	2.45 ± 0.25
● 50 155 394	White	2.45 ± 0.25
● 50 155 395	Green-Yellow	2.45 ± 0.25

# HARMONISED WIRES

H05V-K / H07V-K



## Cross section 1.00 mm<sup>2</sup> / H05V-K acc. to EN 50525-2-31

Composition: 32 x 0.20 mm

Wall thickness of insulation: min. 0.60 mm

Part number	Color	Cable-Ø in mm
● 50 154 768	Black	2.60 ± 0.20
● 50 155 396	Brown	2.60 ± 0.20
● 50 154 881	Red	2.60 ± 0.20
● 50 155 397	Orange	2.60 ± 0.20
● 50 155 398	Yellow	2.60 ± 0.20
● 50 155 399	Green	2.60 ± 0.20
● 50 154 771	Blue	2.60 ± 0.20
● 50 154 797	Violet	2.60 ± 0.20
● 50 154 773	Gray	2.60 ± 0.20
● 50 154 769	White	2.60 ± 0.20
● 50 154 767	Green-Yellow	2.60 ± 0.20

## Cross section 1.50 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

Composition: 30 x 0.25 mm

Wall thickness of insulation: nom. 0.70 mm

Part number	Color	Cable-Ø in mm
● 50 154 787	Black	3.10 ± 0.30
● 50 155 400	Brown	3.10 ± 0.30
● 50 154 794	Red	3.10 ± 0.30
● 50 155 401	Orange	3.10 ± 0.30
● 50 155 402	Yellow	3.10 ± 0.30
● 50 154 836	Green	3.10 ± 0.30
● 50 154 772	Blue	3.10 ± 0.30
● 50 155 403	Violet	3.10 ± 0.30
● 50 154 795	Gray	3.10 ± 0.30
● 50 154 770	White	3.10 ± 0.30
● 50 154 689	Green-Yellow	3.10 ± 0.30

## Cross section 2.50 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

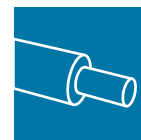
Composition: 50 x 0.25 mm

Wall thickness of insulation: min. 0.80 mm

Part number	Color	Cable-Ø in mm
● 50 154 746	Black	3.75 ± 0.35
● 50 154 837	Brown	3.75 ± 0.35
● 50 154 838	Red	3.75 ± 0.35
● 50 155 405	Orange	3.75 ± 0.35
● 50 155 406	Yellow	3.75 ± 0.35
● 50 155 407	Green	3.75 ± 0.35
● 50 155 408	Blue	3.75 ± 0.35
● 50 155 409	Violet	3.75 ± 0.35
● 50 155 410	Gray	3.75 ± 0.35
● 50 155 411	White	3.75 ± 0.35
● 50 154 793	Green-Yellow	3.75 ± 0.35

# HARMONISED WIRES

H05V-K / H07V-K



## Cross section 4.00 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

Composition: 56 x 0.30 mm

Wall thickness of insulation: nom. 0.80 mm

Part number	Color	Cable-Ø in mm
● 50 154 839	Black	4.35 ± 0.45
● 50 155 412	Brown	4.35 ± 0.45
● 50 155 413	Red	4.35 ± 0.45
● 50 155 414	Orange	4.35 ± 0.45
● 50 155 415	Yellow	4.35 ± 0.45
● 50 155 416	Green	4.35 ± 0.45
● 50 155 417	Blue	4.35 ± 0.45
● 50 155 418	Violet	4.35 ± 0.45
● 50 155 419	Gray	4.35 ± 0.45
● 50 155 420	White	4.35 ± 0.45
● 50 154 688	Green-Yellow	4.35 ± 0.45

## Cross section 6.00 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

Composition: 84 x 0.30 mm

Wall thickness of insulation: min. 0.80 mm

Part number	Color	Cable-Ø in mm
● 50 155 421	Black	4.85 ± 0.45
● 50 154 840	Brown	4.85 ± 0.45
● 50 154 792	Blue	4.85 ± 0.45
● 50 154 747	Green-Yellow	4.85 ± 0.45

## Cross section 10.00 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

Composition: EN 60228; Kl. 5

Wall thickness of insulation: nom. 1.00 mm

Part number	Color	Cable-Ø in mm
● 50 154 788	Black	6.25 ± 0.55
● 50 154 791	Brown	6.25 ± 0.55
● 50 154 790	Blue	6.25 ± 0.55
● 50 154 789	Green-Yellow	6.25 ± 0.55

## Cross section 16.00 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

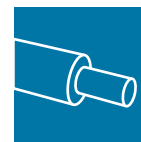
Composition: EN 60228; Kl. 5

Wall thickness of insulation: min. 1.0 mm

Part number	Color	Cable-Ø in mm
● 50 282 086	Black	7.40 ± 0.7
● 50 282 087	Brown	7.40 ± 0.7
● 50 282 092	Blue	7.40 ± 0.7
● 50 282 096	Green-Yellow	7.40 ± 0.7

# HARMONISED WIRES

H05V-K / H07V-K



## Cross section 25.00 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

Composition: EN 60228; Kl. 5

Wall thickness of insulation: min. 1.2 mm

Part number	Color	Cable-Ø in mm
● 50 154 905	Black	9.30 ± 0.9
● 50 282 060	Brown	9.30 ± 0.9
● 50 282 065	Blue	9.30 ± 0.9
● 50 282 069	Green-Yellow	9.30 ± 0.9

## Cross section 35.00 mm<sup>2</sup> / H07V-K acc. to EN 50525-2-31

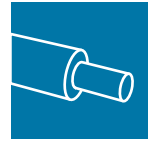
Composition: EN 60228; Kl. 5

Wall thickness of insulation: min. 1.2 mm

Part number	Color	Cable-Ø in mm
● 50 282 038	Black	10.70 ± 1.0
● 50 282 043	Brown	10.70 ± 1.0
● 50 282 048	Blue	10.70 ± 1.0
● 50 282 052	Green-Yellow	10.70 ± 1.0

# MULTI-STANDARD WIRES

Xtra Basic Style 1015 UL / CSA / HAR H05 / O7V2-K / MTW



## TECHNICAL DATA

Conductor	TPC – tin plated copper acc. to EN13602
Insulation	UL-PVC 105 °C
Temperature range in motion	–5 up to + 105 °C (VDE, MTW +90 °C)
Temperature range at rest	–30 up to + 105 °C (VDE, MTW +90 °C)
Spark test	3.000 V
Operating voltage UL	600 V 300 / 500 V (H05xx-K: U <sub>o</sub> / U) 450 / 750 V (H07xx-K: U <sub>o</sub> / U)

### Cross section 0.50 mm<sup>2</sup>

Composition: EN 60228; Kl.5 – AWG21

Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 245 176	Black	2.50 ± 0.10
● 50 288 221	Brown	2.50 ± 0.10
● 50 288 226	Red	2.50 ± 0.10
● 50 288 228	Orange	2.50 ± 0.10
● 50 288 223	Yellow	2.50 ± 0.10
● 50 288 222	Green	2.50 ± 0.10
● 50 288 225	Blue (RAL 5015)	2.50 ± 0.10
● 50 288 227	Violet	2.50 ± 0.10
● 50 288 224	Gray	2.50 ± 0.10
● 50 288 220	White	2.50 ± 0.10
● 50 288 229	Dark Blue	2.50 ± 0.10
● 50 288 230	Green-Yellow	2.50 ± 0.10

### Cross section 0.75 mm<sup>2</sup>

Composition: EN 60228; Kl.5 – AWG19

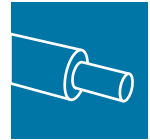
Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 245 178	Black	2.70 ± 0.10
● 50 288 212	Brown	2.70 ± 0.10
● 50 288 217	Red	2.70 ± 0.10
● 50 288 218	Orange	2.70 ± 0.10
● 50 288 214	Yellow	2.70 ± 0.10
● 50 288 213	Green	2.70 ± 0.10
● 50 288 216	Blue (RAL 5015)	2.70 ± 0.10
● 50 288 215	Gray	2.70 ± 0.10
● 50 288 211	White	2.70 ± 0.10
● 50 288 219	Green-Yellow	2.70 ± 0.10



# MULTI-STANDARD WIRES

Xtra Basic Style 1015 UL / CSA / HAR H05 / O7V2-K / MTW



## Cross section 1.00 mm<sup>2</sup>

Composition: EN 60228; Kl.5 – AWG18

Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 155 709	Black	2.80 ± 0.10
● 50 155 710	Brown	2.80 ± 0.10
● 50 155 711	Red	2.80 ± 0.10
● 50 155 712	Orange	2.80 ± 0.10
● 50 288 208	Yellow	2.80 ± 0.10
● 50 288 207	Green	2.80 ± 0.10
● 50 155 713	Blue (RAL 5015)	2.80 ± 0.10
● 50 288 209	Gray	2.80 ± 0.10
● 50 288 206	White	2.80 ± 0.10
● 50 288 210	Green-Yellow	2.80 ± 0.10

## Cross section 1.50 mm<sup>2</sup>

Composition: EN 60228; Kl.5 – AWG16

Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 245 201	Black	3.10 ± 0.25
● 50 288 193	Brown	3.10 ± 0.25
● 50 243 668	Red	3.10 ± 0.25
● 50 243 731	Orange	3.10 ± 0.25
● 50 243 729	Yellow	3.10 ± 0.25
● 50 243 730	Green	3.10 ± 0.25
● 50 288 195	Blue (RAL 5015)	3.10 ± 0.25
● 50 288 196	Violet	3.10 ± 0.25
● 50 288 194	Gray	3.10 ± 0.25
● 50 288 192	White	3.10 ± 0.25
● 50 288 198	Green-Yellow	3.10 ± 0.25
● 50 288 197	Dark Blue	3.10 ± 0.25

## Cross section 2.50 mm<sup>2</sup>

Composition: EN 60228; Kl.5 – AWG14

Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 155 714	Black	3.65 ± 0.25
● 50 155 715	Brown	3.65 ± 0.25
● 50 155 716	Red	3.65 ± 0.25
● 50 288 189	Yellow	3.65 ± 0.25
● 50 288 188	Green	3.65 ± 0.25
● 50 155 717	Blue (RAL 5015)	3.65 ± 0.25
● 50 288 190	Gray	3.65 ± 0.25
● 50 288 187	White	3.65 ± 0.25
● 50 155 718	Green-Yellow	3.65 ± 0.25

## Cross section 4.00 mm<sup>2</sup>

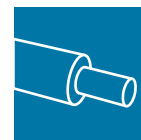
Composition: EN 60228; Kl.5 – AWG12

Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50 155 227	Black	4.30 ± 0.25
● 50 288 173	Brown	4.30 ± 0.25
● 50 288 178	Red	4.30 ± 0.25
● 50 288 175	Yellow	4.30 ± 0.25
● 50 288 174	Green	4.30 ± 0.25
● 50 288 177	Blue (RAL 5015)	4.30 ± 0.25
● 50 288 176	Gray	4.30 ± 0.25
● 50 288 172	White	4.30 ± 0.25
● 50 288 180	Green-Yellow	4.30 ± 0.25
● 50 288 179	Dark Blue	4.30 ± 0.25

# MULTI-STANDARD WIRES

Xtra Basic Style 1015 UL / CSA / HAR H05 / O7V2-K / MTW



## Cross section 6.00 mm<sup>2</sup>

Composition: EN 60228; KI.5 – AWG10

Wall thickness of insulation: nom. 0.76 mm

Part number	Color	Cable-Ø in mm
● 50245202	Black	4.82 ± 0.25
● 50288054	Brown	4.82 ± 0.25
● 50288059	Red	4.82 ± 0.25
● 50288060	Orange	4.82 ± 0.25
● 50288056	Yellow	4.82 ± 0.25
● 50288055	Green	4.82 ± 0.25
● 50288058	Blue (RAL 5015)	4.82 ± 0.25
● 50288057	Gray	4.82 ± 0.25
● 50288053	White	4.82 ± 0.25
● 50288062	Green-Yellow	4.82 ± 0.25
● 50288061	Dark Blue	4.82 ± 0.25

## Cross section 10.00 mm<sup>2</sup>

Composition: EN 60228; KI.5 – AWG8

Wall thickness of insulation: 1.14 mm

Part number	Color	Cable-Ø in mm
● 50288040	Black	6.50 ± 0.25
● 50288045	Brown	6.50 ± 0.25
● 50288052	Red	6.50 ± 0.25
● 50288049	Orange	6.50 ± 0.25
● 50288050	Yellow	6.50 ± 0.25
● 50288044	Green	6.50 ± 0.25
● 50288047	Blue (RAL 5015)	6.50 ± 0.25
● 50288046	Gray	6.50 ± 0.25
● 50288051	White	6.50 ± 0.25
● 50288043	Green-Yellow	6.50 ± 0.25
● 50288048	Dark Blue	6.50 ± 0.25

