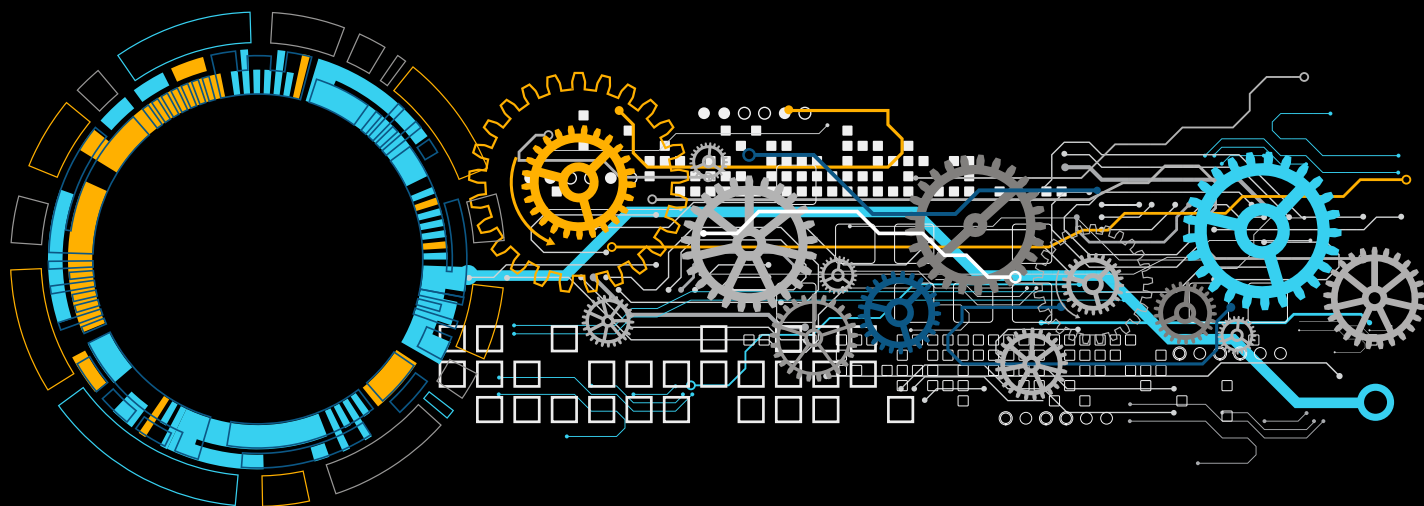


AUTOMATION CABLES

Syncro FTech Cable



Special Cables & Conductors

AUTOMATION CABLES

Syncro FTech Cable

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In the world of industrial automation, the reliability and efficiency of systems largely depend on the quality of the components used. Among these, cables play a fundamental role in ensuring the optimal transmission of data, signals, and power.

We are proud to present our **Syncro FTech Cable** range, a line of cables designed to meet the most advanced needs of the sector. FTC cables are particularly suitable for long-travel drag chain applications. Their versatility makes them ideal for control equipment in machine tools, automation technologies, high-tech systems, as well as for fieldbus connections with controlled impedance.

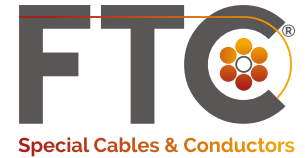
In addition, they are designed for connections to industrial electronic systems such as sensors, actuators, encoders, and resolvers, as well as for hybrid applications requiring supply, power, and servomotor signals. The **Syncro FTech Cable** product line for automation is also available in versions compliant with **UL standards**.

In this catalog, you will find solutions developed to address the most complex challenges of modern industry. Each cable is the result of rigorous technological research, aimed at delivering high performance, durability, and compliance with international standards. We are ready to support your projects with reliable and customizable products, ensuring the efficiency and safety of your industrial systems.



Syncro FixTech Cable

CABLES FOR FIXED INSTALLATION



Multipolar and unipolar power, control, and signal cables represent the perfect solution where installation space is limited. These cables are designed for fixed installation on machinery or for occasional, non-cyclic mobile applications. Their excellent resistance to oil and abrasion allows them to be used in static connections without special protection, while maintaining their original electrical and mechanical properties. Their outstanding flame resistance also makes them suitable for installation in any industrial environment.

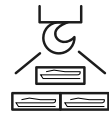
The main cables from our production for these applications are:



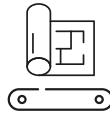
MACHINE TOOLS



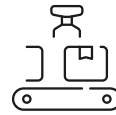
PRODUCTION PLANTS



WOOD PRODUCTION



PAPER PRODUCTION



PACKAGING PRODUCTION



GLASS PRODUCTION



PLASTIC PRODUCTION

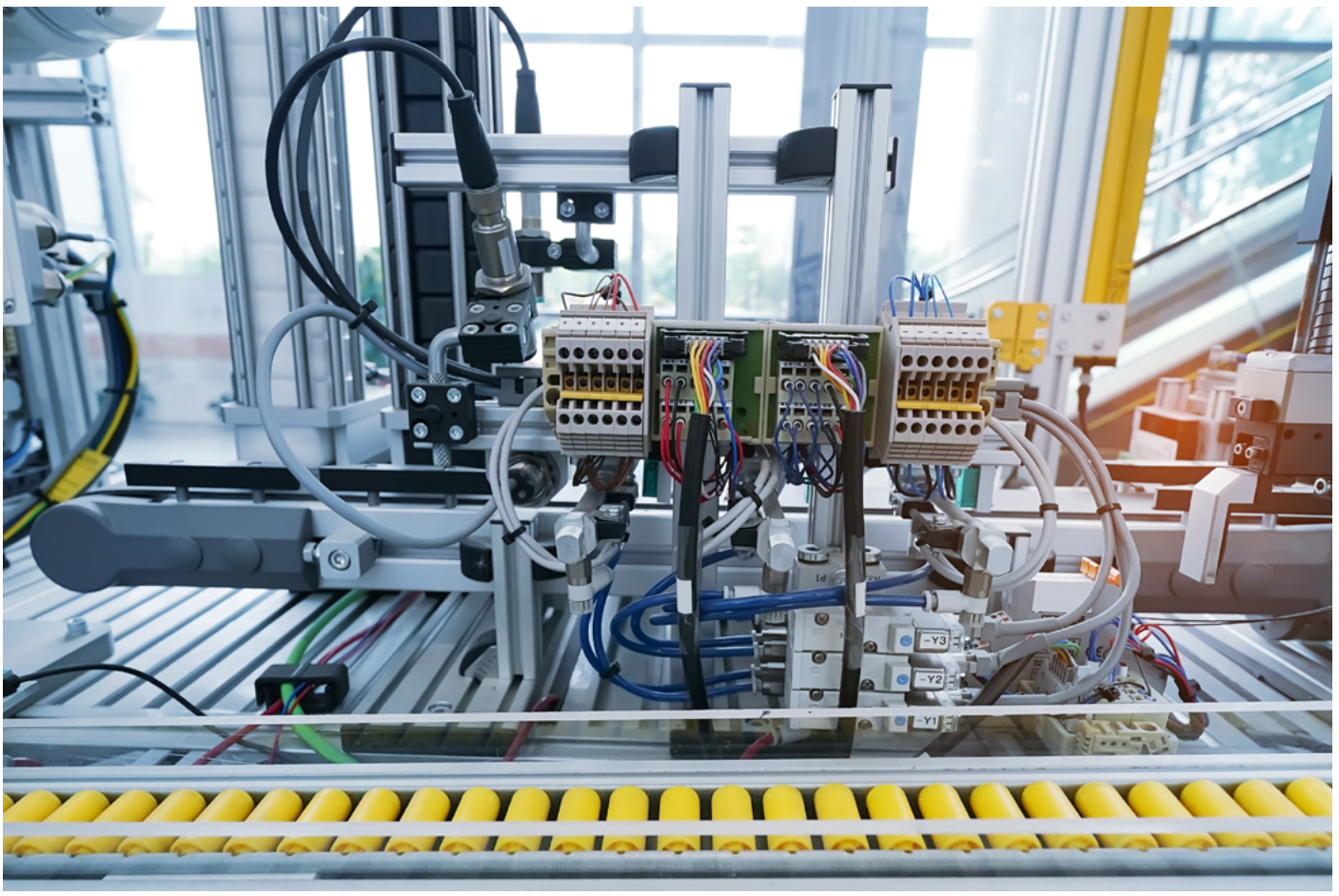
In the market, there are many manufacturers and numerous applications, which is why FTC produces a wide range of cables designed to meet every need.

Main product families:

- **FixTech_{SERVO}** SERVOMOTOR CABLES
- **FixTech_{ENCODER}** ENCODER / RESOLVER CABLES
- **FixTech_{SENSE}** SENSOR / ACTUATOR CABLES
- **FixTech_{PASSIVE}** PASSIVE DISTRIBUTOR CABLES

We also provide:

- **FIELDBUS CABLES**
- **POWER AND CONTROL CABLES**
- **VFD CABLES**
- **SPIRAL CABLES**



Servo systems are fundamental in many industrial applications thanks to their precision and flexibility.

A typical system includes a servomotor with feedback devices (such as Hall effect sensors, encoders, or resolvers) and a drive that powers and controls it. Feedback devices monitor rotor speed and position, allowing the system to correct potential errors and ensure precise movements.

Thanks to their ability to integrate with feedback devices, servomotors are widely used in sectors such as robotics, aerospace, diagnostics, and industrial automation.

Standard Structure

A servomotor cable connects the frequency converter to the motor, enabling speed control through voltage modulation. The standard structure includes conductors, shielding, and additional pairs for brakes or temperature sensors. It must ensure a high level of insulation and complete shielding, in compliance with the standards of the main drive manufacturers.

Componenti principali del cavo servomotore



Conductor:

Flexible conductor in bare or tinned copper.



Insulation: Made with dielectric materials such as PE, low-capacitance PP, or PVC to prevent short circuits and reduce voltage spikes.



Geometrie: Different types of stranding configurations.



Schermo: Shielding to contain electromagnetic interference (EMI) and protect control circuits.












Jacket: Protects the cables against chemicals, cuts, and abrasion, with materials such as PVC or PUR (the latter being ideal for oily environments and low temperatures).



Servomotor cables for fixed installation are designed for applications where high flexibility is not required, but signal stability and electrical protection are essential. These cables are ideal for fixed industrial installations, ensuring safe and reliable signal transmission while providing protection against electromagnetic interference (EMI).

Cable Construction



-  **Conductor:**
Flexible conductor in bare or tinned copper.
-  **Insulation:**
Up to 70 mm²: Low-capacitance polypropylene (PP), to reduce voltage peaks.
Above 70 mm²: PVC.
-  **Pair Shielding:**
Tinned copper braid with approximately 85% coverage, for effective protection against electromagnetic interference.
-  **Assembly:**
Conductors are grouped in a round formation with appropriate lay lengths.
-  **Overall Shield:**
Tinned copper braid with approximately 85% coverage, providing optimal shielding against electromagnetic disturbances.
-  **Jacket:**
PVC, compliant with standards. This jacket ensures durability and protection against wear.
-  **Jacket Color:**
● RAL 2003, compliant with *DESINA*[®] standard. Other colors available on request.
-  **Bending Radius:**
12 × cable outer diameter, suitable for static or minimally moving installations.
-  **Operating Temperature:**
From -40°C to +105°C, making these cables suitable for moderate temperature environments.

This configuration ensures that PVC-jacketed servomotor cables for fixed installation deliver long-lasting protection and reliable performance, making them ideal for stable industrial applications.