## Cross section 16.00 mm<sup>2</sup>

Composition: EN 60228; KI.5 – AWG6

Wall thickness of insulation: 1.52 mm

Part number	Color	Cable-Ø in mm
● 50155706	Black	9.00 ± 0.25
● 50287997	Brown	9.00 ± 0.25
● 50244805	Red	9.00 ± 0.25
● 50288000	Orange	9.00 ± 0.25
● 50288001	Yellow	9.00 ± 0.25
● 50287996	Green	9.00 ± 0.25
● 50155707	Blue (RAL 5015)	9.00 ± 0.25
● 50287998	Gray	9.00 ± 0.25
● 50288002	White	9.00 ± 0.25
● 50155708	Green-Yellow	9.00 ± 0.25
● 50287999	Dark Blue	9.00 ± 0.25

## Cross section 25.00 mm<sup>2</sup>

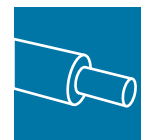
Composition: EN 60228; KI.5 – AWG4

Wall thickness of insulation: 1.52 mm

Part number	Color	Cable-Ø in mm
● 50155263	Black	9.80 ± 0.10
● 50287964	Brown	9.80 ± 0.10
● 50287987	Red	9.80 ± 0.10
● 50287980	Orange	9.80 ± 0.10
● 50287988	Yellow	9.80 ± 0.10
● 50287962	Green	9.80 ± 0.10
● 50287979	Blue (RAL 5015)	9.80 ± 0.10
● 50287978	Gray	9.80 ± 0.10
● 50287989	White	9.80 ± 0.10
● 50287959	Green-Yellow	9.80 ± 0.10

# MULTI-STANDARD WIRES

Xtra Basic Style 1015 UL / CSA / HAR H05 / 07V2-K / MTW



## Cross section 35.00 mm<sup>2</sup>

Composition: EN 60228; Kl.5 – AWG2

Wall thickness of insulation: 1.52 mm

Part number	Color	Cable-Ø in mm
● 50287752	Black	11.30 ± 0.10
● 50287951	Red	11.30 ± 0.10
● 50287948	Green	11.30 ± 0.10
● 50287755	Blue (RAL 5015)	11.30 ± 0.10
● 50287952	Gray	11.30 ± 0.10
● 50287950	White	11.30 ± 0.10
● 50287756	Green-Yellow	11.30 ± 0.10

## Cross section 50.00 mm<sup>2</sup>

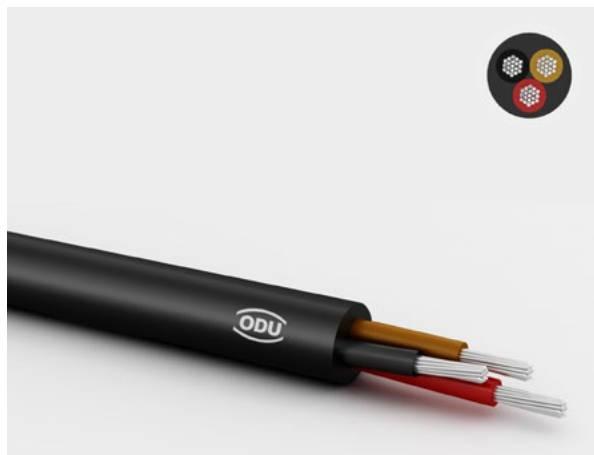
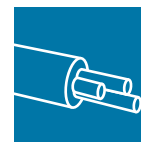
Composition: EN 60228; Kl.5 – AWG1

Wall thickness of insulation: 2.03 mm

Part number	Color	Cable-Ø in mm
● 50287749	Black	13.50 ± 0.10
● 50287944	Green	13.50 ± 0.10
● 50287945	Blue (RAL 5015)	13.50 ± 0.10
● 50288199	Green-Yellow	13.50 ± 0.10

# MULTI-CONDUCTOR CABLES PVC – UNSCREENED

UL / cUL – LIYY Style 2464 / 2517-10002



## TECHNICAL DATA

Conductor	TCP – tin plated copper acc. to EN13602
Insulation	UL-PVC semi rigid (core) UL-PVC 105 °C (jacket)
Temperature range in motion	–10 up to + 80 °C (style 2464) –10 up to + 105 °C (style 2517)
Temperature range at rest	–30 up to + 80 °C (style 2464) –30 up to + 105 °C (style 2517)
Spark test	1.500 V
Operating voltage UL	300 V

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 7 x 0.127 mm  
Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 142	4	3.90 ± 0.20	0.90 ± 0.20
● 50 287 863	5	N/A	0.90 ± 0.20
● 50 153 903	6	4.40 ± 0.20	0.90 ± 0.20
● 50 287 803	8	4.60 ± 0.20	0.90 ± 0.20
● 50 287 866	9	N/A	0.90 ± 0.20
● 50 287 804	10	5.30 ± 0.20	0.90 ± 0.20
● 50 287 806	12	5.60 ± 0.20	0.90 ± 0.20
● 50 287 807	14	5.80 ± 0.20	0.90 ± 0.20
● 50 287 829	20	6.50 ± 0.20	0.90 ± 0.20
● 50 290 825	26	N/A	0.90 ± 0.20

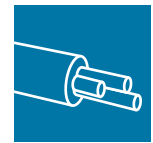
### Cross section 0.14 mm<sup>2</sup> – AWG 26

Composition: 7 x 0.160 mm  
Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 098	2	3.70 ± 0.20	1.00 ± 0.20
● 50 245 269	3	3.80 ± 0.20	1.00 ± 0.20
● 50 153 862	4	4.10 ± 0.20	1.00 ± 0.20
● 50 153 864	6	4.70 ± 0.20	1.00 ± 0.20
● 50 287 853	7	N/A	1.00 ± 0.20
● 50 153 866	8	5.10 ± 0.20	1.00 ± 0.20
● 50 245 270	10	5.70 ± 0.20	1.00 ± 0.20
● 50 287 795	12	5.90 ± 0.20	1.00 ± 0.20
● 50 287 797	14	6.20 ± 0.20	1.00 ± 0.20
● 50 153 869	16	6.50 ± 0.20	1.00 ± 0.20
● 50 287 854	19	N/A	1.00 ± 0.20
● 50 287 857	20	N/A	1.00 ± 0.20
● 50 287 862	22	N/A	1.00 ± 0.20

# MULTI-CONDUCTOR CABLES PVC – UNSCREENED

UL / cUL – LIYY Style 2464 / 2517-10002



## Cross section 0.34 mm<sup>2</sup> – AWG 22

Composition: 7 x 0.254 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 153 877	2	4.30 ± 0.20	1.30 ± 0.20
● 50 153 878	3	4.50 ± 0.20	1.30 ± 0.20
● 50 153 879	4	4.80 ± 0.20	1.30 ± 0.20
● 50 287 831	5	5.30 ± 0.20	1.30 ± 0.20
● 50 153 881	6	5.70 ± 0.20	1.30 ± 0.20
● 50 153 883	8	6.20 ± 0.20	1.30 ± 0.20
● 50 153 884	10	6.90 ± 0.20	1.30 ± 0.20
● 50 287 792	12	7.20 ± 0.20	1.30 ± 0.20
● 50 287 793	14	7.60 ± 0.20	1.30 ± 0.20

## Cross section 0.50 mm<sup>2</sup> – AWG 20

Composition: 7 x 0.320 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 153 895	2	4.70 ± 0.20	1.50 ± 0.20
● 50 153 896	3	4.90 ± 0.20	1.50 ± 0.20
● 50 153 897	4	5.40 ± 0.20	1.50 ± 0.20
● 50 287 830	5	5.80 ± 0.20	1.50 ± 0.20
● 50 153 899	6	6.30 ± 0.20	1.50 ± 0.20
● 50 287 842	7	N/A	1.50 ± 0.20
● 50 287 784	8	6.80 ± 0.20	1.50 ± 0.20
● 50 287 843	9	N/A	1.50 ± 0.20
● 50 153 902	10	7.70 ± 0.20	1.50 ± 0.20
● 50 287 785	12	8.10 ± 0.20	1.50 ± 0.20

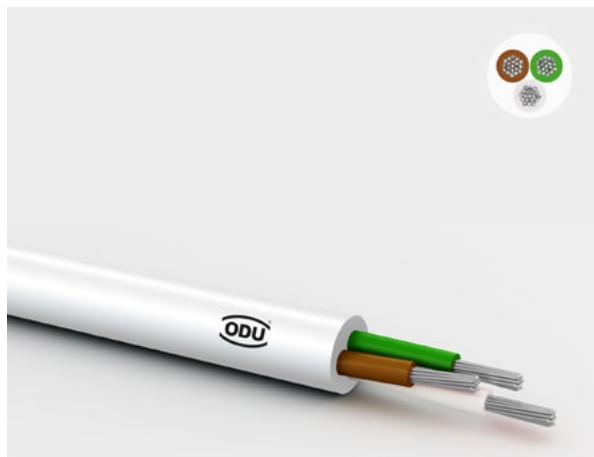
## Cross section 1.0 mm<sup>2</sup> – AWG 18

Composition: 19 x 0.254 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 287 781	2	5.30 ± 0.20	1.80 ± 0.20
● 50 154 600	3	5.60 ± 0.20	1.80 ± 0.20
● 50 287 779	4	6.10 ± 0.20	1.80 ± 0.20
● 50 287 768	5	6.60 ± 0.20	1.80 ± 0.20
● 50 287 759	6	7.20 ± 0.20	1.80 ± 0.20

# MULTI-CONDUCTOR CABLES PVC– UNSCREENED UL-Style 2464



## TECHNICAL DATA

Conductor	tin plated copper
Insulation	SR-PVC
Jacket	PVC (white RAL 9003)
Temperature range	-10 up to + 80 °C
Operating voltage UL	300 V
Flame retardant	UL VW-1 & CSA FT1

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 7 x 0.127 mm

Wall thickness of insulation: min. 0.61 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154327	6	4.40 ± N/A	0.90 ± N/A
● 50154329	7	4.30 ± N/A	0.90 ± N/A
● 50154331	8	4.60 ± N/A	0.85 ± N/A
● 50154333	9	5.00 ± N/A	0.85 ± N/A
● 50154334	10	5.00 ± N/A	0.85 ± N/A
● 50154335	12	5.00 ± N/A	0.85 ± N/A
● 50154336	14	5.50 ± N/A	0.85 ± N/A

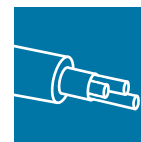
### Cross section 0.14 mm<sup>2</sup> – AWG 26

Composition: 7 x 0.16 mm

Wall thickness of insulation: min. 0.61 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154324	4	4.10 ± N/A	1.00 ± N/A
● 50154325	5	4.40 ± N/A	1.00 ± N/A
● 50154328	6	4.60 ± N/A	1.00 ± N/A
● 50154330	7	4.60 ± N/A	0.90 ± N/A
● 50154332	8	5.00 ± N/A	1.00 ± N/A

# MULTI-CONDUCTOR CABLES PVC– UNSCREENED UL-Style 2464



## Cross section 0.25 mm<sup>2</sup> – AWG 24

Composition: 7 x 0.20 mm  
Wall thickness of insulation: min. 0.66 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154318	2	3.80 ± N/A	1.10 ± N/A
● 50154321	3	4.00 ± N/A	1.10 ± N/A

## Cross section 0.34 mm<sup>2</sup> – AWG 22

Composition: 17 x 0.16 mm  
Wall thickness of insulation: min. 0.61 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154317	2	4.10 ± N/A	1.25 ± N/A
● 50154322	3	4.60 ± N/A	1.30 ± N/A
● 50154323	4	4.50 ± N/A	1.20 ± N/A
● 50154326	5	4.90 ± N/A	1.20 ± N/A

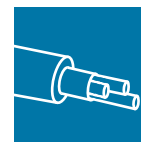
## Cross section 0.50 mm<sup>2</sup> – AWG 20

Composition: 26 x 0.16 mm  
Wall thickness of insulation: min. 0.64 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154319	2	4.40 ± N/A	1.40 ± N/A
● 50154320	3	4.60 ± N/A	1.40 ± N/A

# MULTI-CONDUCTOR CABLES PVC – SCREENED

UL / cUL – LIYCY Style 2464 / 2517-10002



## TECHNICAL DATA

Conductor	TCP – tin plated copper acc. to EN13602
Insulation	UL-PVC semi rigid (core) UL-PVC 105 °C (jacket)
Shielding	copper braid tinned
Temperature range in motion	–10 up to + 80 °C (style 2464) –10 up to + 105 °C (style 2517)
Temperature range at rest	–30 up to + 80 °C (style 2464) –30 up to + 105 °C (style 2517)
Spark test	1.500 V
Operating voltage UL	300 V

### Cross section 0.05 mm<sup>2</sup> – AWG 30

Composition: 7 x 0.102 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50287 897	2	3.80 ± N/A	0.90 ± N/A
● 50287 898	3	3.90 ± N/A	0.90 ± N/A
● 50287 899	4	4.15 ± N/A	0.90 ± N/A

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 7 x 0.127 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50245 221	2	4.00 ± N/A	0.90 ± N/A
● 50287 833	3	4.10 ± N/A	0.90 ± N/A
● 50245 223	4	4.30 ± N/A	0.90 ± N/A
● 50245 225	6	4.85 ± N/A	0.90 ± N/A
● 50281 762	10	5.80 ± N/A	0.90 ± N/A
● 50281 763	14	6.20 ± N/A	0.90 ± N/A
● 50287 818	16	6.50 ± N/A	0.90 ± N/A
● 50287 896	26	8.70 ± N/A	0.90 ± N/A