CABLES FOR SIEMENS® SYSTEMS	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G1,5]H2	6FX5008-1BB11	8,4	77
[4G2,5]H2	6FX5008-1BB21	10,8	125
[4G4]H2	6FX5008-1BB31	12,1	192
[4G6]H2	6FX5008-1BB41	14,5	282
[4G10]H2	6FX5008-1BB51	19,4	474
[4G16]H2	6FX5008-1BB61	24,2	750
[4G25]H2	6FX5008-1BB25	28,4	1138
[4G35]H2	6FX5008-1BB35	31,5	1625
[4G50]H2	6FX5008-1BB50	38	2176
[4G70]H2	6FX5008-1BB70	42,6	2955
[4G95]H2	6FX5008-1BB05	51,7	4135
[4G120]H2	6FX5008-1BB12	56	5119
[4G150]H2	6FX5008-1BB15	63	6321
[4G1,5+(2x1,5)]	6FX5008-1BA11	12	137
[4G2,5+(2x1,5)]	6FX5008-1BA21	13,4	177
[4G4+(2x1,5)]	6FX5008-1BA31	14,8	259
[4G6+(2x1,5)]	6FX5008-1BA41	16,4	372
[4G10+(2x1,5)]	6FX5008-1BA51	21	589
[4G16+(2x1,5)]	6FX5008-1BA61	24,1	801
[4G25+(2x1,5)]	6FX5008-1BA25	26,6	1254
[4G35+(2x1,5)]	6FX5008-1BA35	30,9	1693
[4G50+(2x1,5)]	6FX5008-1BA50	34	2268

*For UL versions, see the dedicated sections from page 47

CABLES FOR BOSCH® REXROTH® INDRAMAT®	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G0,75+(2x0,50)H2]H2	INK-0670	9,4	77
[4G1+2x(2x0,75)H2]H2	INK-0653	11,7	124
[4G1,5+2x(2x0,75)H2]H2	INK-0650	12,2	144
[4G2,5+2x(2x1)H2]H2	INK-0602	14,5	214
[4G4+(2x1)H2+(2x1,5)H2]H2	INK-0603	16,4	295
[4G6+(2x1)H2+(2x1,5)H2]H2	INK-0604	18,1	376
[4G10+(2x1)H2+(2x1,5)H2]H2	INK-0605	22,4	583
[4G16+2x(2x1,5)H2]H2	INK-0606	25,2	851
[4G25+2x(2x1,5)H2]H2	INK-0607	28,8	1288
[4G35+2x(2x1,5)]	INK-0667	30,9	1673
[4G50+2x(2x2,5)]	INK-0668	36,3	2310

*For UL versions, see the dedicated sections from page 47

CABLES FOR LENZE®	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G1+(2x0,50)]	--	9,8	86
[4G1,5+(2x0,50)]	--	11,3	110
[4G2,5+(2x0,50)]	--	12,1	150
[4G4+(2x1,0)]	--	14,6	267
[4G6+(2x1,0)]	--	16,4	362
[4G10+(2x1,0)]	--	20,1	572

*For UL versions, see the dedicated sections from page 47










CABLES TYPE	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G1]H2	--	7,6	56
[4G1,5+(2x1)H2]H2	--	11	122
[4G1,5+2x(2x1,5)H2]H2	--	12,4	205
[4G2,5+2x(2x0,75)H2]H2	--	13,6	211
[4G2,5+2x(2x1,5)H2]H2	--	13,2	249
[4G4+2x(2x1,5)H2]H2	--	17	384
[4G6+2x(2x1,5)H2]H2	--	18	495

*For UL versions, see the dedicated sections from page 47

Servomotor cables for fixed installation with PUR (Polyurethane) jacket are designed to ensure high durability and reliable performance in static industrial environments, where cable movements are limited or absent. Thanks to their resistance and protection against external factors, these cables are particularly suitable for applications requiring long service life and resistance to harsh conditions such as chemicals and abrasion.

Cable Construction



- 
Conductor:
Flexible conductor in bare or tinned copper.
- 
Insulation:
Up to 70 mm²: Low-capacitance polypropylene (PP), to improve electrical performance and reduce losses.
Above 95 mm²: PVC, providing additional protection and mechanical strength.
- 
Pair Shielding:
Tinned copper braid with approximately 85% coverage, reducing electromagnetic interference and ensuring stable signal transmission.
- 
Assembly:
Round formation with optimized lay lengths.
- 
Overall Shield:
Tinned copper braid with approximately 85% coverage, offering an additional level of EMI protection.
- 
Jacket:
Made of PUR, compliant with standards, ensuring excellent resistance to wear, chemicals, and abrasion.
- 
Jacket Color:
● RAL 2003, compliant with *DESINA*[®] standard.
- 
Bending Radius:
10 × cable outer diameter, suitable for static or minimally moving installations.
- 
Operating Temperature:
From -40°C to +90°C, making these cables ideal for demanding environments with variable temperatures.

Thanks to this robust construction, PUR-jacketed servomotor cables for fixed installation deliver long-lasting and reliable performance, making them the optimal solution for fixed plants that require resistance to complex and long-term environmental conditions.

CABLES FOR SIEMENS® SYSTEM	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G1,5]H2	6FX8008-1BB11	9,5	77
[4G2,5]H2	6FX8008-1BB21	11	125
[4G4]H2	6FX8008-1BB31	12,3	192
[4G6]H2	6FX8008-1BB41	14,9	282
[4G10]H2	6FX8008-1BB51	19,4	474
[4G16]H2	6FX8008-1BB61	24,2	750
[4G25]H2	6FX8008-1BB25	28,4	1138
[4G35]H2	6FX8008-1BB35	31,5	1625
[4G50]H2	6FX8008-1BB50	38	2176
[4G70]H2	6FX8008-1BB70	42,6	2955
[4G95]H2	6FX8008-1BB05	51,7	4135
[4G120]H2	6FX8008-1BB12	56	5119
[4G150]H2	6FX8008-1BB15	63	6321
[4G1,5*(2x1,5)]	6FX8008-1BA11	12	137
[4G2,5*(2x1,5)]	6FX8008-1BA21	13,4	177
[4G4*(2x1,5)]	6FX8008-1BA31	14,8	259
[4G6*(2x1,5)]	6FX8008-1BA41	16,4	372
[4G10*(2x1,5)]	6FX8008-1BA51	21,0	589
[4G16*(2x1,5)]	6FX8008-1BA61	24,1	801
[4G25*(2x1,5)]	6FX8008-1BA25	26,6	1254
[4G35*(2x1,5)]	6FX8008-1BA35	30,9	1693
[4G50*(2x1,5)]	6FX8008-1BA50	34,0	2268

*For UL versions, see the dedicated sections from page 47

CABLES FOR BOSCH® REXROTH® INDRAMAT®	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G0,75+(2x0,50)H2]H2	INK-0670	9,4	77
[4G1+2x(2x0,75)H2]H2	INK-0653	11,7	124
[4G1,5+2x(2x0,75)H2]H2	INK-0650	12,2	144
[4G2,5+2x(2x1)H2]H2	INK-0602	14,5	214
[4G4+(2x1)H2+(2x1,5)H2]H2	INK-0603	16,4	295
[4G6+(2x1)H2+(2x1,5)H2]H2	INK-0604	18,1	376
[4G10+(2x1)H2+(2x1,5)H2]H2	INK-0605	22,4	583
[4G16+2x(2x1,5)H2]H2	INK-0606	25,2	851
[4G25+2x(2x1,5)H2]H2	INK-0607	28,8	1288
[4G35+2x(2x1,5)]	INK-0667	30,9	1673
[4G50+2x(2x2,5)]	INK-0668	36,3	2310

*For UL versions, see the dedicated sections from page 47

CABLES FOR LENZE®	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G1+(2x0,50)]	--	10,0	86
[4G1,5+(2x0,50)]	--	11,5	110
[4G2,5+(2x0,50)]	--	13,2	150
[4G4+(2x1,0)]	--	14,6	267
[4G6+(2x1,0)]	--	16,8	362
[4G10+(2x1,0)]	--	20,1	572

*For UL versions, see the dedicated sections from page 47

CABLES TYPE	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
[4G1]H2	--	7,8	56
[4G1,5+(2x1)H2]H2	--	11,5	122
[4G1,5+2x(2x1,5)H2]H2	--	13	205
[4G2,5+2x(2x0,75)H2]H2	--	13,8	211
[4G2,5+2x(2x1,5)H2]H2	--	14,2	249
[4G4+2x(2x1,5)H2]H2	--	18	384
[4G6+2x(2x1,5)H2]H2	--	19	495

*For UL versions, see the dedicated sections from page 47

These are key components for the correct operation of complex industrial systems, used across a wide range of operating environments. They are designed to reliably transmit all the data necessary for the precise control of axes, actuators, and servomotors, thereby ensuring high efficiency in automation applications, machine tools, assembly lines, and production systems.

Accurate transmission of information, such as axis positioning and motion monitoring, is made possible by the high-quality construction of these cables. In particular, the shielded structure minimizes electromagnetic interference (EMI), allowing for stable, disturbance-free communication even in industrial environments characterized by high levels of electrical noise.

The outer polyurethane jacket gives these cables excellent resistance to abrasion, oils, and chemicals, making them ideal for use in harsh operating conditions and aggressive industrial environments. In addition, encoder cables supplied by manufacturers comply with the *DESINA*[®] standard and are certified according to UL/CSA regulations, in conformity with RoHS directives, thus ensuring high quality and safe use.

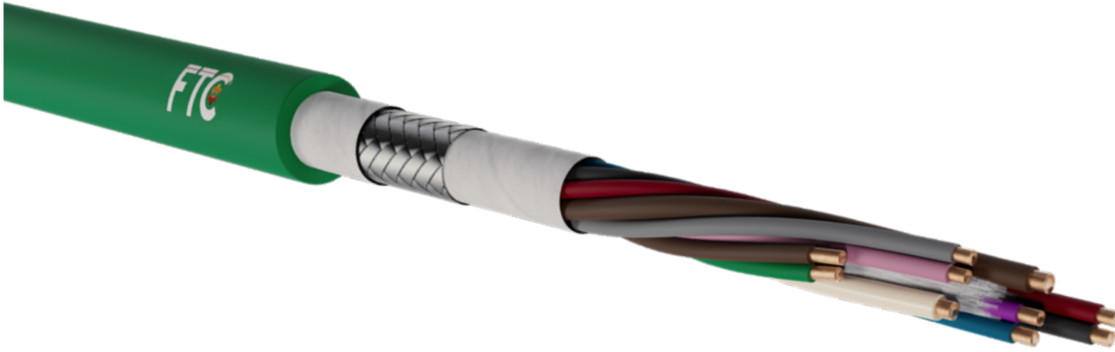
The signals generated by encoders, resolvers, and tachometers are essential to ensure precise and continuous control of servomotors, making them indispensable for the optimal operation of machine tools, industrial automation systems, and other high-precision applications. Thanks to these cables, it is possible to maintain high performance standards, ensuring proper system functionality, minimizing downtime, and maximizing productivity.



ENCODER, RESOLVER AND TACHOMETRIC CABLES PVC JACKET

Encoder cables with PVC (Polyvinyl Chloride) jacket are designed for industrial applications requiring a combination of flexibility and reliable protection.

Cable Construction



Conductor:

Flexible conductor in bare or tinned copper, designed to ensure excellent handling and long service life.



Insulation:

Each conductor is insulated with polypropylene, providing good mechanical and electrical resistance.



Pair Shielding (where required):

Depending on the system used, individual pairs can be shielded according to customer requirements



Assembly:

Concentric composite lay with optimized pitch to minimize electromagnetic interference and improve signal transmission.



Overall Shield:

The entire cable is shielded with a tinned copper braid with approximately 85% coverage, except for Lenze® systems, which require different configurations.



Jacket:

Outer sheath in PVC



Jacket Color:

- RAL 6018 (standard color).
- RAL 2003



Bending Radius:

Minimum bending radius of $6 \times$ cable outer diameter, maintaining operational efficiency without risk of damage



Operating Temperature:

From -40°C to $+105^{\circ}\text{C}$.

Thanks to this solid construction, PVC-jacketed encoder, resolver, and tachometric cables provide long-lasting, reliable performance, making them an optimal solution for fixed installations requiring resistance to complex and demanding industrial environments.