# MULTI-CONDUCTOR CABLES PVC – SCREENED

UL / cUL – LIYCY Style 2464 / 2517-10002



## Cross section 0.14 mm<sup>2</sup> – AWG 26

Composition: 7 x 0.160 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50245231	2	4.20 ± 0.20	1.00 ± 0.10
● 50245237	3	4.30 ± 0.20	1.00 ± 0.10
● 50153973	4	4.60 ± 0.20	1.00 ± 0.10
● 50153975	6	5.20 ± 0.20	1.00 ± 0.10
● 50287828	7	5.20 ± 0.20	1.00 ± 0.10
● 50153977	8	5.60 ± 0.20	1.00 ± 0.10
● 50245238	10	6.20 ± 0.20	1.00 ± 0.10
● 50153978	12	6.40 ± 0.20	1.00 ± 0.10

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50287827	14	6.70 ± 0.20	1.00 ± 0.10
● 50153980	16	7.00 ± 0.20	1.00 ± 0.10
● 50153981	18	7.30 ± 0.20	1.00 ± 0.10
● 50287816	19	7.20 ± 0.20	1.00 ± 0.10
● 50153983	20	7.70 ± 0.20	1.00 ± 0.10
● 50153984	22	8.00 ± 0.20	1.00 ± 0.10
● 50287817	26	8.40 ± 0.20	1.00 ± 0.10
● 50153986	30	8.80 ± 0.20	1.00 ± 0.10

## Cross section 0.34 mm<sup>2</sup> – AWG 22

Composition: 7 x 0.254 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50153988	2	4.80 ± 0.20	1.30 ± 0.10
● 50153989	3	4.90 ± 0.20	1.30 ± 0.10
● 50153990	4	5.30 ± 0.20	1.30 ± 0.10
● 50153991	5	5.80 ± 0.20	1.30 ± 0.10
● 50153992	6	6.20 ± 0.20	1.30 ± 0.10
● 50153994	8	6.70 ± 0.20	1.30 ± 0.10
● 50287824	10	7.50 ± 0.20	1.30 ± 0.10
● 50287820	12	7.80 ± 0.20	1.30 ± 0.10
● 50287825	14	8.00 ± 0.20	1.30 ± 0.10
● 50287826	16	8.60 ± 0.20	1.30 ± 0.10
● 50153999	18	8.70 ± 0.20	1.30 ± 0.10

## Cross section 0.50 mm<sup>2</sup> – AWG 20

Composition: 7 x 0.320 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154006	2	5.20 ± 0.20	1.50 ± 0.10
● 50154007	3	5.40 ± 0.20	1.50 ± 0.10
● 50154008	4	5.90 ± 0.20	1.50 ± 0.10
● 50287821	5	6.30 ± 0.20	1.50 ± 0.10
● 50154010	6	6.80 ± 0.20	1.50 ± 0.10
● 50287895	7	6.70 ± 0.20	1.50 ± 0.10
● 50154012	8	7.40 ± 0.20	1.50 ± 0.10
● 50154013	10	8.30 ± 0.20	1.50 ± 0.10

## Cross section 1.0 mm<sup>2</sup> – AWG 18

Composition: 19 x 0.254 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50287892	3	6.10 ± N/A	1.80 ± N/A
● 50287893	4	6.60 ± N/A	1.80 ± N/A
● 50287894	7	7.90 ± N/A	1.80 ± N/A

## Cross section 2.5 mm<sup>2</sup> – AWG 14

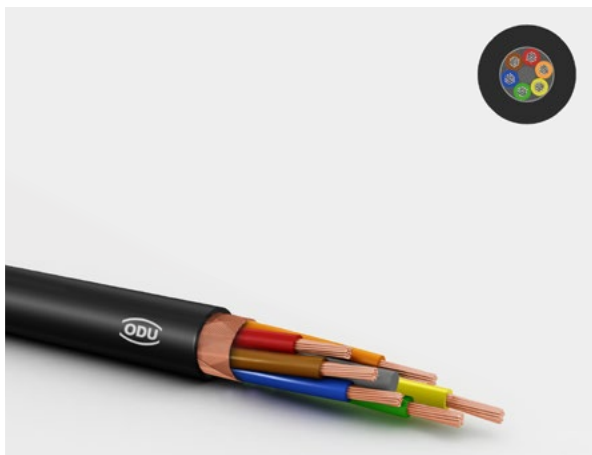
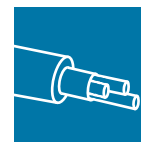
Composition: 41 x 0.254 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50287813	2	8.40 ± 0.20	3.00 ± 0.10
● 50287872	3	8.80 ± 0.20	3.00 ± 0.10
● 50287891	4	9.10 ± 0.20	3.00 ± 0.10

# MINIATURE MULTI-CONDUCTOR CABLES PVC – SCREENED

LifYDY – without UL approval



## TECHNICAL DATA

Conductor	bare copper, fine wire
Insulation	PVC acc. to VDE 0207
Shielding	Copper spiral shielding
Temperature range in motion	-5 up to +70 °C
Temperature range at rest	-20 up to +70 °C
Spark test [0.05 mm <sup>2</sup> / 0.10 mm <sup>2</sup> ]	500 V / 900 V
Operating voltage [0.05 mm <sup>2</sup> / 0.10 mm <sup>2</sup> ]	100 V / 300 V

### Cross section 0.05 mm<sup>2</sup> – AWG 30

Composition: 26 x 0.05 mm  
Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm Outer-Ø
● 50 245 241	2	2.70 ± 0.20
● 50 245 242	3	2.80 ± 0.20
● 50 245 243	4	3.00 ± 0.20
● 50 245 244	5	3.20 ± 0.20
● 50 245 246	7	3.40 ± 0.20
● 50 245 247	8	3.70 ± 0.20
● 50 245 248	12	4.50 ± 0.20
● 50 245 249	16	4.80 ± 0.20

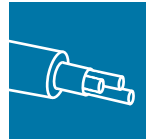
### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 51 x 0.05 mm  
Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm Outer-Ø
● 50 245 250	2	3.60 ± 0.20
● 50 245 251	3	3.70 ± 0.20
● 50 245 252	4	4.00 ± 0.20
● 50 245 254	7	4.60 ± 0.20
● 50 245 255	8	4.90 ± 0.20
● 50 245 256	12	5.70 ± 0.20
● 50 245 257	16	6.00 ± 0.20

# MINIATURE MULTI-CONDUCTOR CABLES PVC – SCREENED

UL approved – UL-LifYDY / Style 2936



## TECHNICAL DATA

Conductor	bare copper, fine wire
Insulation	SR-PVC
Shielding	Copper spiral shielding
Temperature range in motion	-10 up to + 80 °C
Temperature range at rest	-30 up to + 80 °C
Spark test	1000 V / 50 Hz
Operating voltage	max. 150 V / 50 Hz

## Cross section 0.08 mm<sup>2</sup> – AWG 28

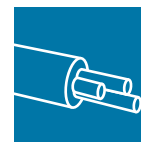
Composition: 40 x 0.05 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm Outer-Ø
● 50245288	2	2.90 ± 0.20
● 50245289	3	3.00 ± 0.20
● 50245290	4	3.20 ± 0.20
● 50245291	5	3.50 ± 0.20
● 50245292	8	4.10 ± 0.20

# MULTI-CONDUCTOR CABLES, PUR – UNSCREENED

UL / cUL – Style 20233/10042



## TECHNICAL DATA

Conductor	bare copper acc. to EN13602
Insulation	TPE (12Y) thermoplastic compound (core) PUR – (11Y) / UL-AWM758 (jacket)
Temperature range in motion	–40 up to + 80 °C
Temperature range at rest	–50 up to + 80 °C
Spark test	1.500 V
Operating voltage UL	300 V

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 10 x 0.10 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 287 799	9	5.50 ± 0.20	0.90 ± 0.05
● 50 154 023	10	5.25 ± 0.20	0.90 ± 0.05
● 50 287 832	12	5.50 ± 0.20	0.90 ± 0.05
● 50 154 024	14	5.70 ± 0.20	0.90 ± 0.05
● 50 289 941	20	N/A	0.90 ± 0.05
● 50 287 798	26	7.30 ± 0.20	0.90 ± 0.05

### Cross section 0.14 mm<sup>2</sup> – AWG 26

Composition: 18 x 0.10 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 025	4	4.00 ± 0.20	0.95 ± 0.10
● 50 289 935	5	4.30 ± 0.20	0.95 ± 0.10
● 50 154 027	6	4.55 ± 0.20	0.95 ± 0.10
● 50 287 858	7	4.85 ± 0.20	0.95 ± 0.10
● 50 154 029	8	5.25 ± 0.20	0.95 ± 0.10
● 50 287 860	12	5.90 ± 0.20	0.95 ± 0.10
● 50 154 032	16	6.10 ± 0.20	0.95 ± 0.10
● 50 287 903	19	6.65 ± 0.20	0.95 ± 0.10
● 50 287 790	26	7.60 ± 0.20	0.95 ± 0.10

# MULTI-CONDUCTOR CABLES, PUR – UNSCREENED

UL / cUL – Style 20233/10042

## Cross section 0.34 mm<sup>2</sup> – AWG 22

Composition: 19 x 0.150 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154042	4	4.75 ± 0.20	1.30 ± 0.05
● 50287855	5	5.10 ± 0.20	1.30 ± N/A
● 50154047	10	6.60 ± 0.20	1.30 ± N/A
● 50289940	14	N/A	1.30 ± N/A
● 50154053	20	8.50 ± 0.30	1.30 ± 0.10

## Cross section 0.50 mm<sup>2</sup> – AWG 20

Composition: 28 x 0.150 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50287852	2	4.70 ± 0.10	1.50 ± 0.10
● 50154059	3	4.95 ± 0.20	1.50 ± 0.10
● 50154060	4	5.35 ± 0.25	1.50 ± 0.10
● 50154062	6	6.20 ± 0.25	1.50 ± 0.10

## Cross section 1.0 mm<sup>2</sup> – AWG 18

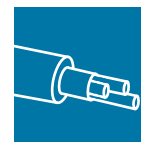
Composition: 42 x 0.15 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50289936	3	5.95 ± 0.15	1.95 ± 0.10
● 50289937	4	6.40 ± 0.20	1.95 ± 0.10
● 50289938	5	6.90 ± 0.20	1.95 ± 0.10

# MULTI-CONDUCTOR CABLES PUR – SCREENED

D-UL / cUL – Style 20233/10042



## TECHNICAL DATA

Conductor	bare copper acc. to EN13602
Insulation	TPE (12Y) thermoplastic compound (core) PUR – (11Y) / UL-AWM758 (jacket)
Shielding	spiral shield; tinned copper
Temperature range in motion	–40 up to + 80 °C
Temperature range at rest	–50 up to + 80 °C
Spark test	1.500 V
Operating voltage UL	300 V

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 10 x 0.10 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 236	2	3.50 ± 0.20	0.90 ± 0.05
● 50 154 237	3	3.90 ± 0.20	0.90 ± 0.05
● 50 287 839	4	4.20 ± 0.20	0.90 ± 0.05
● 50 289 944	5	4.50 ± 0.20	0.90 ± 0.05
● 50 287 840	6	4.65 ± 0.20	0.90 ± 0.05
● 50 287 841	7	4.95 ± 0.20	0.90 ± 0.05
● 50 289 946	8	5.60 ± 0.20	0.90 ± 0.05
● 50 281 766	9	5.60 ± 0.20	0.90 ± 0.05
● 50 153 919	10	5.50 ± 0.20	0.90 ± 0.05
● 50 153 920	14	6.00 ± 0.20	0.90 ± 0.05
● 50 289 942	26	N/A	0.90 ± 0.05

### Cross section 0.14 mm<sup>2</sup> – AWG 26

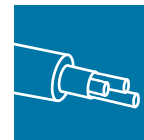
Composition: 18 x 0.10 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 153 921	4	4.20 ± 0.25	0.95 ± 0.10
● 50 153 922	5	4.70 ± 0.25	0.95 ± 0.10
● 50 153 923	6	5.00 ± 0.25	0.95 ± 0.10
● 50 153 925	8	5.60 ± 0.25	0.95 ± 0.10
● 50 287 838	9	5.80 ± 0.25	0.95 ± 0.10
● 50 153 926	12	6.20 ± 0.25	0.95 ± 0.10
● 50 153 927	14	6.10 ± 0.25	0.95 ± 0.10
● 50 153 928	16	6.30 ± 0.25	1.00 ± 0.10
● 50 153 929	18	7.20 ± 0.25	1.00 ± 0.10
● 50 153 930	19	7.80 ± 0.25	1.00 ± 0.10
● 50 153 931	20	7.00 ± 0.25	1.00 ± 0.10
● 50 153 932	22	7.45 ± 0.25	1.00 ± 0.10
● 50 153 933	26	9.20 ± 0.25	1.00 ± 0.10
● 50 153 934	30	7.90 ± 0.25	1.00 ± 0.10