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
SIEMENS®	(2x2x0,2+1x2x0,38) (Drive CLiQ cat.5)	6FX 5008-2DC00	7	●**	38
	(2x2x0,15+1x2x0,38) (Drive CLiQ cat.5) posa mobile		7	●**	34
	12x0,22 dinamo tachimetrica	6FX5008-1BD81	7,3	●**	65
	2x2x0,18	6FX5008-1BD71	5,3	●**	24
	4x2x0,18	6FX5008-1BD61	6,7	●**	35
	3x(2x0,14)+1x2x0,50+1x4x0,14+1x4x0,25 Encoder	6FX5008-1BD51	9,6	●**	96
	3x(2x0,14)+2x0,50+4x0,14 Resolver	6FX5008-1BD41	9,2	●**	88
	3x(2x0,14)+2x(0,50)	6FX5008-1BD31	9,4	●**	76
	4x2x0,34+4x0,50 Encoder	6FX5008-1BD21	9,3	●**	83
8x2x0,18	6FX5008-1BD11	8,2	●**	55	
BOSCH REXROTH, INDRAMAT® SERIE INK	9x0,50	INK0208 ORANGE	8,8	●**	72
	9x0,50	INK0208 GREEN	8,8	●**	72
	4x2x0,25+2x1	INK0209 ORANGE	8,8	●**	68
	4x2x0,25+2x1	INK0209 GREEN	8,8	●**	68
	4x2x0,25+2x0,50	INK0448 ORANGE	8,5	●**	56
	4x2x0,25+2x0,50	INK0448 GREEN	8,5	●**	56
	4x0,14+4x2x0,14+4x1	INK0532 ORANGE	9,7	●**	81
	4x0,14+4x2x0,14+4x1	INK0532 GREEN	9,7	●**	81
BOSCH®	(6x0,14)+2x(2x0,14)+2x2x0,14+4x0,50 encoder		9,5	●**	86
LENZE®	4x(2x0,14)+(2x1) encoder	EYF0019	11,2	●**	68
	4x(2x0,14)+2x(1) encoder		11,8	●**	73
	4x(2x0,14)+2x(0,50) encoder		9,6	●**	52
	3x(2x0,14)+(3x0,14)	EYF0020	12,2	●**	89
	3x(2x0,14)+(4x0,14)+2x(2x0,50)	EYF0024	12,2	●**	89
	3x(2x0,14)+2x(0,50) resolver		8,8	●**	77
	3x(2x0,14)+2x(0,50) resolver		8,8	●**	77
	5x(2x0,14)+(4x0,14)+(2x0,50)		12,6	●**	117

(**) DESINA® Coding

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
FANUC®	1x2x0,18+5x0,50		7,6	●**	45
	2x2x0,18+5x0,50		7,8	●**	56
	3x2x0,18+6x0,50		8,7	●**	72
	3x2x0,18+6x1		8,9	●**	108
	5x2x0,18+6x0,50		8,7	●**	84
	4x2x0,22+2x0,50		7,6	●**	72
	6x2x0,25+2x0,50		10,6	●**	77
	10x2x0,22		9	●**	75
	10x2x28AWG		6	●**	36
HEIDENHAIN®	4x2x0,14+4x0,50	244957-01 BLACK	8,5	●	58
	4x2x0,14+4x0,50	244957-01 GREEN	8,5	●**	58
	3x(2x0,14)+2x(1x0,50)		*8,5 o 9,4 robust*	●**	76
	3x(2x0,14)+2x(1)		*9,1 o 9,9 robust*	●	87
	3x(2x0,14)+2x(1)		*9,1 o 9,9 robust*	●**	87
	4x2x0,14+(4x0,14)+4x0,50	354341-01	8,5	●**	74
	4x2x0,14+(4x0,14)+4x1		10,2	●**	99
	6x2x0,19	291639-01	8	●**	53
	10x0,14+2x0,50		7,2 o 8,0 costampabile	●**	49
10x0,14+4x0,50		7,8 o 8,9 costampabile	●**	65	
SCHNEIDER / ELAU®	(3x2x0,14+2x0,34)		6,8	●**	37
	(3x2x0,25+2x0,50)		7,7	●**	48
B&R® (Berneker&Rainer)	(5x2x0,14+2x0,50)		7,9	●**	52
	(5x2x0,14+2x0,50)		7,9	●	52
YASKAWA®	3x(2x0,34)+3G0,50 encoder		9	●**	64
	2x2x0,34 encoder		7	●**	33
	4x2x0,25+2x0,50 encoder		8,5	●	56
ROCKWELL®	5x2x0,34		8,9	●**	75,0
	3x2x0,15+1x2x0,38 Hyperface sistem cat.5		7,3 max	●**	41
	7x2x0,15+2x0,34+2x1,5 drive		10,9	●**	110
CONTROL TECHNIQUES UNIMOTOR®	6x2x0,34+(2x0,34)+1x2x1 encoder		10,9	●**	124
	2x2x0,14		5,7	●**	20,6

(*) DESINA® Coding

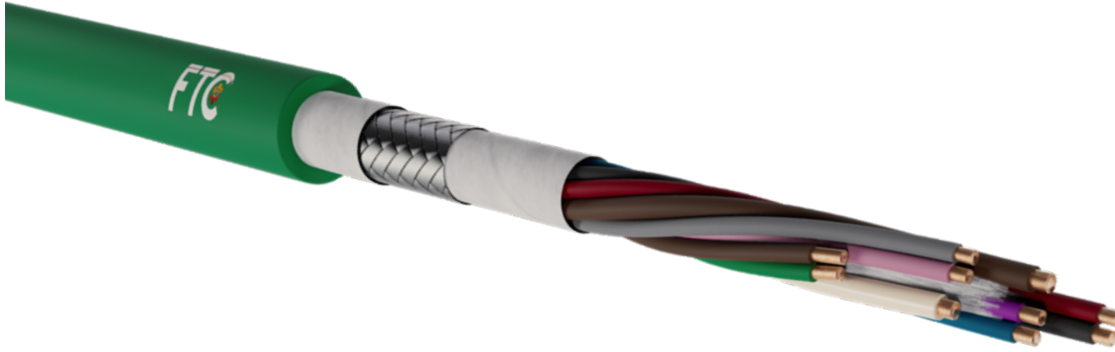
ENCODER, RESOLVER AND TACHOMETRIC CABLES WITH PVC JACKET

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
OMRON®	2x2x0,25+2x0,50		6,6	●**	34
	2x2x0,22+2x1		7,6	●**	54
	2x0,50+4x2x0,25		8,6	●	61
	2x0,50+4x2x0,25		8,6	●**	61
BAUMULLER®	5x2x0,14+2x0,25		8	●**	61
DENAHER®	7x2x0,14+1x2x0,5		8	●**	67
	4x2x0,25		7,3	●**	40
	4x2x0,25		7,3	●**	40
OTHER	3x2x0,34 encoder		7,2	●**	42
	6x2x0,14+2x0,50+(2x0,14)		9	●**	67
	6x2x0,14+2x0,50+1x0,14		9,6	●**	60
	4x(2x0,34) resolver	(*) DESINA® Coding	11,2	●**	102

ENCODER, RESOLVER AND TACHOMETRIC CABLES WITH PUR JACKET

These cables are designed to ensure high flexibility and resistance in industrial environments.

Cable Construction



Conductor:

Flexible conductor in bare or tinned copper, ensuring excellent conductivity and strong resistance to mechanical stress. This flexibility is essential for guaranteeing long service life, especially in complex installations.



Insulation:

Each conductor is insulated with polypropylene, a material that provides both good mechanical and electrical resistance.



Pair Shielding (where required):

Depending on the system, pairs can be shielded according to customer requirements.



Assembly:

Concentric composite lay with optimized pitch, minimizing electromagnetic interference and improving signal transmission.



Jacket:

Outer sheath in PUR (Polyurethane).



Jacket Color:

- RAL 6018, (standard color).
- RAL 2003



Bending Radius:

Minimum bending radius of $6 \times$ cable outer diameter, ensuring mechanical integrity and stable performance.



Operating Temperature:

From -40°C to $+90^{\circ}\text{C}$.

Thanks to this configuration, PUR-jacketed encoder, resolver, and tachometric cables are particularly suitable for industrial applications requiring flexibility, chemical resistance, and electromagnetic protection.

SYSTEM	FORMATION (N° * MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
SIEMENS®	(2x2x0,2+1x2x0,38) (Drive CLiQ cat.5)	6FX 8008-2DC00	7	●	38
	(2x2x0,15+1x2x0,38) (Drive CLiQ cat.5) posa mobile		7	●	34
	12x0,22 dinamo tachimetrica	6FX8008-1BD81	7,3	●	65
	2x2x0,18	6FX8008-1BD71	5,3	●	24
	4x2x0,18	6FX8008-1BD61	6,7	●	35
	8x2x0,18	6FX8008-1BD11	8,2	●	55
	3x(2x0,14)+1x2x0,50+1x4x0,14+1x4x0,25 Encoder	6FX8008-1BD51	9,6	●	96
	3x(2x0,14)+2x0,50+4x0,14 Resolver	6FX8008-1BD41	9,2	●	88
	3x(2x0,14)+2x(0,50)	6FX8008-1BD31	9,4	●	76
	4x2x0,34+4x0,50 Encoder	6FX8008-1BD21	9,3	●	83
BOSCH REXROTH, INDRAMAT® SERIE INK	9x0,50	INK0208 ORANGE	8,8	●	72
	9x0,50	INK0208 GREEN	8,8	●	72
	4x2x0,25+2x1	INK0209 ORANGE	8,8	●	68
	4x2x0,25+2x1	INK0209 GREEN	8,8	●	68
	4x2x0,25+2x0,50	INK0448 ORANGE	8,5	●	56
	4x2x0,25+2x0,50	INK0448 GREEN	8,5	●	56
	4x0,14+4x2x0,14+4x1	INK0532 ORANGE	9,7	●	81
	4x0,14+4x2x0,14+4x1	INK0532 GREEN	9,7	●	81
BOSCH®	(6x0,14)+2x(2x0,14)+2x2x0,14+4x0,50 encoder		9,5	●	86
LENZE®	4x(2x0,14)+(2x1) encoder	EYF0019	11,2	●	68
	4x(2x0,14)+2x(1) encoder		11,8	●	73
	4x(2x0,14)+2x(0,50) encoder		9,7	●	54
	3x(2x0,14)+(3x0,14)	EYF0020	9,6	●	52
	3x(2x0,14)+(4x0,14)+2x(2x0,50)	EYF0024	12,2	●	89
	3x(2x0,14)+2x(0,50) resolver		8,8	●	77
	3x(2x0,14)+2x(0,50) resolver		8,8	●	77
	5x(2x0,14)+(4x0,14)+(2x0,50)		12,6	●	117

(*) DESINA® Coding

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
FANUC®	1x2x0,18+5x0,50		7,6	●	45
	2x2x0,18+5x0,50		7,8	●	56
	3x2x0,18+6x0,50		8,7	●	72
	3x2x0,18+6x1		8,9	●	108
	5x2x0,18+6x0,50		8,7	●	84
	4x2x0,22+2x0,50		7,6	●	72
	6x2x0,25+2x0,50		10,6	●	77
	10x2x0,22		9	●	75
	10x2x28AWG		6	●	36
HEIDENHAIN®	4x2x0,14+4x0,50	244957-01 BLACK	8,5	●	58
	4x2x0,14+4x0,50	244957-01 GREEN	8,5	●	58
	3x(2x0,14)+2x(1x0,50)		*8,5 o9,4 robust*	●	76
	3x(2x0,14)+2x(1)		*9,1 o9,9 robust*	●	87
	3x(2x0,14)+2x(1)		*9,1 o9,9 robust*	●	87
	4x2x0,14+(4x0,14)+4x0,50	354341-01	8,5	●	74
	4x2x0,14+(4x0,14)+4x1		10,2	●	99
	6x2x0,19	291639-01	8	●	53
	10x0,14+2x0,50		7,2 o 8,0 costampabile	●	49
10x0,14+4x0,50		7,8 o 8,9 costampabile	●	65	
SCHNEIDER / ELAU®	(3x2x0,14+2x0,34)		6,8	●	37
	(3x2x0,25+2x0,50)		7,7	●	48
B&R® (Berneker&Rainer)	(5x2x0,14+2x0,50)		7,9	●	52
	(5x2x0,14+2x0,50)		7,9	●	52
YASKAWA®	3x(2x0,34)+3G0,50 encoder		9	●	64
	2x2x0,34 encoder		7	●	33
	4x2x0,25+2x0,50 encoder		8,5	●	56
ROCKWELL®	5x2x0,34		8,9	●	75,0
	3x2x0,15+1x2x0,38 Hyperface sistem cat.5		7,3 max	●	41
	7x2x0,15+2x0,34+2x1,5 drive		10,9	●	110
CONTROL TECHNIQUES UNIMOTOR®	6x2x0,34+(2x0,34)+1x2x1 encoder		10,9	●	124
	2x2x0,14		5,7	●	20,6

(*) DESINA® Coding

ENCODER, RESOLVER AND TACHOMETRIC CABLES WITH PUR JACKET

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
OMRON®	2x2x0,25+2x0,50		6,6	●**	34
	2x2x0,22+2x1		7,6	●**	54
	2x0,50+4x2x0,25		8,6	●	61
	2x0,50+4x2x0,25		8,6	●**	61
BAUMULLER®	5x2x0,14+2x0,25		8	●**	61
DENAHER®	7x2x0,14+1x2x0,5		8	●**	67
	4x2x0,25		7,3	●**	40
	4x2x0,25		7,3	●**	40
ALTRI	3x2x0,34 encoder		7,2	●**	42
	6x2x0,14+2x0,50+(2x0,14)		9	●**	67
	6x2x0,14+2x0,50+1x0,14		9,6	●**	60
	4x(2x0,34) resolver		11,2	●**	102

(*) DESINA® Coding



SENSOR CABLES

Sensor cables play a crucial role in ensuring maximum precision and reliability in measurement, control, and automation systems. Designed to connect sensitive devices and instruments, these cables deliver excellent performance even in critical environments, guaranteeing accurate signal transmission.

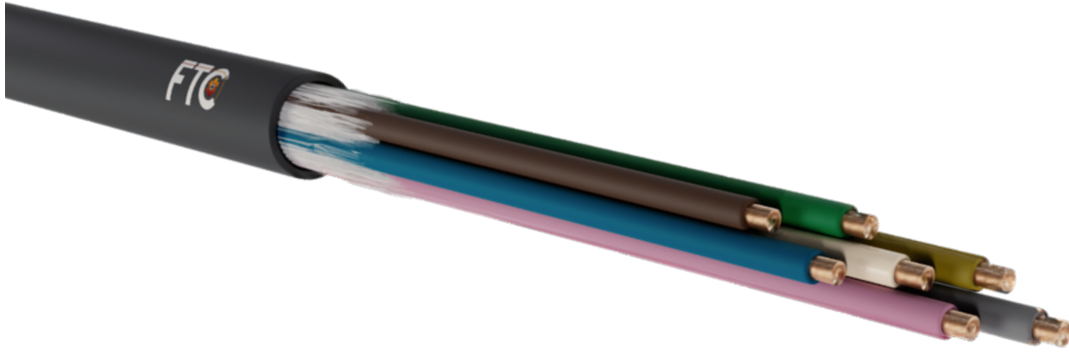
The range offered by FTC has been developed to meet diverse application requirements, providing solutions that are resistant to electromagnetic interference, flexible, and suitable for extreme conditions such as high temperatures or harsh industrial environments.


Quality, safety, and long-term durability are the features that make FTC sensor cables a reliable choice across all technological sectors.




These cables are designed to ensure high flexibility and resistance in industrial environments.













Cable Construction




 **Conductor:**
 Flexible bare or tinned copper conductor ensuring excellent conductivity and high resistance to mechanical stress. This flexibility is fundamental for guaranteeing long service life, especially in complex installations.

 **Insulation:**
 PVC o Polipropilene

 **Insulation Colors:**


				FORMATION 3x0,25/0,34 mm ² .
				FORMATION 4x0,25/0,34 mm ² .
				FORMATION 5x0,25/0,34 mm ² .

This color coding ensures easy conductor identification during installation and maintenance.

 **Jacket:**
 PVC or PUR (Polyurethane).

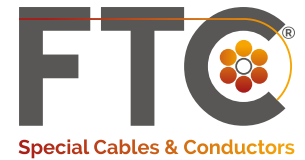
 **Jacket Color:**

-  RAL 9005
-  RAL 1021

 **Bending Radius:**
 Up to 6 × cable outer diameter in fixed installation, allowing great versatility during installation and excellent adaptability in confined spaces.

FixTech_{SENSE}

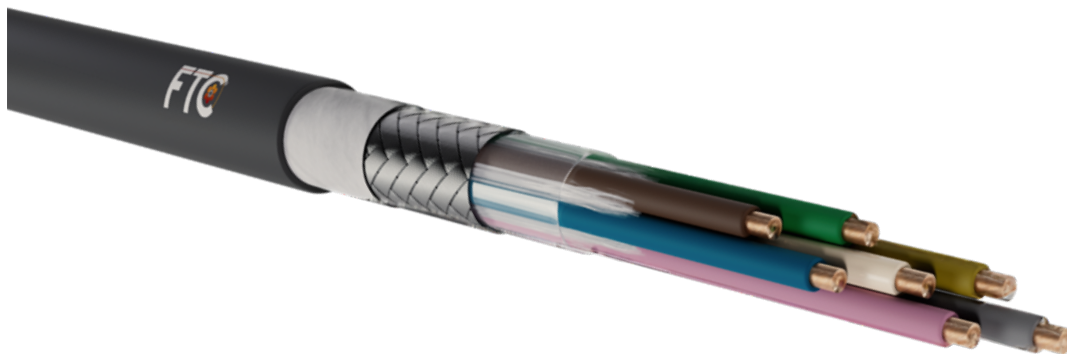
SENSOR CABLES UNSHIELDED





FORMATION (N° x MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
3x0,25	3,8	●	PVC/PVC	7,9
4x0,25	4,2	●	PVC/PVC	10,5
5x0,25	4,9	●	PVC/PVC	13,1
3x0,34	4,1	●	PVC/PVC	10,3
4x0,34	4,4	●	PVC/PVC	13,7
5x0,34	4,8	●	PVC/PVC	17,2
4x0,34	5,2	●*	PVC/PVC	13,7
3x0,25	4,1	●	PP/PVC	7,9
4x0,25	4,6	●	PP/PVC	10,5
5x0,25	5	●	PP/PVC	13,1
3x0,34	4,4	●	PP/PVC	10,3
4x0,34	4,8	●	PP/PVC	13,7
5x0,34	5,1	●	PP/PVC	17,2
4x0,34	5,2	●*	PP/PVC	13,7
3x0,25	4,1	●	PP/PUR	7,5
4x0,25	4,6	●	PP/PUR	10
5x0,25	5	●	PP/PUR	12,6
3x0,34	4,4	●	PP/PUR	10,2
4x0,34	4,8	●	PP/PUR	13,7
5x0,34	5,1	●	PP/PUR	17,1
4x0,34	5,2	●*	PP/PUR	13,7


(*) On request, also available in grey RAL 7035 and RAL 7001 - (*) **DESINA**® Coding













Cable Construction




 **Conductor:**
Flexible bare or tinned copper conductor ensuring excellent conductivity and high resistance to mechanical stress. This flexibility is essential to guarantee long service life, especially in complex installations.

 **Insulation:**
PVC or Polypropylene.

 **Insulation Colors:**

				FORMATION 3x0,25/0,34 mm ² .
				FORMATION 4x0,25/0,34 mm ² .
				FORMATION 5x0,25/0,34 mm ² .

This color coding ensures easy conductor identification during installation and maintenance

 **Shielding:**
Tinned copper braid with approximately 85% coverage, providing effective protection against electromagnetic interference (EMI).

 **Jacket:**
PVC o Poliuretano

 **Jacket Color:**
 RAL 9005

 **Bending Radius:**
Up to 6 × cable outer diameter, ensuring flexibility and easy installation in confined spaces.

FORMATION (N° x MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
3x0,25	4,2	●	PVC/PVC	16,8
4x0,25	4,6	●	PVC/PVC	22,1
5x0,25	5,2	●	PVC/PVC	24,9
3x0,34	4,5	●	PVC/PVC	21,9
4x0,34	5	●	PVC/PVC	25,4
5x0,34	5,4	●	PVC/PVC	29,2
3x0,25	4,8	●	PP/PUR	16,5
4x0,25	5,3	●	PP/PUR	19,2
5x0,25	5,8	●	PP/PUR	24,2
3x0,34	5,2	●	PP/PUR	19,3
4x0,34	5,6	●	PP/PUR	25,4
5x0,34	5,9	●	PP/PUR	29
3x0,25	4,1	●	PP/PUR	16,5
4x0,25	4,6	●	PP/PUR	19,2
5x0,25	5	●	PP/PUR	24,2
3x0,34	4,4	●	PP/PUR	19,3
4x0,34	4,8	●	PP/PUR	25,4
5x0,34	5,1	●	PP/PUR	29

(*) On request, also available in grey RAL 7035 and RAL 7001 - (**) *DESINA*® Coding- Custom marking and outer diameter available on request

Custom marking and outer diameter available on request

FORMATION (N° x MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
2x0,75+4x0,34	7,5	● ●	PVC/PVC	30
2x0,75+6x0,34	7,9	● ●	PVC/PVC	36
2x0,75+10x0,34	8,8	● ●	PVC/PVC	50
2x0,75+12x0,34	9,5	● ●	PVC/PVC	57
2x0,75+20x0,34	11,3	● ●	PVC/PVC	87
3G0,75+12x0,34	8,5	● ●	PVC/PVC	64,2
3G0,75+16x0,34	10,5	● ●	PVC/PVC	78,2
3G0,75+4x0,34	7,5	● ●	PVC/PVC	37
3G0,75+8x0,34	8,5	● ●	PVC/PVC	51
3G1+12x0,50	11	● ●	PVC/PVC	91,5
3G1+16x0,50	11,9	● ●	PVC/PVC	109,1
3G1+8x0,50	9,6	● ●	PVC/PVC	71,5
12x0,14	6	● ●	PVC/PVC	20
8x0,25	6	● ●	PVC/PVC	21
12x0,25	6,5	● ●	PVC/PVC	32
8x0,34	6,3	● ●	PVC/PVC	28
18x0,75	11,5	● ●	PVC/PVC	148
2x0,75+4x0,34	7,5	● ●	PVC/PUR	30
2x0,75+6x0,34	7,9	● ●	PVC/PUR	36
2x0,75+10x0,34	8,8	● ●	PVC/PUR	50
2x0,75+12x0,34	9,5	● ●	PVC/PUR	57
2x0,75+20x0,34	11,3	● ●	PVC/PUR	87
3G0,75+12x0,34	8,5	● ●	PVC/PUR	64,2
3G0,75+16x0,34	10,5	● ●	PVC/PUR	78,2
3G0,75+4x0,34	7,5	● ●	PVC/PUR	37
3G0,75+8x0,34	8,5	● ●	PVC/PUR	51
3G1+12x0,50	10,7	● ●	PVC/PUR	91,5
3G1+16x0,50	11,9	● ●	PVC/PUR	109,1
3G1+8x0,50	9,6	● ●	PVC/PUR	71,5
12x0,14	6	● ●	PVC/PUR	20
8x0,25	6	● ●	PVC/PUR	21
12x0,25	6,5	● ●	PVC/PUR	32
8x0,34	6,3	● ●	PVC/PUR	28
18x0,75	11,5	● ●	PVC/PUR	148