# MULTI-CONDUCTOR CABLES PUR – SCREENED

D-UL / cUL – Style 20233/10042



## Cross section 0.34 mm<sup>2</sup> – AWG 22

Composition: 19 x 0.15 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 153 936	2	4.50 ± 0.25	1.30 ± 0.15
● 50 153 937	3	4.60 ± 0.25	1.30 ± 0.15
● 50 153 938	4	5.10 ± 0.25	1.30 ± 0.15
● 50 153 939	5	5.30 ± 0.25	1.30 ± 0.15
● 50 153 940	6	5.80 ± 0.25	1.30 ± 0.15
● 50 153 941	7	6.05 ± 0.25	1.30 ± 0.15
● 50 153 942	8	6.55 ± 0.25	1.30 ± 0.15
● 50 153 943	10	7.00 ± 0.25	1.30 ± 0.15
● 50 153 945	14	7.45 ± 0.25	1.30 ± 0.15
● 50 153 946	16	8.00 ± 0.25	1.30 ± 0.15
● 50 281 765	18	8.15 ± 0.25	1.30 ± 0.15

## Cross section 0.50 mm<sup>2</sup> – AWG 20

Composition: 28 x 0.15 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 153 954	2	4.90 ± 0.20	1.50 ± 0.10
● 50 153 955	3	5.15 ± 0.20	1.50 ± 0.10
● 50 153 956	4	5.55 ± 0.20	1.50 ± 0.10
● 50 153 957	5	5.95 ± 0.20	1.50 ± 0.10
● 50 153 958	6	6.40 ± 0.20	1.50 ± 0.10
● 50 153 959	7	6.85 ± 0.20	1.50 ± 0.10
● 50 153 960	8	7.45 ± 0.20	1.50 ± 0.10
● 50 153 961	10	7.75 ± 0.20	1.50 ± 0.10

## Cross section 1.0 mm<sup>2</sup> – AWG 18

Composition: 42 x 0.15 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 287 977	3	6.15 ± 0.20	1.95 ± 0.10
● 50 287 975	4	6.70 ± 0.20	1.95 ± 0.10
● 50 287 972	7	8.35 ± 0.20	1.95 ± 0.10

## Cross section 2.5 mm<sup>2</sup> – AWG 14

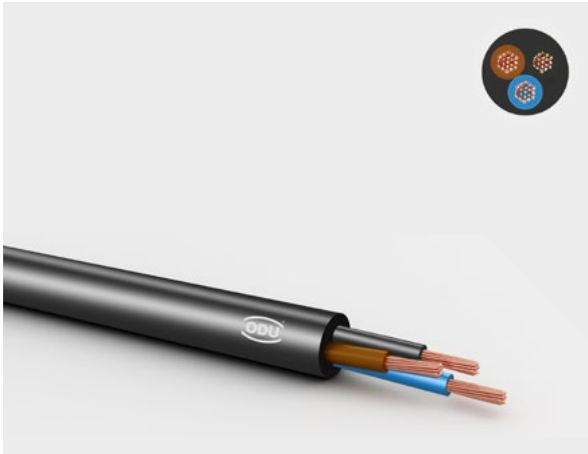
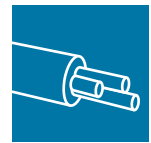
Composition: 50 x 0.25 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 287 966	2	7.50 ± 0.20	2.80 ± 0.10
● 50 287 967	3	8.00 ± 0.20	2.80 ± 0.10
● 50 287 968	4	9.65 ± 0.20	2.80 ± 0.10

# MINIATURE SENSOR CABLES PUR – UNSCREENED

without UL approval



## TECHNICAL DATA

Conductor	bare copper, fine wire acc. to DIN VDE 0295
Insulation	PUR
Temperature range in motion	-15 up to +80 °C
Temperature range at rest	-30 up to +80 °C
Spark test	1.200 V
Operating voltage UL	max. 300 V

### Cross section 0.09 mm<sup>2</sup> – AWG 28

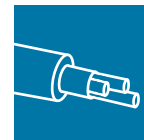
Composition: 19 x 0.079 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm Outer-Ø
● 50245 156	3	2.40 ± N/A
● 50245 158	4	2.60 ± N/A
● 50245 159	5	2.90 ± N/A
● 50245 160	8	3.40 ± N/A



# MINIATURE SENSOR CABLES PUR – SCREENED without UL approval



## TECHNICAL DATA

Conductor	bare copper, fine wire acc. to DIN VDE 0295
Insulation	PUR
Shielding	copper spiral shield
Temperature range in motion	-10 up to + 80 °C
Temperature range at rest	-30 up to + 80 °C
Spark test	1.200 V
Operating voltage UL	max. 300 V

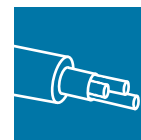
## Cross section 0.09 mm<sup>2</sup> – AWG 28

Composition: 19 x 0.079 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm Outer-Ø
● 50245 172	3	2.80 ± N/A
● 50245 173	4	2.90 ± N/A
● 50245 174	5	3.10 ± N/A
● 50245 175	8	3.60 ± N/A

# ODU AMC<sup>®</sup> PREFERENCE CABLE



## TECHNICAL DATA

Conductor	bare copper acc. to EN13602
Insulation	TPE (12Y) thermoplastic compound (core) PUR – (11Y) / UL-AWM758 (jacket)
Shielding	double round crossed twist (DD++)
Temperature range in motion	–40 up to +80 °C
Temperature range at rest	–50 up to +80 °C
Spark test	1.500 V
Operating voltage UL	300 V

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 10 x 0.10 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 238	4	4.40 ± 0.20	0.90 ± 0.05
● 50 153 918	7	5.20 ± 0.20	0.90 ± 0.05
● 50 154 292	16	6.40 ± 0.20	0.90 ± 0.05
● 50 154 609	27	8.00 ± 0.20	0.90 ± 0.05

### Cross section 0.25 mm<sup>2</sup> – AWG 24

Composition: 41 x 0.078 mm

Wall thickness of insulation: min. 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 633	2	4.50 ± 0.20	1.10 ± 0.05

### Cross section Mixed

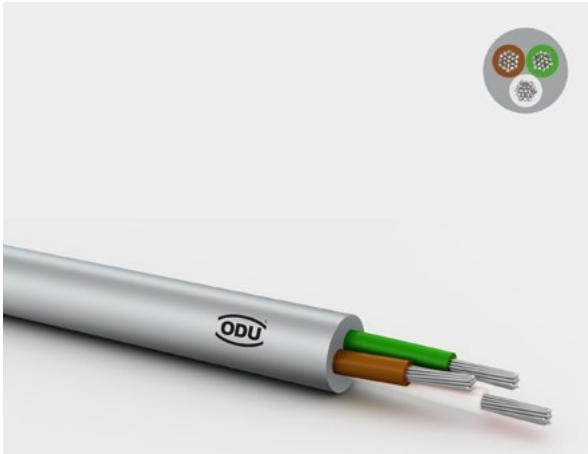
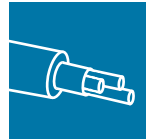
Composition: see table

Wall thickness of insulation: min. 0.76 mm

Part number	Composition	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50 154 634	6 x AWG 22 / 1 x AWG 28 / 1 x 2 x AWG 28	7.10 ± N/A	see table

# SILICONE CABLES<sup>1)</sup>

Reference standard: UL-Style 758 / 1581



## TECHNICAL DATA

Conductor	tin plated copper
Insulation	FEP
Jacket	Silicone (gray, RAL7045)
Temperature range	-60 up to + 200 °C
Spark test	2.000 V
Operating voltage UL	300 V
Characteristics	Wipe disinfectable EtO sterilizable

### Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 7 x 0.12 mm

Wall thickness of insulation: 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154316	6	4.40 ± 0.15	0.96 ± 0.10

### Cross section 0.14 mm<sup>2</sup> – AWG 26

Composition: 7 x 0.16 mm

Wall thickness of insulation: min 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154314	4	4.10 ± 0.15	1.07 ± 0.10
● 50154315	5	4.40 ± 0.15	1.07 ± 0.10

### Cross section 0.34 mm<sup>2</sup> – AWG 22

Composition: 19 x 0.15 mm

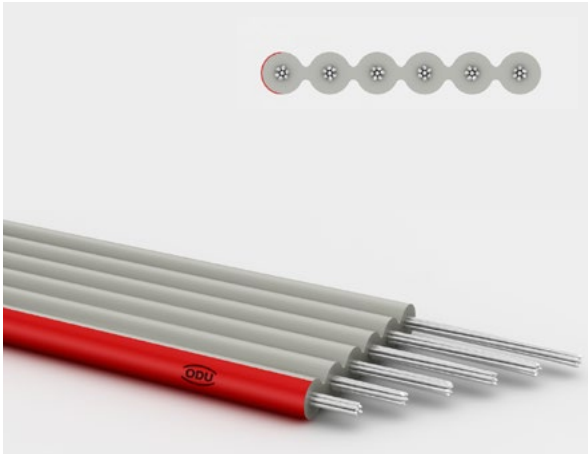
Wall thickness of insulation: min 0.76 mm

Part number	No. of cores	Dimensions in mm	
		Outer-Ø	Core-Ø
● 50154312	2	4.40 ± 0.15	1.44 ± 0.10
● 50154313	3	4.60 ± 0.15	1.44 ± 0.10

<sup>1)</sup> Not used for silicone-overmolded system solutions.

# FLAT RIBBON CABLES

UL-Style 2678 AWG 30 / Pattern 0.635 mm FBL LIY



## TECHNICAL DATA

Conductor	TPC – tin plated copper acc. to EN13602
Insulation	UL-PVC semi rigid
Temperature range in motion	-10 up to + 105 °C
Temperature range at rest	-30 up to + 105 °C
Operating voltage UL	30 V

## Cross section 0.09 mm<sup>2</sup> – AWG 30

Composition: 7 x 0.102 mm

Wall thickness of insulation: 0.23 mm

Part number	No. of cores	Dimensions in mm	
		Height	Width
● 50234717	9	0.64 ± 0.05	5.72 ± 0.15
● 50234718	10	0.64 ± 0.05	6.36 ± 0.15
● 50234719	14	0.64 ± 0.05	8.90 ± 0.15
● 50234720	15	0.64 ± 0.05	9.53 ± 0.15
● 50234721	16	0.64 ± 0.05	10.17 ± 0.20
● 50234722	20	0.64 ± 0.05	12.71 ± 0.20
● 50234723	25	0.64 ± 0.05	15.88 ± 0.25

Part number	No. of cores	Dimensions in mm	
		Height	Width
● 50234724	26	0.64 ± 0.05	16.52 ± 0.25
● 50234726	34	0.64 ± 0.05	21.62 ± 0.30
● 50234727	37	0.64 ± 0.05	23.50 ± 0.30
● 50234728	40	0.64 ± 0.05	25.41 ± 0.30
● 50234729	50	0.64 ± 0.05	31.76 ± 0.40
● 50234730	60	0.64 ± 0.05	38.11 ± 0.40

# FLAT RIBBON CABLES

UL-Style 2651 AWG 28 / Pattern 1.27 mm FBL LIY



## TECHNICAL DATA

Conductor	TPC – tin plated copper acc. to EN13602
Insulation	UL-PVC 105 °C
Temperature range in motion	–20 up to + 105 °C
Temperature range at rest	–30 up to + 105 °C
Operating voltage UL	300 V

## Cross section 0.08 mm<sup>2</sup> – AWG 28

Composition: 7 x 0.127 mm

Wall thickness of insulation: 0.23 mm

Part number	No. of cores	Dimensions in mm	
		Height	Width
● 50 157 201	9	0.93 ± 0.05	11.09 ± 0.20
● 50 157 202	10	0.93 ± 0.05	12.36 ± 0.20
● 50 157 204	14	0.93 ± 0.05	17.44 ± 0.20
● 50 157 205	15	0.93 ± 0.05	18.71 ± 0.20
● 50 157 206	16	0.93 ± 0.05	19.98 ± 0.20
● 50 157 207	20	0.93 ± 0.05	25.06 ± 0.20
● 50 157 208	25	0.93 ± 0.05	31.41 ± 0.25

Part number	No. of cores	Dimensions in mm	
		Height	Width
● 50 157 209	26	0.93 ± 0.05	32.68 ± 0.25
● 50 157 210	34	0.93 ± 0.05	42.84 ± 0.30
● 50 157 211	37	0.93 ± 0.05	46.65 ± 0.30
● 50 157 212	40	0.93 ± 0.05	50.46 ± 0.40
● 50 157 213	50	0.93 ± 0.05	63.16 ± 0.50
● 50 157 214	60	0.93 ± 0.05	75.86 ± 0.50
● 50 157 215	64	0.93 ± 0.05	80.94 ± 0.50

# FLAT RIBBON CABLES

UL-Style 2678 AWG 26 / Pattern 1.27 mm FBL LIY



## TECHNICAL DATA

Conductor	TPC – tin plated copper acc. to EN13602
Insulation	UL-PVC 105 °C
Temperature range in motion	–20 up to + 105 °C
Temperature range at rest	–30 up to + 105 °C
Operating voltage UL	300 V