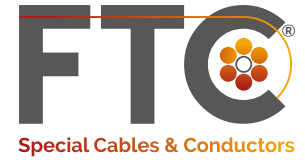
(*) DESINA® Coding

FORMATION (N° * MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
2x0,75+4x0,34	7,5	● ●	PP/PVC	30
2x0,75+6x0,34	8,5	● ●	PP/PVC	36
2x0,75+10x0,34	8,5	● ●	PP/PVC	50
2x0,75+12x0,34	9,5	● ●	PP/PVC	57
2x0,75+20x0,34	11,3	● ●	PP/PVC	87
3G0,75+12x0,34	8,5	● ●	PP/PVC	64,2
3G0,75+16x0,34	10	● ●	PP/PVC	78,2
3G0,75+4x0,34	7,5	● ●	PP/PVC	37
3G0,75+8x0,34	8,5	● ●	PP/PVC	51
3G1+12x0,50	10,7	● ●	PP/PVC	91,5
3G1+16x0,50	11,5	● ●	PP/PVC	109,1
3G1+8x0,50	9,6	● ●	PP/PVC	71,5
12x0,14	5,7	● ●	PP/PVC	20
8x0,25	6	● ●	PP/PVC	21
12x0,25	6,5	● ●	PP/PVC	32
8x0,34	6,3	● ●	PP/PVC	28
18x0,75	11,5	● ●	PP/PVC	148
2x0,75+4x0,34	7,5	● ●	PP/PUR	30
2x0,75+6x0,34	8,5	● ●	PP/PUR	36
2x0,75+10x0,34	8,5	● ●	PP/PUR	50
2x0,75+12x0,34	9	● ●	PP/PUR	57
2x0,75+20x0,34	11,3	● ●	PP/PUR	87
3G0,75+12x0,34	8,2	● ●	PP/PUR	64,2
3G0,75+16x0,34	10	● ●	PP/PUR	78,2
3G0,75+4x0,34	7,5	● ●	PP/PUR	37
3G0,75+8x0,34	8,2	● ●	PP/PUR	51
3G1+12x0,50	10,7	● ●	PP/PUR	91,5
3G1+16x0,50	11,5	● ●	PP/PUR	109,1
3G1+8x0,50	9,6	● ●	PP/PUR	71,5
12x0,14	5,7	● ●	PP/PUR	20
8x0,25	6	● ●	PP/PUR	21
12x0,25	6,5	● ●	PP/PUR	32
8x0,34	6,3	● ●	PP/PUR	28
18x0,75	11,5	● ●	PP/PUR	148

(*) DESINA® Coding

Syncro FlexTech Cable

CABLES FOR FLEXIBLE INSTALLATION



Cables for flexible installation represent an essential component in numerous industrial and commercial applications that require flexibility, resistance, and reliability. Unlike fixed installation cables, these are specifically designed to withstand continuous movements, torsion, and bending, while ensuring high performance and operational safety.

They are used in dynamic contexts such as drag chains, robotics, machine tools, and automated systems, where their ability to endure frequent mechanical stress is crucial to avoid service interruptions and reduce maintenance costs.

In this section, we present the main technical features of flexible installation cables, with a focus on materials, safety certifications, and the different types of applications, to provide a comprehensive guide for selecting the most suitable product for your needs.

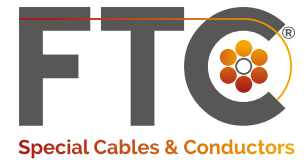
Tab.1-1 Dynamic Performance

FTC FAMILY	INSTALLATION	TRAVEL m	ACCELERATION m/s ²	SPEED m/s		TEMPERATURE °C		BENDING RADIUS * CABLE OUTER DIAMETER NUMBER OF FLEXING / TRAVEL CYCLES RELATIVE TO CHAIN LENGTH					
				SELF-SUPPORTING CHAIN	SLIDING CHAIN			2 mil		5 mil		10 mil	
								< 10 m	> 10 m	< 10 m	> 10 m	< 10 m	> 10 m
FlexTech *SERVO PVC	Horizontal	100	20	10	5	-20	≤ -5	10	12,5	11	13,5	15	19,5
						> -5	≤ 50	7,5	9,5	8,5	10,5	12	15
							≤ 90	9	11,5	10	12,5	14,5	18
FlexTech *SERVO PUR	Horizontal	100	50	10	5	-40	≤ -5			10	13	13,5	17,5
						> -5	≤ 50			7,5	10	9,5	12,5
							≤ 90			9,5	12,5	13	17
FlexTech *ENCODER,	Horizontal	100	50	10	5	-40	≤ -5			10	13	13,5	17,5
						> -5	≤ 50			7,5	10	9,5	12,5
							≤ 80			9,5	12,5	13	17
FlexTech *SENSOR PVC/PVC PP/PVC SHIELDED non schermati	Horizontal	100	20	10	5	-20	≤ -5			15	16	17	22
						> -5	≤ 50			10	12	16	18
							≤ 80			15	15	17	20
FlexTech *SENSOR PP/PUR SHIELDED non schermati	Horizontal	100	50	10	5	-40	≤ -5			12	13,5	15	19,5
						> -5	≤ 50			10	12	14	16
							≤ 80			9	11	14,5	18
FlexTech *PASSIVE PVC/PVC e PP/PVC	Horizontal	100	20	10	5	-20	≤ -5			12	15	15,5	19,5
						> -5	≤ 50			10	12	12	15
							≤ 80			12	15	16	19
FlexTech *PASSIVE PVC/PUR	Horizontal	100	20	10	5	-20	≤ -5			11	14	14,5	18,5
						> -5	≤ 50			9	12	11	14
							≤ 80			11	14	15	18
FlexTech *PASSIVE PP/PUR	Horizontal	100	50	10	5	-40	≤ -5			10	13	13,5	17,5
						> -5	≤ 50			8	11	10	13
							≤ 80			10	13	14	17

The values, factors, and flexing cycles mentioned above are reference values and serve as a non-binding estimate of the expected service life. The travel distance, acceleration, and speed are maximum values that cannot be applied simultaneously in the same application. We reserve the right to make corrections and modifications to the aforementioned values.

FlexTech_{SERVO}

SERVOMOTOR CABLES FOR DRAG CHAINS

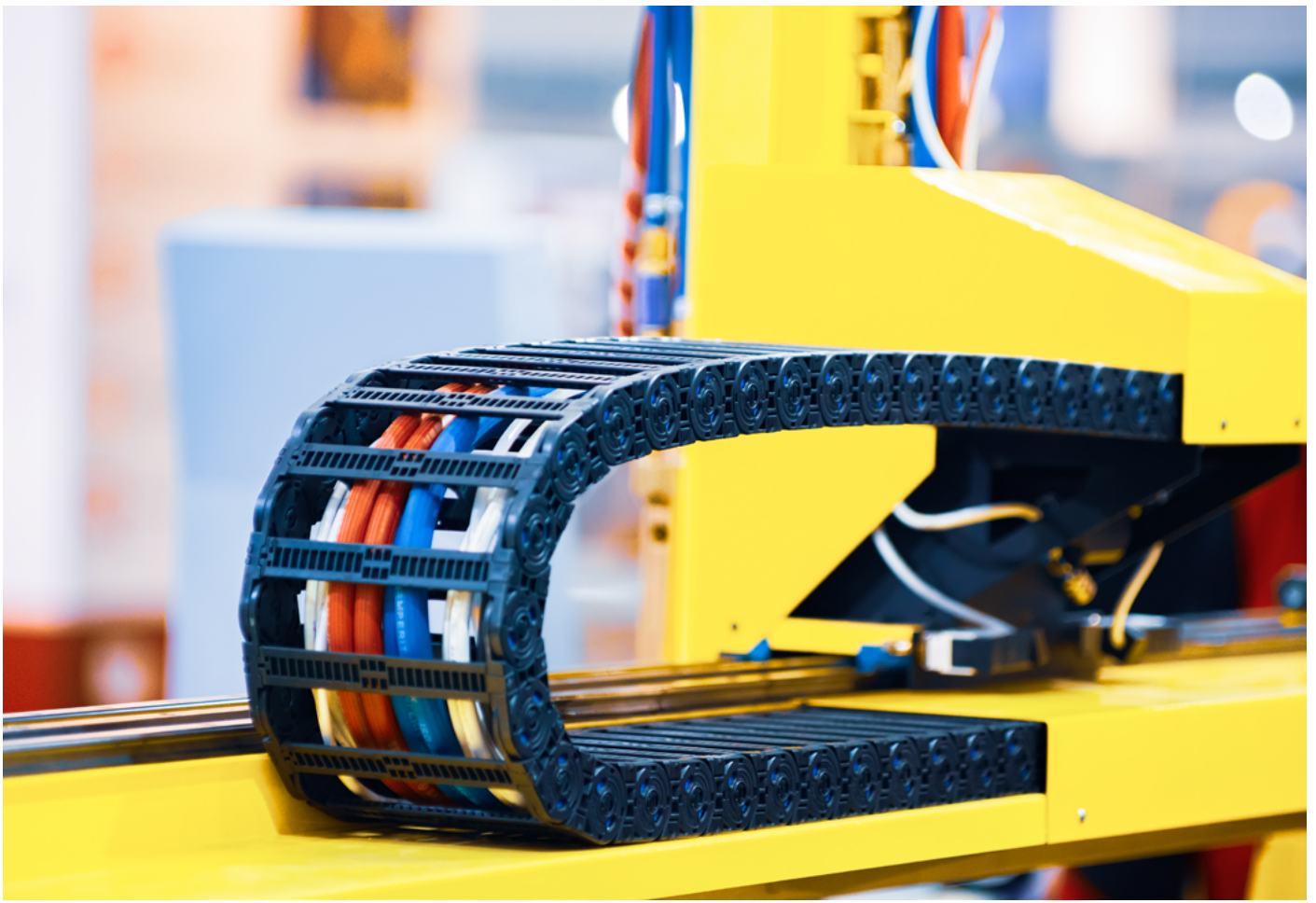


Servomotor cables designed for drag chain applications in flexible installations are a crucial element to ensure efficiency, reliability, and durability in modern automated systems. Engineered to meet the requirements of continuous motion and high performance, these cables combine flexibility, robustness, and compatibility with the most advanced control systems.

Within our catalog, you will find a selection of servomotor cables specifically developed to operate in complex industrial environments, where high mechanical strength, protection against electromagnetic interference (EMC), and the ability to withstand millions of bending cycles without compromising integrity are required.

Thanks to innovative, high-quality materials and internationally recognized certifications, our flexible installation cables guarantee top performance in both power transmission and control data transfer, providing reliable solutions to optimize productivity and reduce maintenance costs.

We are pleased to support you in selecting the most suitable cable for your needs, offering products capable of meeting the highest standards of the industrial market.



Servomotor cables for flexible installation are designed for dynamic applications, such as in drag chains, where they are subjected to frequent movements. Thanks to their robust and flexible construction, they provide resistance and reliability even under continuous mechanical stress.

Cable Construction



Conductor:

Flexible bare or tinned copper conductor, offering high conductivity and flexibility.



Insulation:

Up to 70 mm²: Low-capacitance polypropylene, to reduce voltage peaks.
Above 70 mm²: PVC.



Pair Shielding:

Tinned copper braid with approximately 85% coverage, providing effective shielding against electromagnetic interference (EMI).



Assembly:

Round formation with optimized lay lengths to ensure flexibility and strength.



Overall Shield:

Tinned copper braid with approximately 85% coverage.



Jacket:

PVC.



Jacket Color:

● RAL 2003**, compliant with *DESINA*[®] standard. Other colors available on request.



Operating Temperature:

-15°C to +90°C.

Dynamic Performance: See Table 1-1.

This construction ensures superior durability and excellent protection against electromagnetic interference, making these cables ideal for servomotors and automated industrial applications requiring high reliability.

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)	
SIEMENS®	[4G1,5]H2	6FX5008-1BB11	8,4	77	
	[4G2,5]H2	6FX5008-1BB21	10,8	125	
	[4G4]H2	6FX5008-1BB31	12,1	192	
	[4G6]H2	6FX5008-1BB41	14,5	282	
	[4G10]H2	6FX5008-1BB51	19,4	474	
	[4G16]H2	6FX5008-1BB61	24,2	750	
	[4G25]H2	6FX5008-1BB25	28,4	1138	
	[4G35]H2	6FX5008-1BB35	31,5	1625	
	[4G50]H2	6FX5008-1BB50	38	2176	
	[4G70]H2	6FX5008-1BB70	42,6	2955	
	[4G95]H2	6FX5008-1BB05	51,7	4135	
	[4G120]H2	6FX5008-1BB12	56	5119	
	[4G150]H2	6FX5008-1BB15	63	6321	
	[4G1,5+(2x1,5)]	6FX5008-1BA11	12	137	
	[4G2,5+(2x1,5)]	6FX5008-1BA21	13,4	177	
	[4G4+(2x1,5)]	6FX5008-1BA31	14,8	259	
	[4G6+(2x1,5)]	6FX5008-1BA41	16,4	372	
	[4G10+(2x1,5)]	6FX5008-1BA51	21	589	
	[4G16+(2x1,5)]	6FX5008-1BA61	24,1	801	
	[4G25+(2x1,5)]	6FX5008-1BA25	26,6	1254	
	[4G35+(2x1,5)]	6FX5008-1BA35	30,9	1693	
	[4G50+(2x1,5)]	6FX5008-1BA50	34	2268	
	BOSCH REXROTH, INDRAMAT® SERIE INK	[4G0,75+(2x0,50)H2]H2	INK-0670	9,4	77
		[4G1+2x(2x0,75)H2]H2	INK-0653	11,7	124
[4G1,5+2x(2x0,75)H2]H2		INK-0650	12,2	144	
[4G2,5+2x(2x1)H2]H2		INK-0602	14,5	214	
[4G4+(2x1)H2+(2x1,5)H2]H2		INK-0603	16,4	295	
[4G6+(2x1)H2+(2x1,5)H2]H2		INK-0604	18,1	376	
BOSCH REXROTH, INDRAMAT® SERIE INK	[4G10+(2x1)H2+(2x1,5)H2]H2	INK-0605	22,4	583	
	[4G16+2x(2x1,5)H2]H2	INK-0606	25,2	851	
	[4G25+2x(2x1,5)H2]H2	INK-0607	28,8	1288	
	[4G35+2x(2x1,5)]	INK-0667	30,9	1673	
	[4G50+2x(2x2,5)]	INK-0668	36,3	2310	

SYSTEM	FORMATION (N° * MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
LENZE®	[4G1+(2x0,50)]	--	9,8	86
	[4G1,5+(2x0,50)]	--	11,3	110
	[4G2,5+(2x0,50)]	--	12,1	150
	[4G4+(2x1,0)]	--	14,6	267
	[4G6+(2x1,0)]	--	16,4	362
	[4G10+(2x1,0)]	--	20,1	572
	[4G16+(2x1,0)]	--	23,6	791
SERVO/MOTOR CABLES	[4G1]H2	--	7,6	56
	[4G1,5+(2x1)H2]H2	--	11	122
	[4G1,5+2x(2x1,5)H2]H2	--	12,4	205
	[4G2,5+2x(2x0,75)H2]H2	--	13,6	211
	[4G2,5+2x(2x1,5)H2]H2	--	13,2	249
	[4G4+2x(2x1,5)H2]H2	--	17	384
	[4G6+2x(2x1,5)H2]H2	--	18	495

Servomotor low-capacitance cables for flexible installation are specifically designed for drag chain applications, where high flexibility and reliability are required under dynamic conditions.

Thanks to their construction, these cables guarantee excellent electrical performance and mechanical strength, even in complex industrial environments subject to heavy stress.

Cable Construction



Conductor:

Flexible bare or tinned copper conductor, offering high conductivity and flexibility.



Insulation:

Up to 70 mm²: Low-capacitance polypropylene, to reduce voltage peaks.
Above 70 mm²: PVC.



Pair Shielding:

Tinned copper braid with approximately 85% coverage, providing optimal shielding against generated electromagnetic disturbances.



Assembly:

Round formation with optimized lay lengths to ensure flexibility and strength.



Overall Shield:

Tinned copper braid with approximately 85% coverage.



Jacket:

Made of PUR (Polyurethane), compliant with standards. This jacket ensures excellent resistance to chemicals, abrasion, and wear.



Jacket Color:

● RAL 2003**, compliant with *DESINA*[®] standard.



Operating Temperature:

From -40°C to +90°C with polypropylene insulation
From -15°C to +90°C with PVC insulation

This advanced configuration makes PUR-jacketed servomotor cables an excellent choice for high-performance dynamic applications, where flexibility, resistance, and reliability are essential for the correct functioning of industrial systems.

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
SIEMENS®	[4G1,5]H2	6FX8008-1BB11	9,5	77
	[4G2,5]H2	6FX8008-1BB21	11	125
	[4G4]H2	6FX8008-1BB31	12,3	192
	[4G6]H2	6FX8008-1BB41	14,9	282
	[4G10]H2	6FX8008-1BB51	19,4	474
	[4G16]H2	6FX8008-1BB61	24,2	750
	[4G25]H2	6FX8008-1BB25	28,4	1138
	[4G35]H2	6FX8008-1BB35	31,5	1625
	[4G50]H2	6FX8008-1BB50	38	2176
	[4G70]H2	6FX8008-1BB70	42,6	2955
	[4G95]H2	6FX8008-1BB05	51,7	4135
	[4G120]H2	6FX8008-1BB12	56	5119
	[4G150]H2	6FX8008-1BB15	63	6321
	[4G1,5+(2x1,5)]	6FX8008-1BA11	12	137
	[4G2,5+(2x1,5)]	6FX8008-1BA21	13,4	177
	[4G4+(2x1,5)]	6FX8008-1BA31	14,8	259
	[4G6+(2x1,5)]	6FX8008-1BA41	16,4	372
	[4G10+(2x1,5)]	6FX8008-1BA51	21,0	589
	[4G16+(2x1,5)]	6FX8008-1BA61	24,1	801
	[4G25+(2x1,5)]	6FX8008-1BA25	26,6	1254
[4G35+(2x1,5)]	6FX8008-1BA35	30,9	1693	
[4G50+(2x1,5)]	6FX8008-1BA50	34,0	2268	
[4G50+(2x1,5)]	6FX5008-1BA50	34	2268	
BOSCH REXROTH, INDRAMAT® SERIE INK	[4G0,75+(2x0,50)H2]H2	INK-0670	9,4	77
	[4G1+2x(2x0,75)H2]H2	INK-0653	11,7	124
	[4G1,5+2x(2x0,75)H2]H2	INK-0650	12,2	144
	[4G2,5+2x(2x1)H2]H2	INK-0602	14,5	214
	[4G4+(2x1)H2+(2x1,5)H2]H2	INK-0603	16,4	295
	[4G6+(2x1)H2+(2x1,5)H2]H2	INK-0604	18,1	376
	[4G10+(2x1)H2+(2x1,5)H2]H2	INK-0605	22,4	583
	[4G16+2x(2x1,5)H2]H2	INK-0606	25,2	851
	[4G25+2x(2x1,5)H2]H2	INK-0607	28,8	1288
	[4G35+2x(2x1,5)]	INK-0667	30,9	1673
	[4G50+2x(2x2,5)]	INK-0668	36,3	2310

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	CU (Kg/Km)
LENZE®	[4G1+(2x0,50)]	--	10,0	86
	[4G1,5+(2x0,50)]	--	11,5	110
	[4G2,5+(2x0,50)]	--	13,2	150
	[4G4+(2x1,0)]	--	14,6	267
	[4G6+(2x1,0)]	--	16,8	362
	[4G10+(2x1,0)]	--	20,1	572
	[4G16+(2x1,0)]	--	23,8	791
SERVO/MOTOR CABLES	[4G1]H2	--	7,8	56
	[4G1,5+(2x1)H2]H2	--	11,5	122
	[4G1,5+2x(2x1,5)H2]H2	--	13	205
	[4G2,5+2x(2x0,75)H2]H2	--	13,8	211
	[4G2,5+2x(2x1,5)H2]H2	--	14,2	249
	[4G4+2x(2x1,5)H2]H2	--	18	384
	[4G6+2x(2x1,5)H2]H2	--	19	495

ENCODER, RESOLVER AND TACHOMETRIC CABLES WITH PUR JACKET

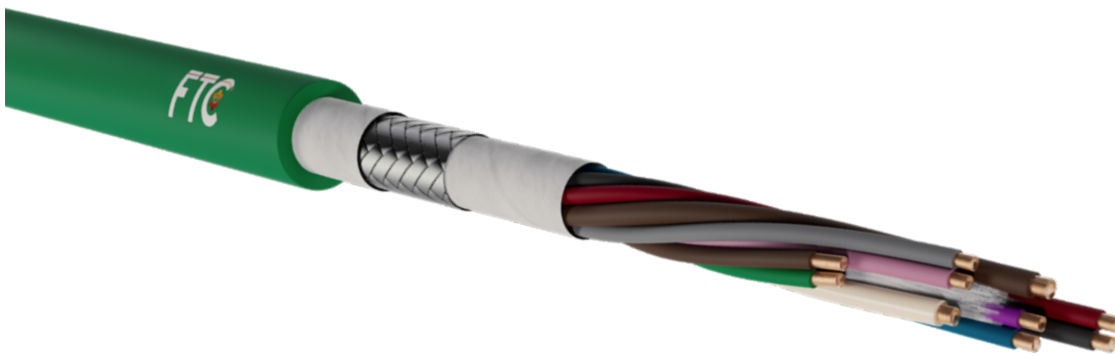
Encoder and resolver cables for flexible installation are designed to ensure reliable performance in dynamic applications, where continuous movement and mechanical stress are constant. Used in automated industrial environments, robotics, and motion control systems, these cables are essential to reliably transmit all the data required for axis control, actuators, and servomotors, thereby ensuring high system efficiency.









Unlike fixed installation cables, flexible installation cables are built to withstand millions of bending cycles while maintaining their electrical and mechanical properties intact. Thanks to the use of flexible conductors and advanced insulating materials, they provide excellent resistance to wear and environmental factors such as extreme temperatures and chemical agents.

Protection against electromagnetic interference is another key feature, especially for encoder and resolver cables, where signal integrity is crucial for the proper operation of control systems. Their advanced structure minimizes electromagnetic disturbances while ensuring maximum flexibility in mobile applications.

Cable Construction

Shielded encoder and resolver cables for flexible installation are built with an optimized structure to withstand dynamic mechanical stress and ensure maximum signal integrity, even in complex industrial environments. Their composition includes:



-  **Conductor:**
Flexible bare or tinned copper conductor, ensuring high flexibility and resistance to continuous mechanical stress.
-  **Insulation:**
Polypropylene, selected for its excellent insulating and transmission properties.
-  **Pair Shielding (where required):**
Depending on the system used, individual pairs can be shielded according to customer specifications.
-  **Assembly:**
Concentric composite lay, with optimized pitch to improve signal transmission and flexibility.
-  **Overall Shield:**
Tinned copper braid with approximately 85% coverage, except for the Lenze® system, which may require different configurations.
-  **Jacket:**
Polyurethane (PUR), compliant with standards, providing excellent mechanical protection and chemical resistance.
-  **Jacket Color:**
 - RAL 6018** standard *DESINA*® color
 - RAL 2003**, in some systems, according to system-specific requirements
 - Other colors available on request.
-  **Operating Temperature:**
From -40°C to +90°C, ensuring optimal performance even in extreme temperature environments.