## Cross section 0.14 mm<sup>2</sup> – AWG 26

Composition: 7 x 0.160 mm

Wall thickness of insulation: 0.23 mm

Part number	No. of cores	Dimensions in mm	
		Height	Width
● 50 157 216	10	1.00 ± 0.05	12.43 ± 0.20
● 50 157 217	14	1.00 ± 0.05	17.51 ± 0.20
● 50 157 218	16	1.00 ± 0.05	20.05 ± 0.20
● 50 157 219	20	1.00 ± 0.05	25.13 ± 0.20
● 50 157 220	25	1.00 ± 0.05	31.48 ± 0.25
● 50 157 221	26	1.00 ± 0.05	32.75 ± 0.25

Part number	No. of cores	Dimensions in mm	
		Height	Width
● 50 157 222	34	1.00 ± 0.05	42.91 ± 0.30
● 50 157 223	37	1.00 ± 0.05	46.72 ± 0.30
● 50 157 224	40	1.00 ± 0.05	50.53 ± 0.40
● 50 157 225	50	1.00 ± 0.05	63.23 ± 0.50
● 50 157 226	60	1.00 ± 0.05	75.67 ± 0.50
● 50 157 227	64	1.00 ± 0.05	81.01 ± 0.50

# COAXIAL CABLES

without UL approval



## TECHNICAL DATA

Conductor	see table
Insulation	see table
Shielding	copper spiral shield
Temperature range in motion	see table
Temperature range at rest	see table

Part number	RG-Type	Z	Temperature range [motion/rest]	Conductor	Dimensions in mm		Insulation Jacket
					Outer-Ø	Core-Ø	
● 50 154 255	RG58	50 Ω	-10 °C / + 80 °C (m)	tin-plated copper acc. to EN13602	4.95 ± 0.10	2.95 ± 0.10	PVC
● 50 153 690	RG59	75 Ω	-20 °C / + 80 °C (m)	STAKU – conductor blank	6.00 ± 0.20	3.70 ± 0.10	PVC
● 50 154 612	RG142	50 Ω	-70 °C / + 200 °C (m)	STAKU – silver-plated conductor	4.95 ± 0.15	2.95 ± 0.10	FEP-6Y
● 50 153 783	RG174	50 Ω	-20 °C / + 80 °C (r)	STAKU – conductor blank	2.80 ± 0.15	1.52 ± 0.10	PVC
● 50 154 086	RG178	50 Ω	-55 °C / + 200 °C (m)	STAKU – silver-plated conductor	1.80 ± 0.10	0.84 ± 0.05	FEP-6Y
● 50 153 706	RG179	75 Ω	-55 °C / + 200 °C (m)	STAKU – silver-plated conductor	2.54 ± 0.10	1.60 ± 0.05	FEP - 6Y
● 50 153 757	RG187	75 Ω	-55 °C / + 200 °C (m)	STAKU – silver-plated conductor	2.54 ± 0.15	1.60 ± 0.10	PFA-51Y
● 50 284 084	RG188	50 Ω	-55 °C / + 200 °C (m)	STAKU – silver-plated conductor	2.59 ± 0.10	1.52 ± 0.05	PFA-51Y
● 50 284 079	RG196	50 Ω	-55 °C / + 200 °C (r)	STAKU – silver-plated conductor	1.90 ± N/A	0.84 ± N/A	PFA-51Y
● 50 154 244	RG223	50 Ω	-20 °C / + 80 °C (m)	silver-plated copper acc. to EN13602	5.38 ± 0.20	2.95 ± 0.10	PVC
● 50 154 305	RG316	50 Ω	-55 °C / + 200 °C (m)	STAKU – silver-plated conductor	2.50 ± 0.10	1.52 ± 0.05	FEP-6Y
● 50 154 644	RG316 D	50 Ω	-55 °C / + 200 °C (m)	STAKU – silver-plated conductor	2.90 ± 0.10	1.52 ± 0.05	FEP-6Y

# COAXIAL CONNECTORS

SMA (male), BNC (male)



## SMA (male)

Contact type: Pin  
 Connection type: Solder, Crimp

Part number	RG-Type	Matching Cables
● 50158488	58	50154255
	142	50154612
	223	50154244
● 50158484	178	50154086
	196	50284079
● 50158485	174	50153783
	188	50284084
	316	50154305
● 50289806	316 D	50154644

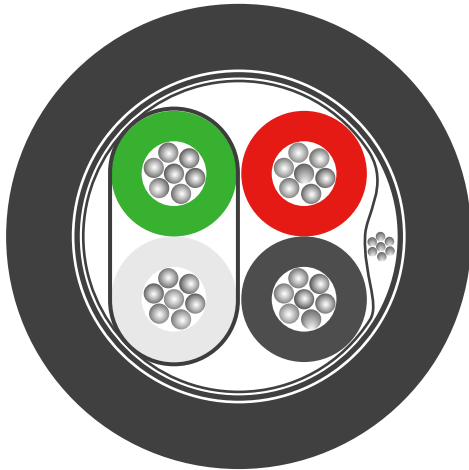
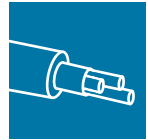
## BNC (male)

Contact type: Pin  
 Connection type: Solder, Crimp

Part number	RG-Type	Matching Cables
● 50252732	58	50154255
● 50256563	59	50153690
● 50283318	142	50154612
● 50277576	174	50153783
	188	50284084
	316	50154305
● 50283325	178	50154086
	196	50284079
● 50158363	179	50153706
	187	50153757
● 50283327	223	50154244
● 50289805	316 D	50154644



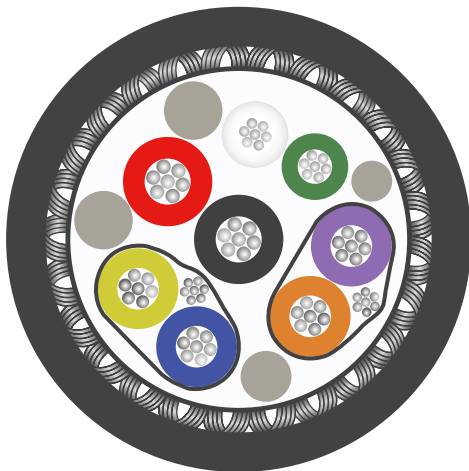
# USB® CABLE – BY THE METER



## TECHNICAL DATA

### USB 2.0

Conductor:	stranded copper wire
Composition:	1 x 2 x AWG 28 / 7 2 x AWG 28 / 7
Isolation:	PE Ø 0.8 mm PVC Ø 0.84 mm
Stranding:	2 cores stranded to a pair
Shielding:	tinned copper Ø 0.13 mm
Jacket / Jacket color:	TPU Ø 4.2 mm / black
Features:	oil resistant according to UL 758 Sec.15 (60°C)
UL-Style:	20963



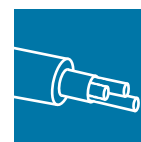
## TECHNICAL DATA

### USB 3.2 GEN 1 x 1

Conductor:	stranded copper wire
Composition:	2 x 2 x AWG 28 / 7 1 x 2 x AWG 28 / 7 2 x AWG 24 / 7
Isolation:	PE Ø 1.1 mm PE Ø 1.0 mm PE Ø 0.75 mm
Stranding:	2 cores stranded to a pair
Shielding:	tinned copper Ø 0.13 mm
Jacket / Jacket color:	TPU Ø 5.7 mm / black
Features:	halogen free acc. to IEC60754
UL-Style:	20963

Part number	Cores	Type and Configuration	Outer-Ø (mm)
● 50 154 487	4	USB® 2.0 Kabel	4.20
● 50 154 632	8	USB® 3.1 Gen1 Kabel	5.70

## DATA CABLES (PVC) USB® – PRE-ASSEMBLED



Part number	Cores	Type and Configuration	Outer-Ø (mm)	Length (m)	
● 50154619	4	USB® 2.0 (480 Mb/s) Connector A – Connector A 1 x 2 x AWG 28 + 2 x AWG 24	4.50	1.5	
● 50154628				3.0	
● 50154621	4	USB® 2.0 (480 Mb/s) Connector A – Micro-Connector B 1 x 2 x AWG 28 + 2 x AWG 28	4.50	1.8	
● 50154417	4	USB® 2.0 (480 Mb/s) Connector A – Receptacle A 1 x 2 x AWG 28 + 2 x AWG 24	4.50	1.8	
● 50154519				3.0	
● 50253671	8	USB® 3.2 Gen 1 x 1 (5 Gb/s) Connector A – Connector A 2 x 2 AWG 28 + 1 x 2 x AWG 28 + 2 x AWG 24	5.50	1.8	
● 50261725	8	USB® 3.2 Gen 1 x 1 (5 Gb/s) Connector A – Receptacle A 2 x 2 AWG 28 + 1 x 2 x AWG 28 + 2 x AWG 24	5.50	3.0	
● 50261727	8	USB® 3.0 Gen 1x1 (5 Gb/s) Connector A – Micro-Connector B 2 x 2 AWG 28 + 1 x 2 x AWG 28 + 2 x AWG 24	5.50	3.0	
● 50282854	15	USB® 3.2 Gen 2x2 (20 Gb/s) Connector C – Connector C	4.90	2.0	
● 50282853				1.0	
● 50282848	15	USB® 3.2 Gen 2x2 (40 Gb/s) Connector C – Connector C	4.90	0.5	

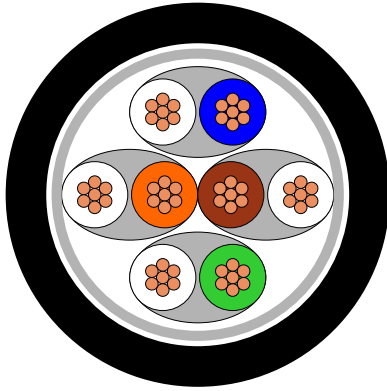
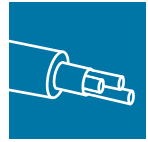
for data transmission protocols please refer to page 2

## DATA CABLES (PVC) HDMI® – PRE-ASSEMBLED

Part number	Cores	Type and Configuration	Outer-Ø (mm)	Approx. length (m)	
● 50283340	14	HDMI® 2.0 Kabel Connector A – Receptacle A 5 x 2 x AWG 28 + 4 x AWG 28	7.3	0.5	
● 50283347	14	HDMI® 2.0 Kabel Connector A – Receptacle A 5 x 2 x AWG 28 + 4 x AWG 28	7.3	1.0	
● 50283348	14	HDMI® 2.0 Kabel Connector A – Receptacle A 5 x 2 x AWG 28 + 4 x AWG 28	7.3	3.0	

for data transmission protocols please refer to page 2

# PATCH CABLES – BY THE METER (AWG26)



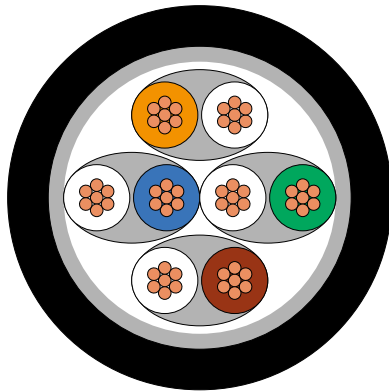
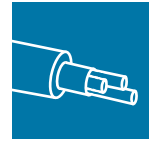
## TECHNICAL DATA

Conductor:	bare copper wire, $\varnothing$ 0.14 mm <sup>2</sup>
Isolation:	DMC FLEX PUR, black, RAL 9005 (jacket) Foam-Skin PE, 1.0 mm (core)
Stranding:	2 cores stranded to a pair – 4 pairs
Shielding:	tinned copper braid $\varnothing$ 5.10 mm
Pair shielding:	aluminium-coated plastic composite foil
Wrapping:	synthetic fleece
Operating temperature:	-20 °C to +60 °C
Installation temperature:	+0 °C to +50 °C

Part number	Type	Cores	Jacket	Outer- $\varnothing$ (mm)
● 50 154 386	Cat 7 <sub>A</sub>	8	PUR	6.40

Part number	Type	Cores	Jacket	Outer- $\varnothing$ (mm)
● 50 265 542	Cat 7	8	TPE-V	6.50

# PATCH CABLES – PRE-ASSEMBLED



## TECHNICAL DATA

Conductor:	bare copper wire, $\varnothing$ 0.46 mm <sup>2</sup> AWG 27 / 7
Isolation:	LSZH $\varnothing$ 5.80 mm (jacket) / PVC PE $\varnothing$ 1.02 mm (core)
Shielding:	tinned copper braid
Particle intrusion:	IP2X
Water / Submerge:	IPX0
Ambient temperature:	-40 °C to + 75 °C
Halogen-free:	IEC 60754-2
Flame retardant:	IEC 60332-1; UL 444 CM
Transmission characteristics:	suitable for 10 Gigabit Ethernet Category 6A: ISO/IEC 11801; DIN EN 50173-1 Class EA: ISO/IEC 11801; DIN EN 50173-1 Category 6A: ANSI/TIA/EIA-568-C.2
UL listed:	E244889

Part number	Type	Cores	Length in m	Color
● 50 154 589	Cat 6 <sub>A</sub>	8	0.5	Black
● 50 278 228	Cat 6 <sub>A</sub>	8	1.0	Black
● 50 242 421	Cat 6 <sub>A</sub>	8	2.0	Black
● 50 154 629	Cat 6 <sub>A</sub>	8	5.0	Black
● 50 247 616	Cat 6 <sub>A</sub>	8	7.5	Black
● 50 241 848	Cat 6 <sub>A</sub>	8	10.0	Black

Part number	Type	Cores	Length in m	Color
● 50 240 332	Cat 6 <sub>A</sub>	8	3.0	Gray
● 50 237 750	Cat 6 <sub>A</sub>	8	5.0	Yellow
● 50 269 400	Cat 6 <sub>A</sub>	8	5.0	Red
● 50 266 381	Cat 6 <sub>A</sub>	8	25.0	Red
● 50 154 362	Cat 6 <sub>A</sub>	8	10.0	Green

# PATCH CABLE – EXTENSION PIN / SOCKET

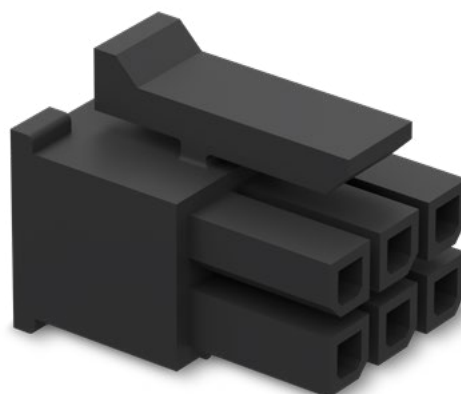
Part number	Type	Cores	Length in m	Color
● 50 244 069	Cat 6 <sub>A</sub>	8	3.0	Black

# PCB CONNECTORS – MOLEX MICRO-FIT 3.0

Wire-to-Wire / Wire-to-Board



Part number housing	Contacts	AWG	Contact type	Connection type	Series	Matching contacts
● 50278997	2	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50158592	4	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50279003	6	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50268857	8	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50241528	10	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50158606	12	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50279004	14	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50279005	16	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50158591	18	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50158879	20	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50279006	22	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026
● 50279007	24	20–24	Socket	Crimp contact	Micro-Fit 3.0	50158769
		26–30				50279026

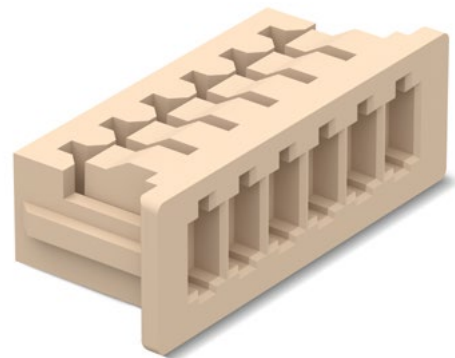


# PCB CONNECTORS – MOLEX PICOBLADE 1.25 MM

Wire-to-Wire / Wire-to-Board



Part number housing	Contacts	AWG	Contact type	Connection type	Series	Matching contacts
● 50 158 450	2	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 433	3	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 248 691	4	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 685	5	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 421	6	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 461	7	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 422	8	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 251 044	9	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 451	10	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 263 783	11	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 279 015	12	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 279 019	13	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 158 429	14	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652
● 50 279 023	15	26–28	Socket	Crimp contact	Molex 1.25 mm	50 158 652

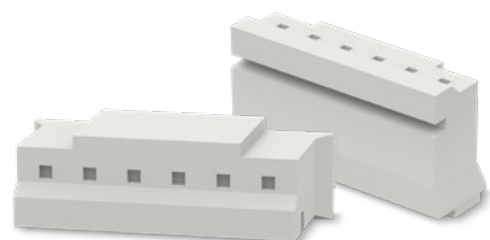


# PCB CONNECTORS – JST PH

Wire-to-Board

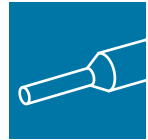


Part number housing	Contacts	AWG	Contact type	Connection type	Series	Matching contacts
● 50267386	2	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158822	3	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158856	4	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158823	5	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158821	6	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50237802	7	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158820	8	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50263548	9	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158837	10	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50158828	11	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50279054	12	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50279055	13	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50279056	14	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50279057	15	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624
● 50279060	16	30–24	Socket	Crimp contact	PH	50158622
		28–24				50158624



# END TERMINALS

Uninsulated / Insulated

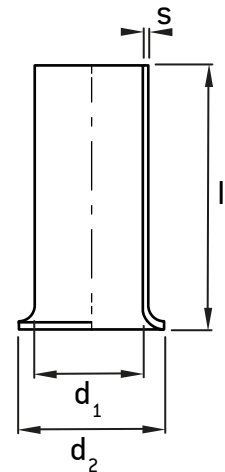


## Uninsulated

DIN (N): 46228  
Material: SF-CU acc. to DIN 1787



Part number	AWG	mm <sup>2</sup>	l	Dimensions (mm)		
				d1	d2	s
50 153 553	14	2.50	7.00	0.80	1.70	0.15
50 153 551	16	1.50	7.00	1.80	2.80	0.15
50 153 549	18	1.00	6.00	1.20	2.30	0.15
50 153 548	19	0.75	6.00	1.30	2.30	0.15
50 153 547	20	0.50	6.00	1.10	2.21	0.15
50 153 570	22	0.34	5.00	0.90	1.80	0.15
50 153 569	24	0.25	5.00	0.80	1.70	0.15
50 153 568	26	0.14	7.00	0.70	1.60	0.15
50 153 567	28	0.08	7.00	0.50	1.60	0.15

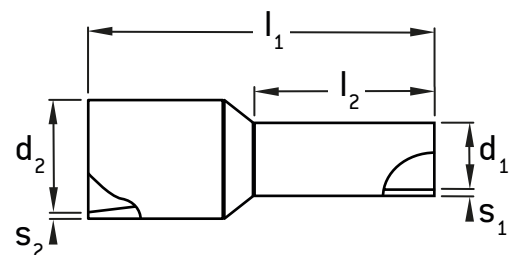


## Insulated

DIN (N): 46228  
Material: SF-CU acc. to DIN 1787



Part number	AWG	Color	mm <sup>2</sup>	Dimensions (mm)					
				l1	l2	d1	s1	d2	s2
50 153 583	14	Blue	2.50	14.00	8.00	2.20	0.15	4.20	0.25
50 153 581	16	Black	1.50	14.00	8.00	1.70	0.15	3.50	0.25
50 153 605	18	Red	1.00	14.00	8.00	1.40	0.15	3.00	0.25
50 153 603	19	Gray	0.75	14.00	8.00	1.20	0.15	2.80	0.25
50 153 600	20	White	0.50	14.00	8.00	1.00	0.15	2.60	0.25
50 153 599	22	Pink	0.34	10.40	6.00	0.90	0.15	2.00	0.25
50 153 596	24	Violet	0.25	10.40	6.00	0.80	0.15	1.80	0.25
50 153 592	26	Gray	0.14	10.40	6.00	0.70	0.12	1.10	0.25





# RING TERMINALS

Uninsulated



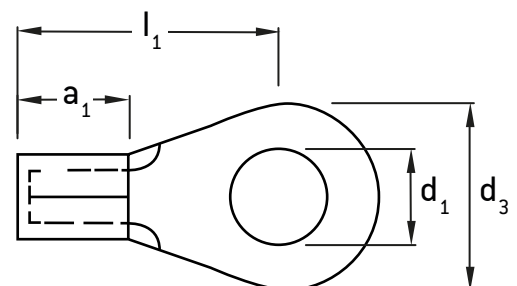
## Uninsulated

Ring type: DIN 46234 and similar from 10 mm<sup>2</sup> acc. to VG 88710

Material: E-CU, surface galvanically tinned



Part number	AWG	Nominal Size	mm <sup>2</sup>	Dimensions (mm)			
				d1	d3	l1	a1
● 50 155 951	26–20	M2	0.14–0.50	2.20	5.00	9.00	5
● 50 155 952		M3		3.20	5.00	9.00	5
● 50 155 953		M4		4.30	7.00	12.00	5
● 50 280 842		M5		5.30	8.00	12.00	5
● 50 155 954	20–16	M2.5	0.50–1.50	2.70	6.00	11.00	5
● 50 155 955		M3		3.20	6.00	11.00	5
● 50 155 956		M4		4.30	8.00	12.00	5
● 50 280 843		M5		5.30	10.00	13.00	5
● 50 280 844		M6		6.50	10.00	13.00	5
● 50 280 845		M8		8.50	14.00	17.00	5
● 50 280 846		M10		10.50	14.00	17.00	5
● 50 155 957	16–14	M3	1.50–2.50	3.20	6.00	11.00	5
● 50 155 958		M4		4.30	8.00	12.00	5
● 50 155 959		M5		5.30	10.00	14.00	5
● 50 280 847		M6		6.50	11.00	16.00	5
● 50 280 848		M8		8.40	14.00	17.00	5
● 50 280 849		M10		10.50	15.00	17.00	5
● 50 280 850		M12		13.00	18.00	20.00	5
● 50 289 082	12–10	M4	4.0–6.0	4.30	8.00	14.00	5
● 50 289 083		M5		5.30	10.00	15.00	5
● 50 289 084	8	M5	10.0	5.30	10.00	16.00	5



# RING TERMINALS

Insulated



## Insulated

Ring type:

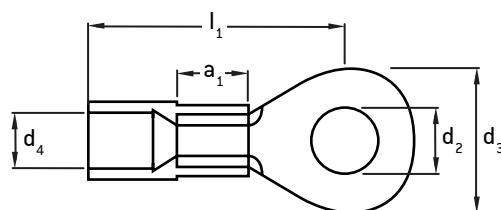
DIN 46237

Material:

E-CU gal Sn; Isolation: PA



Part number	AWG	Color	Nominal Size	mm <sup>2</sup>	Dimensions (mm)				
					d2	d3	d4	l1	a1
● 50155964	26–20	Yellow	M2	0.14–0.50	2.20	5.00	2.30	16.00	8.00
● 50155965			M3		3.20	5.00	2.30	16.00	8.00
● 50155966			M4		4.30	6.00	2.30	17.00	8.00
● 50281309			M5		5.30	8.00	2.30	16.00	8.00
● 50281310	20–16	Red	M2.5	0.50–1.50	2.70	6.00	4.00	16.00	10.00
● 50155967			M3		3.20	6.00	4.00	16.00	10.00
● 50155968			M4		4.30	8.00	4.00	17.00	10.00
● 50244675			M5		5.30	10.00	4.00	18.00	10.00
● 50281301			M6		6.50	11.00	4.00	21.00	10.00
● 50281302			M8		8.40	14.00	4.00	22.00	10.00
● 50281303			M10		10.50	18.00	4.00	22.00	10.00
● 50155969	16–14	Blue	M3	1.50–2.50	3.20	6.00	4.50	17.00	11.00
● 50155970			M4		4.30	8.00	4.50	18.00	11.00
● 50281305			M5		5.30	10.00	4.50	20.00	11.00
● 50243910			M6		6.50	11.00	4.50	22.00	11.00
● 50281306			M8		8.40	14.00	4.50	23.00	11.00
● 50281307			M10		10.50	18.00	4.50	25.00	11.00
● 50281308			M12		13.00	18.00	4.50	25.00	11.00
● 50289085	12–10	Yellow	M4	4.0–6.0	4.30	8.00	6.60	20.00	14.00
● 50289086			M5		5.30	10.00	6.60	21.00	14.00
● 50289087	10–8	Red	M5	6.0–10.0	5.30	10.00	7.50	24.00	16.00



# FLAT RECEPTACLE – STRAIGHT

Uninsulated / Insulated



## Uninsulated

Acc. to: DIN 46247 and DIN 46330

Material: E-CU gal Sn



Part number	AWG	mm <sup>2</sup>	Dimensions (mm)	
			Plug-in width	Plug-in height
● 50281024	26–20	0.14–0.25	2.80	0.80
● 50281025	20–16	0.50–1.50	2.80	0.50
● 50281026			2.80	0.80
● 50281028			4.80	0.80
● 50158700			4.80	0.80
● 50158701			6.30	0.80
● 50281029	16–14	1.50–2.50	4.80	0.80
● 50158717			6.30	0.80

## Insulated

Acc. to: DIN 46247 and DIN 46330

Material: E-CU gal Sn; Isolation: PA



Part number	AWG	Color	mm <sup>2</sup>	Dimensions (mm)	
				Plug-in width	Plug-in height
● 50281136	26–20	Yellow	0.14–0.50	2.80	0.50
● 50281137				2.80	0.80
● 50281138	20–16	Red	0.50–1.50	2.80	0.50
● 50281139				2.80	0.80
● 50281140				4.80	0.50
● 50241589				4.80	0.80
● 50263182				6.30	0.80
● 50281141	16–14	Blue	1.50–2.50	2.80	0.50
● 50281142				2.80	0.80
● 50281144				4.80	0.50
● 50281147				4.80	0.80
● 50158752				6.30	0.80

# CORRUGATED TUBE GLANDS



## Tube glands (for corrugated tubes)

Material: nickel-plated brass and plastic (polyamide 6)

The glands match the corrugated tubes on page 63.