Dynamic Performance: Detailed specifications available in Table 1-1 Dynamic Performance.

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
SIEMENS®	(2x2x0,2+1x2x0,38) (Drive CLiQ cat.5)	6FX 8008-2DC00	7	●**	38
	(2x2x0,15+1x2x0,38) (Drive CLiQ cat.5) posa mobile		7	●**	34
	12x0,22 dinamo tachimetrica	6FX8008-1BD81	7,3	●**	65
	2x2x0,18	6FX8008-1BD71	5,3	●**	24
	4x2x0,18	6FX8008-1BD61	6,7	●**	35
	8x2x0,18	6FX8008-1BD11	8,2	●**	55
	3x(2x0,14)+1x2x0,50+1x4x0,14+1x4x0,25 Encoder	6FX8008-1BD51	9,6	●**	96
	3x(2x0,14)+2x0,50+4x0,14 Resolver	6FX8008-1BD41	9,2	●**	88
	3x(2x0,14)+2x(0,50)	6FX8008-1BD31	9,4	●**	76
	4x2x0,34+4x0,50 Encoder	6FX8008-1BD21	9,3	●**	83
BOSCH REXROTH, Indramat® Serie Ink	9x0,50	INK0208 ORANGE	8,8	●**	72
	9x0,50	INK0208 GREEN	8,8	●**	72
	4x2x0,25+2x1	INK0209 ORANGE	8,8	●**	68
	4x2x0,25+2x1	INK0209 GREEN	8,8	●**	68
	4x2x0,25+2x0,50	INK0448 ORANGE	8,5	●**	56
	4x2x0,25+2x0,50	INK0448 GREEN	8,5	●**	56
	4x0,14+4x2x0,14+4x1	INK0532 ORANGE	9,7	●**	81
	4x0,14+4x2x0,14+4x1	INK0532 GREEN	9,7	●**	81
BOSCH®	(6x0,14)+2x(2x0,14)+2x2x0,14+4x0,50 encoder		9,5	●**	86
LENZE®	4x(2x0,14)+(2x1) encoder	EYF0019	11,2	●**	68
	4x(2x0,14)+2x(1) encoder		11,8	●**	73
	4x(2x0,14)+2x(0,50) encoder		9,7	●**	54
	3x(2x0,14)+(3x0,14)	EYF0020	9,6	●**	52
	3x(2x0,14)+(4x0,14)+2x(2x0,50)	EYF0024	12,2	●**	89
	3x(2x0,14)+2x(0,50) resolver		8,8	●**	77
	3x(2x0,14)+2x(0,50) resolver		8,8	●**	77
	5x(2x0,14)+(4x0,14)+(2x0,50)		12,6	●**	117
FANUC®	1x2x0,18+5x0,50		7,6	●**	45
	2x2x0,18+5x0,50		7,8	●**	56
	3x2x0,18+6x0,50		8,7	●**	72
	3x2x0,18+6x1		8,9	●**	108
	5x2x0,18+6x0,50		8,7	●**	84
	4x2x0,22+2x0,50		7,6	●**	72
	6x2x0,25+2x0,50		10,6	●**	77
	10x2x0,22		9	●**	75
	10x2x28AWG		6	●**	36

SYSTEM	FORMATION (N° x MMQ)	OEM CODE	NOMINAL DIAMETER (mm)	JACKET COLOR	CU (Kg/Km)
HEIDENHAIN®	4x2x0,14+4x0,50	244957-01 BLACK	8,5	●	58
	4x2x0,14+4x0,50	244957-01 GREEN	8,5	●**	58
	3x(2x0,14)+2x(1x0,50)		'8,5 o 9,4 robust'	●**	76
	3x(2x0,14)+2x(1)		'9,1 o 9,9 robust'	●	87
	3x(2x0,14)+2x(1)		'9,1 o 9,9 robust'	●**	87
	4x2x0,14+(4x0,14)+4x0,50	354341-01	8,5	●**	74
	4x2x0,14+(4x0,14)+4x1		10,2	●**	99
	6x2x0,19	291639-01	8	●**	53
	10x0,14+2x0,50		7,2 o 8,0 costampabile	●**	49
10x0,14+4x0,50		7,8 o 8,9 costampabile	●**	65	
SCHNEIDER / ELAU®	(3x2x0,14+2x0,34)		6,8	●**	37
	(3x2x0,25+2x0,50)		7,7	●**	48
B&R® (Berneker&Rainer)	(5x2x0,14+2x0,50)		7,9	●**	52
	(5x2x0,14+2x0,50)		7,9	●**	52
YASKAWA®	3x(2x0,34)+3G0,50 encoder		9	●**	64
	2x2x0,34 encoder		7	●**	33
	4x2x0,25+2x0,50 encoder		8,5	●	56
ROCKWELL®	3x(2x0,34)+3G0,50 encoder		9	●**	64
	2x2x0,34 encoder		7	●**	33
	4x2x0,25+2x0,50 encoder		8,5	●	56
CONTROL TECHNIQUES UNIMOTOR®	6x2x0,34+(2x0,34)+1x2x1 encoder		10,9	●**	124
	2x2x0,14		5,7	●**	20,6
OMRON®	2x2x0,25+2x0,50		6,6	●**	34
	2x2x0,22+2x1		7,6	●**	54
	2x0,50+4x2x0,25		8,6	●	61
	2x0,50+4x2x0,25		8,6	●**	61
BAUMULLER®	5x2x0,14+2x0,25		8	●**	61
DENAHER®	7x2x0,14+1x2x0,5		8	●**	67
	4x2x0,25		7,3	●**	40
	4x2x0,25		7,3	●**	40
Altri	3x2x0,34 encoder		7,2	●**	42
	6x2x0,14+2x0,50+(2x0,14)		9	●**	67
	6x2x0,14+2x0,50+1x0,14		9,6	●**	60
	4x(2x0,34) resolver		11,2	●**	102

Sensor cables for flexible installation are specifically designed to withstand continuous mechanical stress in applications where constant movement is required, such as robotic systems, automated machinery, and other dynamic industrial environments. Their construction ensures high flexibility and durability.

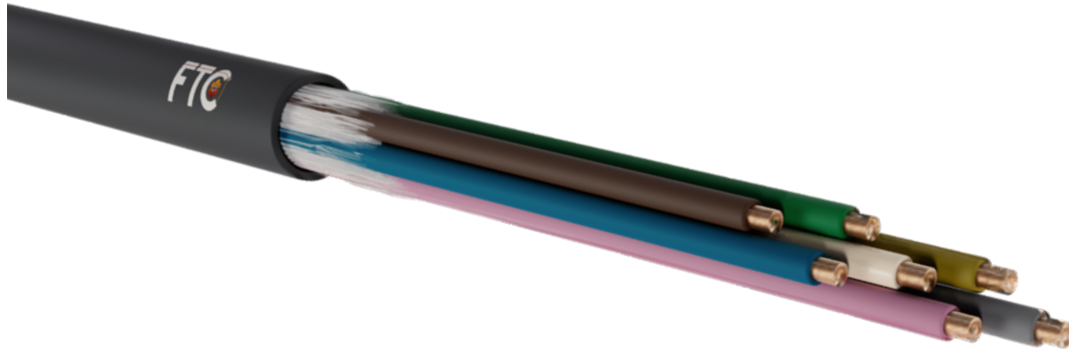
Flexible installation cables must maintain their properties even after millions of movement cycles. This capability is achieved through the use of flexible conductors and highly resistant insulating and jacket materials, which minimize mechanical wear and thermal degradation.

Designed to operate in variable environmental conditions, these cables provide a reliable solution to ensure operational continuity in complex mobile applications.



They are designed for applications requiring high flexibility and mechanical strength. These cables, ideal for use in dynamic environments, are built to deliver high performance under demanding operating conditions.

Cable Construction



Conductor:

Flexible bare or tinned copper, ideal for withstanding constant movements without breaking or compromising transmission.



Insulation:

As specified in Table 1-1 Dynamic Performance.



Insulation Colors:



FORMATION 3x0,25/0,34 mm².
FORMATION 4x0,25/0,34 mm².
FORMATION 5x0,25/0,34 mm².



Jacket:

As specified in Table 1-1 Dynamic Performance.



Jacket Color:

● RAL 9005
● RAL 1021



Bending Radius:

As specified in Table 1-1 Dynamic Performance.



Operating Temperature:

From -20°C to +90°C for PVC/PVC or PP/PVC configurations
From -40°C to +90°C for PP/PUR configuration

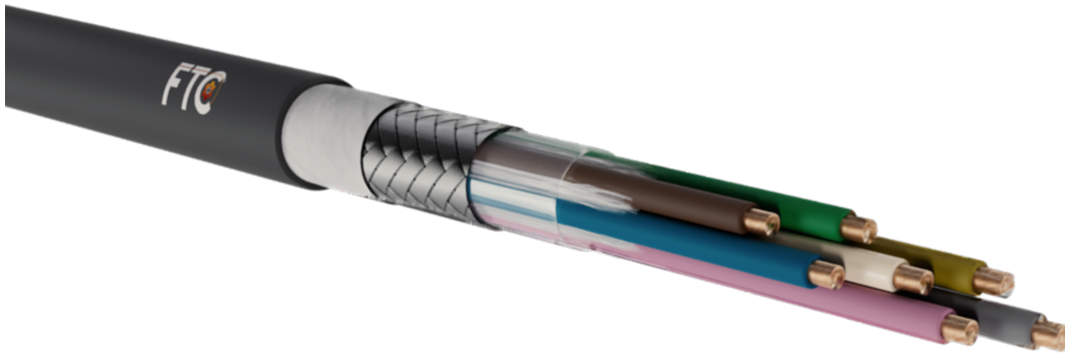
These specifications ensure reliable operation even under harsh environmental conditions and during continuous movement.


FORMATION (N° x MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
3x0,25	3,8	●	PVC/PVC	7,9
4x0,25	4,2	●	PVC/PVC	10,5
5x0,25	4,9	●	PVC/PVC	13,1
3x0,34	4,1	●	PVC/PVC	10,3
4x0,34	4,4	●	PVC/PVC	13,7
5x0,34	4,8	●	PVC/PVC	17,2
4x0,34	5,2	● ^{**}	PVC/PVC	13,7
3x0,25	4,1	●	PP/PVC	7,9
4x0,25	4,6	●	PP/PVC	10,5
5x0,25	5	●	PP/PVC	13,1
3x0,34	4,4	●	PP/PVC	10,3
4x0,34	4,8	●	PP/PVC	13,7
5x0,34	5,1	●	PP/PVC	17,2
4x0,34	5,2	● ^{**}	PP/PVC	13,7
3x0,25	4,1	●	PP/PUR	7,5
4x0,25	4,6	●	PP/PUR	10
5x0,25	5	●	PP/PUR	12,6
3x0,34	4,4	●	PP/PUR	10,2
4x0,34	4,8	●	PP/PUR	13,7
5x0,34	5,1	●	PP/PUR	17,1
4x0,34	5,2	● ^{**}	PP/PUR	13,7


(*) On request, also available in grey RAL 7035 and RAL 7001 - (**) **DESINA**® Coding


Shielded sensor cables for flexible installation are designed for dynamic applications where it is essential to protect the signal from electromagnetic interference, while ensuring high flexibility and mechanical strength. These cables are ideal for industrial environments with electromagnetic noise and continuous movements, typical of automated machinery and robotics.














Cable Construction




 **Conductor:** Flexible bare or tinned copper, ideal for withstanding constant movements without breaking or compromising transmission.


 **Insulation:** As specified in Table 1-1 Dynamic Performance, to adapt to different operating conditions.


 **Insulation Colors:**

				FORMATION 3x0,25/0,34 mm ² .	
				FORMATION 4x0,25/0,34 mm ² .	
					FORMATION 5x0,25/0,34 mm ² .