Part number	Thread	Clamping range in mm	Suitable sealing insert	Color
● 50 290 381	M25 x 1.5	9.0–13.0	N/A	Black
● 50 262 674	M25 x 1.5	customizable <sup>1)</sup>	50 253 520	Black
● 50 290 382	M32 x 1.5	17.0–20.5	N/A	Black
● 50 262 696	M32 x 1.5	customizable <sup>1)</sup>	50 253 543	Black
● 50 290 383	M40 x 1.5	24.0–28.0	N/A	Black
● 50 244 674	M40 x 1.5	customizable <sup>1)</sup>	50 253 549	Black
● 50 290 384	M50 x 1.5	32.0–36.0	N/A	Black
● 50 262 722	M50 x 1.5	customizable <sup>1)</sup>	50 253 556	Black

<sup>1)</sup>The sealing insert can be drilled if multiple cables are fed through the gland.

## Tube glands (for corrugated hoses)

Material: Plastic (polyamide 6)

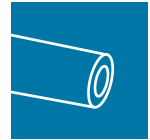
The glands match the corrugated hoses on page 63.

Part number	Thread	Clamping range in mm	Color
● 50 262 465	M25 x 1.5	11.0–16.0	Gray
● 50 245 149	M32 x 1.5	15.0–21.0	Gray
● 50 245 097	M40 x 1.5	16.0–26.0	Gray
● 50 262 522	M50 x 1.5	27.0–35.0	Gray



# TUBES AND HOSES

Corrugated tubes and hoses, braided sleeving



## Corrugated tubes

Material: Plastic (polyamide 6)

The corrugated tubes match the glands on page 62.

Part number	Thread	Nominal size
● 50 262 751	M25 x 1.5	23
● 50 262 754	M32 x 1.5	29
● 50 241 062	M40 x 1.5	36
● 50 262 760	M50 x 1.5	48

## Corrugated hoses

Material: Polyurethane

The corrugated hoses match the glands on page 62.

Part number	Thread	Nominal size
● 50 262 587	M25 x 1.5	21
● 50 245 168	M32 x 1.5	28
● 50 156 804	M40 x 1.5	34
● 50 262 593	M50 x 1.5	42

## Braided sleeving

Material: Polyamide PA6.6 – halogen-free

Part number	Clamping range in mm	Nominal size
● 50 262 763	4.0–10.0	6
● 50 262 764	10.0–14.0	12
● 50 262 769	14.0–24.0	16

Part number	Clamping range in mm	Nominal size
● 50 262 770	18.0–26.0	20
● 50 160 254	26.0–34.0	30
● 50 262 772	32.0–42.0	40



# CABLE GLANDS

Plastic (polyamide)

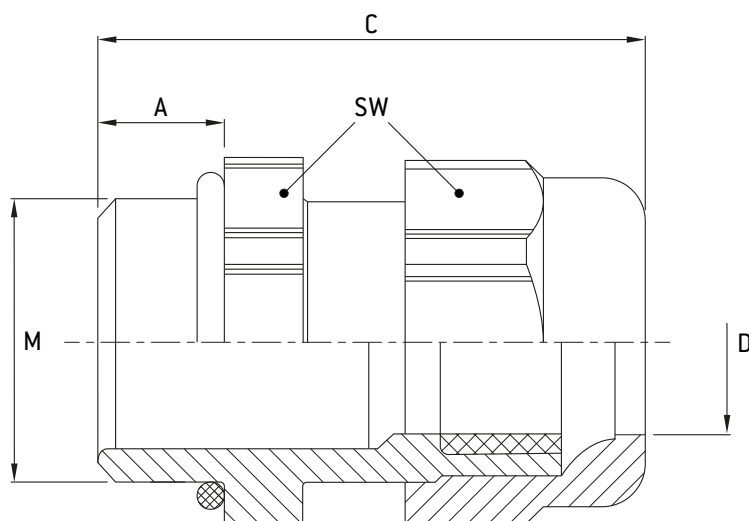


## Cable glands

Material: Plastic (polyamide)

Color: white, gray, black

Part number	Thread M	SW	Clamping range D in mm	Total length C in mm	Thread length A in mm	Color
● 50231 135	M25 x 1.5	30.0	9.0–17.0	40.0	10.0	White
● 50231 136						Gray
● 50020 194						Black
● 50231 138	M32 x 1.5	36.0	11.0–21.0	47.0	10.0	White
● 50231 139						Gray
● 50020 196						Black
● 50231 140	M40 x 1.5	46.0	19.0–28.0	52.0	10.0	White
● 50231 141						Gray
● 50238 956						Black
● 50231 142	M50 x 1.5	55.0	27.0–35.0	62.0	12.0	White
● 50231 143						Gray



# CABLE GLANDS WITH SEALING INSERTS

Plastic (polyamide)



## Cable glands

Material cable gland: Plastic (polyamide), black

Material sealing insert: TPE (Thermoplastic elastomers)

Part number	Thread	Cable gland		Technical drawings		Sealing insert part number
		Clamping range	Inner diameter Ø in mm			
● 50254736	M25 x 1.5	17.0–20.5	20.5			50253520
● 50253364	M25 x 1.5	24.0–28.0	20.5			50253543
● 50290386	M25 x 1.5	14.0–18.0	21.0			50253520
● 50290392	M32 x 1.5	20.0–25.0	25.0			50253543
● 50253380	M32 x 1.5	24.0–28.0	25.0			50253543

# CABLE GLANDS WITH SEALING INSERTS

Plastic (polyamide)



## Cable glands

Material cable gland: Plastic (polyamide), black

Material sealing insert: TPE (Thermoplastic elastomers)

Part number	Thread	Cable gland		Technical drawings	Sealing insert part number
		Clamping range	Inner diameter Ø in mm		
● 50253465	M40 x 1.5	32.0–36.0	34.5		50253549
● 50290393	M40 x 1.5	27.0–32.0	35.0		50253549
● 50290394	M50 x 1.5	37.0–32.0	37.0		50233561
● 50253479	M50 x 1.5	32.0–36.0	37.0		50253561





# CABLE GLANDS WITH SEALING INSERTS

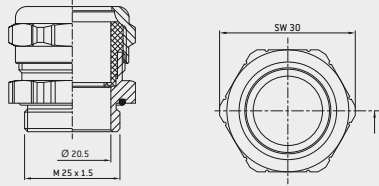
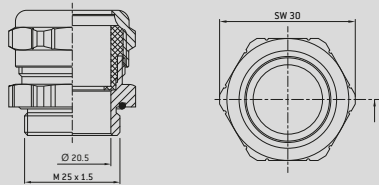
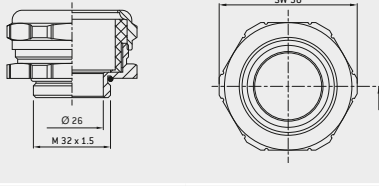
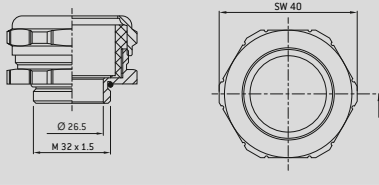
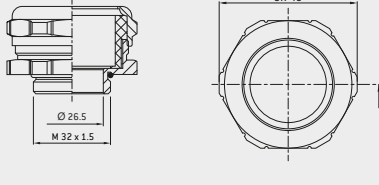
Nickel plated brass



## Cable glands

Material cable gland: Nickel plated brass

Material sealing insert: TPE (Thermoplastic elastomers)

Part number	Thread	Clamping range	Cable gland		Technical drawings	Sealing insert part number
			Inner diameter Ø in mm			
● 50253340	M25 x 1.5	17.0–20.5	20.5			50253520
● 50290395	M25 x 1.5	14.0–18.0	20.5			50253520
● 50253376	M32 x 1.5	32.0–36.0	26.0			50253549
● 50254723	M32 x 1.5	24.0–28.0	26.5			50253543
● 50290396	M32 x 1.5	20.0–25.0	26.5			50253543

# CABLE GLANDS WITH SEALING INSERTS

Nickel plated brass



## Cable glands

Material cable gland: Nickel plated brass

Material sealing insert: TPE (Thermoplastic elastomers)

Part number	Thread	Clamping range	Cable gland		Technical drawings	Sealing insert part number
			Inner diameter Ø in mm			
● 50253447	M40 x 1.5	32.0–36.0	34.5			50253549
● 50290397	M40 x 1.5	27.0–32.0	34.5			50253549
● 50290398	M50 x 1.5	33.0–38.0	42.0			50253556
● 50253473	M50 x 1.5	36.0–40.0	42.0			50253556



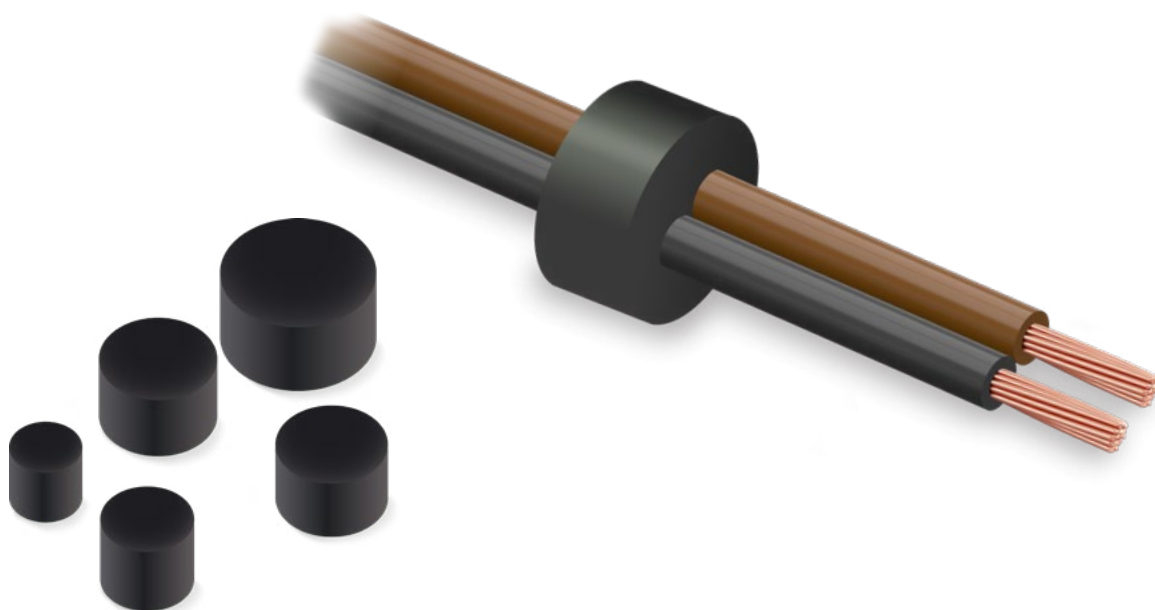
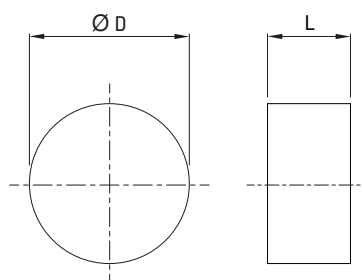
# CUSTOMIZABLE SEALING INSERTS

Sealing inserts only suitable for the standard cable glands from LAPP



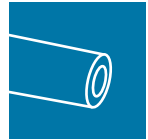
Material: Chloroprene rubber (CR)  
Color: black

Part number	Ø (mm)	l (mm)	Thread
● 50253 751	17.2	9.5	M25
● 50253 756	21.2	12.0	M32
● 50253 764	28.2	14.5	M40
● 50253 767	35.8	18.0	M50



# AIR- AND FLUID HOSES

Lubricants, compressed air & water



## Lubricants

Material: Polyamide  
Color: blue

Part number	Usage	Dimensions (mm)	
		Outer-Ø	Inner-Ø
● 50279622	Lubricants	6.00	2.5
● 50279623		8.00	4.0
● 50279625		10.00	6.0
● 50279626		12.00	7.5
● 50279629		14.00	9.0

## Compressed air & water

Material: Polyurethane  
Color: black

Part number	Usage	Dimensions (mm)	
		Outer-Ø	Inner-Ø
● 50279630	Compressed air & water	3.00	2.10
● 50279632		4.00	2.60
● 50279633		6.00	4.00
● 50279634		8.00	5.70
● 50279635		10.00	7.00
● 50279636		12.00	8.00



# CABLE LABELING

ABC

## Self-laminating labels

Material: Permanent adhesive and flame retardant vinyl (B-427)

Color: matt, white / transparent

Part number	Ø max [mm]	Dimensions [mm]		
		A	B	C printable area
● 50156161	3	12.70	19.05	9.53
● 50156162	4	19.05	23.81	9.52
● 50156163	7	20.32	36.50	12.70
● 50156164	10	19.05	44.45	12.70
● 50156165	12	25.40	57.15	19.05
● 50156166	19	48.26	80.95	19.05
● 50156167	36	25.40	152.40	38.10



1. Apply the printed part first.



2. Then wrap the transparent part over it so that the labeling is covered.



3. After applying the transparent laminate the labeling is protected for many years.

# CABLE LABELING

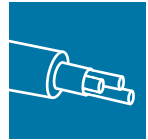
ABC

## Heat shrinkable tubing

Material: Polyolefin Imprint: thermal-transfer  
 Operating temperature: -55 °C up to + 135 °C Certifications: UL (File E35586); CSA (File 31929)  
 Max. storage temperature: + 40 °C Print color: black, silver, blue

Part number	Color	∅ (mm) Cable	∅ (mm) before shrinking	∅ (mm) after shrinking
● 50 157 020	Black	0.8 – 1.9	2.36	0.79
● 50 156 880	White	0.8 – 1.9	2.36	0.79
● 50 157 021	Black	1.11 – 2.66	3.18	1.07
● 50 156 903	Yellow	1.11 – 2.66	3.18	1.07
● 50 156 881	White	1.11 – 2.66	3.18	1.07
● 50 157 022	Black	1.75 – 4.06	4.75	1.57
● 50 156 904	Yellow	1.75 – 4.06	4.75	1.57
● 50 156 882	White	1.75 – 4.06	4.75	1.57
● 50 157 023	Black	2.31 – 5.46	6.35	2.11
● 50 156 905	Yellow	2.31 – 5.46	6.35	2.11
● 50 156 883	White	2.31 – 5.46	6.35	2.11
● 50 157 019	Black	3.47 – 8.12	9.53	3.18
● 50 156 906	Yellow	3.47 – 8.12	9.53	3.18
● 50 156 884	White	3.47 – 8.12	9.53	3.18
● 50 157 025	Black	4.64 – 10.79	12.70	4.22
● 50 156 907	Yellow	4.64 – 10.79	12.70	4.22
● 50 156 885	White	4.64 – 10.79	12.70	4.22
● 50 157 026	Black	6.99 – 16.25	19.05	6.35
● 50 156 886	White	6.99 – 16.25	19.05	6.35

# BASIC INFORMATION CABLE ASSEMBLY



Date	
Customer (company, contact person)	
Customers project name	
Regional Sales Manager	
ODU DE Application Manager	
ODU Project ID	
Annual quantity	
Target price	
Lifetime of project	
Target date for prototypes	
Target date for series parts	

Configuration	Side 1	Side 2
Connector		
Assembly length (top to top)		
Bend relief or overmolding (part number, color)		
Cable proposal from ODU catalog standard cables and accessories	Part no.	
Cable from 3rd party supplier (if yes, datasheet required)	Part no.	

Application	
Electrical operating req'ts (voltage, amp, frequency, data protocol, ...)	
Environmental req'ts (IP, temp, ...)	
Further requests (autoclaving, sterilization, chemicals, packaging, labels, ...)	
Special cable requirements (temperature range, flexibility, color, AWG wire gage, number of conductors...)	
Free-issued parts	

# CONDUCTOR RESISTANCES

acc. to IEC / EN 60228; HD 383; VDE 0295



Nominal cross section mm <sup>2</sup>	Bare copper conductor (0hm / km)		Cu-conductor tin-plated (0hm / km)	
	Class 1 & 2	Class 5 & 6	Class 1 & 2	Plug-in height
0.05	–	~ 380	–	~ 392
0.08	–	~ 237	–	~ 244
0.11	–	~ 170	–	~ 175
0.126	–	~ 150	–	~ 155
0.14	–	~ 134	–	~ 138
0.22	–	~ 96	–	~ 99
0.25	–	~ 76	–	~ 79
0.34	–	~ 53	–	~ 56
0.50	36.00	39.00	36.70	40.10
0.75	24.50	26.00	24.80	26.70
1.0	18.10	19.50	18.20	20.00
1.5	12.10	13.30	12.20	13.70
2.5	7.41	7.98	7.56	8.21
4.0	4.61	4.95	4.70	5.09
6.0	3.08	3.30	3.11	3.39
10.0	1.83	1.91	1.84	1.95

The values are listed according to DIN VDE 0295 (corresponds to the international standards EN 60228 and HD 383), depending on the conductor cross-section and conductor class, but from 0.5 mm<sup>2</sup>. The cross sections of the individual wires of each stranded conductor must not exceed the specified maximum values (see DIN VDE 0295), which are necessary to maintain the maximum conductor resistance at 20 °C.

**Class 1** = Solid conductors for single and multi-core cables

**Class 2** = Stranded conductors for single and multicore cables

**Class 5** = Fine-stranded copper conductors for single and multi-core cables

**Class 6** = Fine-stranded copper conductors for single and multi-core cables



# WIRE CONSTRUCTIONS

acc. to IEC / EN 60228; HD 383; VDE 0295



Conductor cross section mm <sup>2</sup>	Stranded Class 2 DIN VDE 0295	Multiple-wire	Flexible Class 5 DIN VDE 0295	Highly flexible Class 6 DIN VDE 0295			
	Wire count x Single wire Ø	Wire count x Single wire Ø	Wire count x Single wire Ø	Wire count x Single wire Ø	Wire count x Single wire Ø	Wire count x Single wire Ø	Wire count x Single wire Ø
0.14		7 x 0.16	~ 18 x 0.10	~ 18 x 0.10	~ 18 x 0.10	~ 36 x 0.07	~ 72 x 0.05
0.25			~ 14 x 0.15	~ 32 x 0.10	~ 32 x 0.10	~ 65 x 0.07	~ 128 x 0.05
0.34		7 x 0.25	~ 19 x 0.15	~ 42 x 0.10	~ 42 x 0.10	~ 88 x 0.07	~ 180 x 0.05
0.38		7 x 0.27	~ 12 x 0.20	~ 21 x 0.15	~ 48 x 0.10	~ 100 x 0.07	~ 194 x 0.05
0.50	7 x 0.30	7 x 0.30	~ 16 x 0.20	~ 28 x 0.15	~ 64 x 0.10	~ 131 x 0.07	~ 256 x 0.05
0.75	7 x 0.37	7 x 0.37	~ 24 x 0.20	~ 42 x 0.15	~ 96 x 0.10	~ 195 x 0.07	~ 384 x 0.05
1.00	7 x 0.43	7 x 0.43	~ 32 x 0.20	~ 56 x 0.15	~ 128 x 0.10	~ 260 x 0.07	~ 512 x 0.05
1.50	7 x 0.52	7 x 0.52	~ 30 x 0.25	~ 84 x 0.15	~ 192 x 0.10	~ 392 x 0.07	~ 768 x 0.05
2.50	7 x 0.67	~ 19 x 0.41	~ 50 x 0.25	~ 140 x 0.15	~ 320 x 0.10	~ 651 x 0.07	~ 1280 x 0.05
4.00	7 x 0.85	~ 19 x 0.52	~ 56 x 0.30	~ 224 x 0.15	~ 512 x 0.10	~ 1040 x 0.07	
6.00	7 x 1.05	~ 19 x 0.64	~ 84 x 0.30	~ 192 x 0.20	~ 768 x 0.10	~ 1560 x 0.07	
10.00	7 x 1.35	~ 49 x 0.51	~ 80 x 0.40	~ 320 x 0.20	~ 1280 x 0.10	~ 2600 x 0.07	
16.00	7 x 1.70	~ 49 x 0.65	~ 128 x 0.40	~ 512 x 0.20	~ 2048 x 0.10		
25.00	7 x 2.13	~ 84 x 0.62	~ 200 x 0.40	~ 800 x 0.20	~ 3200 x 0.10		
35.00	7 x 2.52	~ 133 x 0.58	~ 280 x 0.40	~ 1120 x 0.20			
50.00	~ 19 x 1.83	~ 133 x 0.69	~ 400 x 0.40	~ 705 x 0.30			
70.00	~ 19 x 2.17	~ 189 x 0.69	~ 356 x 0.50	~ 990 x 0.30			
95.00	~ 19 x 2.52	~ 259 x 0.69	~ 485 x 0.50	~ 1340 x 0.30			
120.00	~ 37 x 2.03	~ 336 x 0.67	~ 614 x 0.50	~ 1690 x 0.30			

# COLOR CODE ACC. TO DIN 47100

Cored without color repetition



Core	Core Color	Code
1	White	ws
2	Brown	br
3	Green	gn
4	Yellow	ge
5	Gray	gr
6	Pink	rs
7	Blue	bl
8	Red	rt
9	Black	sw
10	Violet	vio
11	Gray-Pink	grrs
12	Red-Blue	rtbl
13	White-Green	wsgn
14	Brown-Green	brgn
15	White-Yellow	wsge
16	Yellow-Brown	gebr
17	White-Gray	wsgr
18	Gray-Brown	grbr
19	White-Pink	wsrs
20	Pink-Brown	rsbr
21	White-Blue	wsbl
22	Brown-Blue	brbl
23	White-Red	wsrt
24	Brown-Red	brrt
25	Brown-Black	wssw
26	Gray-Green	grgn
27	Yellow-Gray	gegr
28	Pink-Green	rsgn
29	Yellow-Pink	gers
30	Green-Blue	gnbl
31	Green-Blue	gnbl

Core	Core Color	Code
32	Yellow-Blue	gebl
33	Green-Red	gnrt
34	Yellow-Red	gert
35	Green-Black	gnsw
36	Yellow-Black	gesw
37	Gray-Blue	grbl
38	Pink-Blue	gsbl
39	Gray-Red	grrt
40	Pink-Red	rsrt
41	Gray-Black	grsw
42	Pink-Black	rssw
43	Blue-Black	blsw
44	Red-Black	rtsw
45	White-Brown-Black	wsbrsw
46	Yellow-Green-Black	gegns
47	Green-Brown-Black	grrssw
48	White-Yellow-Black	blrtsw
49	Yellow-Brown-Black	wsgnsw
50	Green-Brown-Black	gnbrsw
51	White-Yellow-Black	wsgesw
52	Yellow-Brown-Black	gebrsw
53	White-Gray-Black	wsgrsw
54	Gray-Brown-Black	grbrsw
55	White-Pink-Black	wsrsw
56	Pink-Brown-Black	rsbrsw
57	White-Blue-Black	wsblsw
58	Brown-Blue-Black	brblsw
59	White-Red-Black	wsrtsw
60	Brown-Red-Black	brrtsw
61	Black-White	swws

- The cores are counted starting in the outer layer and continuing through all layers in the same direction. The first color is the base color
- The 2<sup>nd</sup> and 3<sup>rd</sup> color is applied in the form of abrasion-resistant color rings. For 2 and 3-colored cores, the characters of the color code are lined up directly next to each other
- For cables with color repetition, the color code starts again with white<sup>(1)</sup> from the 45<sup>th</sup> core onwards.
- For paired cores, always the two colors named in sequence are stranded. The color code is repeated from the 23<sup>rd</sup> and 45<sup>th</sup> pair onwards.

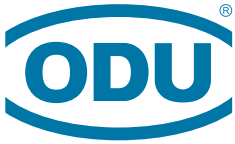
# INTERNATIONAL COLOR CODE / IC - CODE

For UL / CSA control cables



Core	Core Color
1	Black
2	Brown
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Violet
9	Gray
10	White
11	White-Black
12	White-Brown
13	White-Red
14	White-Orange
15	White-Yellow
16	White-Green
17	White-Blue
18	White-Violet
19	White-Gray
20	Brown-Black
21	Brown-Red
22	Brown-Orange
23	Brown-Yellow
24	Brown-Green
25	Brown-Blue
26	Brown-Violet
27	Brown-Gray
28	Brown-White
29	Green-Black
30	Green-Brown

Core	Core Color
31	Green-Red
32	Green-Orange
33	Green-Blue
34	Green-Violet
35	Green-Gray
36	Green-White
37	Yellow-Black
38	Yellow-Brown
39	Yellow-Red
40	Yellow-Orange
41	Yellow-Blue
42	Yellow-Violet
43	Yellow-Gray
44	Yellow-White
45	Gray-Black
46	Gray-Brown
47	Gray-Red
48	Gray-Orange
49	Gray-Yellow
50	Gray-Green
51	Gray-Blue
52	Gray-Violet
53	Gray-White
54	Orange-Black
55	Orange-Brown
56	Orange-Red
57	Orange-Yellow
58	Orange-Green
59	Orange-Blue
60	Orange-Violet



A PERFECT ALLIANCE.

## ODU GROUP WORLDWIDE



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#### Further information and specialized representatives can be found at:

[www.odu-connectors.com/contact](http://www.odu-connectors.com/contact)

### PRODUCTION AND LOGISTICS SITES

- Germany** Otto Dunkel GmbH
- China** ODU (Shanghai) Connectors Manufacturing Co., Ltd.
- Mexico** ODU Mexico Manufacturing S. de R.L. de C.V.
- Romania** ODU Romania Manufacturing SRL
- USA** ODU North American Logistics Inc.



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ODU CM 10UE

Cable Assembly / C / 0220 / EN