 **Jacket:** As specified in Table 1-1 Dynamic Performance, to select the most suitable material for the application.

 **Jacket Color:** ● RAL 9005

 **Bending Radius:** As specified in Table 1-1 Dynamic Performance, ensuring that the cable maintains its properties even in confined spaces and under continuous movement.

 **Operating Temperature:**
 From -20°C to +90°C for PVC/PVC or PP/PVC configurations
 From -40°C to +90°C for PP/PUR configuration

These cables represent the optimal solution for critical operating environments, ensuring reliability and signal protection during continuous motion.

FORMATION (N° - MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
3x0,25	4,2	●	PVC/PVC	16,8
4x0,25	4,6	●	PVC/PVC	22,1
5x0,25	5,2	●	PVC/PVC	24,9
3x0,34	4,5	●	PVC/PVC	21,9
4x0,34	5	●	PVC/PVC	25,4
5x0,34	5,4	●	PVC/PVC	29,2
3x0,25	4,8	●	PP/PVC	16,5
4x0,25	5,3	●	PP/PVC	19,2
5x0,25	5,8	●	PP/PVC	24,2
3x0,34	5,2	●	PP/PVC	19,3
4x0,34	5,6	●	PP/PVC	25,4
5x0,34	5,9	●	PP/PVC	29
3x0,25	4,8	●	PP/PUR	16,5
4x0,25	5,3	●	PP/PUR	19,2
5x0,25	5,8	●	PP/PUR	24,2
3x0,34	5,2	●	PP/PUR	19,3
4x0,34	5,6	●	PP/PUR	25,4
5x0,34	5,9	●	PP/PUR	29


(*) On request, also available in grey RAL 7035 and RAL 7001 - (*) **DESINA**® Coding - Custom marking and outer diameter available on request


They are designed to facilitate the connection between sensors, actuators, and other components, simplifying wiring in dynamic industrial applications. As part of passive systems, they do not actively intervene in data transmission or processing but serve as a physical interface linking various devices to the central system. This configuration reduces the amount of wiring required and improves system clarity and maintenance.


Specifically designed for environments with constant movement, these cables ensure high resistance to bending and other mechanical stresses. Their construction provides high reliability even in demanding operating conditions, ensuring continuous connections between the moving components of the system.













Cable Construction





 **Conductor:** Flexible bare or tinned copper, ideal for withstanding continuous movements without compromising conductivity.

 **Insulation:** As specified in Table 1-1 Dynamic Performance, with materials optimized for operating conditions.

 **Insulation Colors:**


				FORMATION 3x0,25/0,34 mm ² . FORMATION 4x0,25/0,34 mm ² . FORMATION 5x0,25/0,34 mm ² .
				
			 	

 **Assembly:** Concentric layers, with optional separating tapes to ensure mechanical stability and facilitate movement during use.

 **Jacket:** As specified in Table 1-1 Dynamic Performance, depending on application and operating conditions.

 **Colore:**

-  RAL 9005
-  RAL 7001

 **Bending Radius:** As specified in Table 1-1 Dynamic Performance, ensuring adequate flexibility and long-term durability.

This design guarantees optimal performance in dynamic industrial environments, providing durability and reliability during prolonged use.

FORMATION (N° x MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
2x0,75+4x0,34	7,5	● ●	PVC/PVC	30
2x0,75+6x0,34	7,9	● ●	PVC/PVC	36
2x0,75+10x0,34	8,8	● ●	PVC/PVC	50
2x0,75+12x0,34	9,5	● ●	PVC/PVC	57
2x0,75+20x0,34	11,3	● ●	PVC/PVC	87
3G0,75+12x0,34	8,5	● ●	PVC/PVC	64,2
3G0,75+16x0,34	10,5	● ●	PVC/PVC	78,2
3G0,75+4x0,34	7,5	● ●	PVC/PVC	37
3G0,75+8x0,34	8,5	● ●	PVC/PVC	51
3G1+12x0,50	11	● ●	PVC/PVC	91,5
3G1+16x0,50	11,9	● ●	PVC/PVC	109,1
3G1+8x0,50	9,6	● ●	PVC/PVC	71,5
12x0,14	6	● ●	PVC/PVC	20
8x0,25	6	● ●	PVC/PVC	21
12x0,25	6,5	● ●	PVC/PVC	32
8x0,34	6,3	● ●	PVC/PVC	28
18x0,75	11,5	● ●	PVC/PVC	148
2x0,75+4x0,34	7,5	● ●	PVC/PUR	30
2x0,75+6x0,34	7,9	● ●	PVC/PUR	36
2x0,75+10x0,34	8,8	● ●	PVC/PUR	50
2x0,75+12x0,34	9,5	● ●	PVC/PUR	57
2x0,75+20x0,34	11,3	● ●	PVC/PUR	87
3G0,75+12x0,34	8,5	● ●	PVC/PUR	64,2
3G0,75+16x0,34	10,5	● ●	PVC/PUR	78,2
3G0,75+4x0,34	7,5	● ●	PVC/PUR	37
3G0,75+8x0,34	8,5	● ●	PVC/PUR	51
3G1+12x0,50	10,7	● ●	PVC/PUR	91,5
3G1+16x0,50	11,9	● ●	PVC/PUR	109,1
3G1+8x0,50	9,6	● ●	PVC/PUR	71,5
12x0,14	6	● ●	PVC/PUR	20
8x0,25	6	● ●	PVC/PUR	21
12x0,25	6,5	● ●	PVC/PUR	32
8x0,34	6,3	● ●	PVC/PUR	28
18x0,75	11,5	● ●	PVC/PUR	148

FORMATION (N° - MMQ)	NOMINAL DIAMETER (mm)	JACKET COLOR	INSULATION AND JACKET MATERIALS	CU (Kg/Km)
2x0,75+4x0,34	7,5	● ●**	PP/PVC	30
2x0,75+6x0,34	8,5	● ●**	PP/PVC	36
2x0,75+10x0,34	8,5	● ●**	PP/PVC	50
2x0,75+12x0,34	9,5	● ●**	PP/PVC	57
2x0,75+20x0,34	11,3	● ●**	PP/PVC	87
3G0,75+12x0,34	8,5	● ●**	PP/PVC	64,2
3G0,75+16x0,34	10	● ●**	PP/PVC	78,2
3G0,75+4x0,34	7,5	● ●**	PP/PVC	37
3G0,75+8x0,34	8,5	● ●**	PP/PVC	51
3G1+12x0,50	10,7	● ●**	PP/PVC	91,5
3G1+16x0,50	11,5	● ●**	PP/PVC	109,1
3G1+8x0,50	9,6	● ●**	PP/PVC	71,5
12x0,14	5,7	● ●**	PP/PVC	20
8x0,25	6	● ●**	PP/PVC	21
12x0,25	6,5	● ●**	PP/PVC	32
8x0,34	6,3	● ●**	PP/PVC	28
18x0,75	11,5	● ●**	PP/PVC	148
2x0,75+4x0,34	7,5	● ●**	PP/PUR	30
2x0,75+6x0,34	8,5	● ●**	PP/PUR	36
2x0,75+10x0,34	8,5	● ●**	PP/PUR	50
2x0,75+12x0,34	9	● ●**	PP/PUR	57
2x0,75+20x0,34	11,3	● ●**	PP/PUR	87
3G0,75+12x0,34	8,2	● ●**	PP/PUR	64,2
3G0,75+16x0,34	10	● ●**	PP/PUR	78,2
3G0,75+4x0,34	7,5	● ●**	PP/PUR	37
3G0,75+8x0,34	8,2	● ●**	PP/PUR	51
3G1+12x0,50	10,7	● ●**	PP/PUR	91,5
3G1+16x0,50	11,5	● ●**	PP/PUR	109,1
3G1+8x0,50	9,6	● ●**	PP/PUR	71,5
12x0,14	5,7	● ●**	PP/PUR	20
8x0,25	6	● ●**	PP/PUR	21
12x0,25	6,5	● ●**	PP/PUR	32
8x0,34	6,3	● ●**	PP/PUR	28
18x0,75	11,5	● ●**	PP/PUR	148

WHAT IS **DESINA**®

DESINA® is a benchmark in the standardization of electrical, hydraulic, and pneumatic components and in their interconnection on a common platform for CNC machines and production systems.

DESINA® identifies a complete and general installation system, equipped with the necessary components to achieve a unique, distributed control, independent of specific fieldbus protocols, and capable of operating even in harsh environments under severe conditions. Therefore, it is not "another" fieldbus system with its own protocol.







DESINA® is a comprehensive system designed for standardization and decentralization in the pneumatic and electrical installation technology of machines and equipment. Furthermore, collaboration among companies in the engineering, automotive, component supply, and machine tool sectors has made it possible to develop specifications for the necessary components.

DESINA® uses existing components, such as open bus systems, standard connectors, etc. Through the standardization of components, it allows a wide range of different systems to be made compatible on a single physical platform.

To simplify installation, the VDW working group has defined specific standard cable colors according to their application. Most manufacturers adopt the **DESINA**® standard (DistributEd and Standardised INstAllation technology), which defines color codes for identifying cables based on their function. Specific certifications and approvals are often also required, such as UL approval for the North American market.

DESINA® is a registered trademark of the German Machine Tool Builders' Association.

Color Codes and Applications of Servomotor Cables

-  Orange (RAL 2003)
Shielded servomotor cable
Ideal for shielded power lines and frequency converters.
-  Green (RAL 6018)
Shielded measurement and control cable
Perfect for encoders, resolvers, sensors, and measuring devices.
-  Violet (RAL 4001)
Fieldbus cable, hybrid cable 4 × 1,5 / 2,5 mm² + 2 optical fibers
-  Yellow (RAL 1021)
Cable 4 × 0,34 mm²
Designed for proximity sensors, pneumatic and hydraulic valves.
-  Black (RAL 9005)
Unshielded cable
Suitable for supplying equipment and three-phase motors.
-  Grey (RAL 7040)
24Vdc power and control cable
Reliable for low-voltage circuits.

When a client company designs, builds, and installs machinery or plants, it must take into account a multitude of parameters. The choice of components—such as cables—that are suitable for use and compliant with local regulations is fundamental. An inadequate choice, not compliant with standards, can lead to delays or worse, financial losses for the client.

Producing and certifying cables internally is an essential added value for FTC.

Underwriters Laboratories Inc. (UL) is an independent American organization that issues safety certifications through testing of products, materials, components, and equipment. UL also sets the standards to be met in order to obtain these certifications, which are mandatory for operating in the American and Canadian markets.

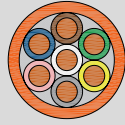
Certified styles must meet the strictest requirements established by UL 758, including mechanical, thermal, chemical, electrical, and flame resistance performance, to ensure the safety and proper functioning of installations.

UL Style AWM

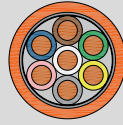
- PUR jacketed UL Style 20233 with PVC (Style 1007) oPP (Style 10467) Insulated, - 80°C 300 V rated
- PVC jacketed UL Style 2464 with PVC (Style 1007) oPP (Style 10467) Insulated, - 80°C 300 V rated
- PUR jacketed UL Style 20549 with PVC (Style 1007) oPP (Style 10467) Insulated, - 80°C 300 V rated
- PUR jacketed UL Style 20234 with PP (Style 11323) Insulated, - 80°C 1000 V rated
- PUR jacketed UL Style 21223 with PP (Style 11323) Insulated, - 80°C 1000 V rated
- PVC jacketed UL Style 21179 with PVC insulation Style 11008 or PP insulation Style 11785 - 90°C 1000 V rated
- PUR jacketed UL Style 21209 with PVC insulation Style 11008 or PP insulation Style 11785 - 90°C 1000 V rated

FTC PRODUCT CODE Style 20233: Z3D198X000000 (PP INSULATION) OR BEF198X000000 (PVC INSULATION)

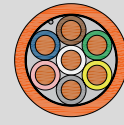
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame retardant. Low emission of toxic/corrosive gases and opaque fumes in case of fire. Suitable for use in external interconnection of electronic equipment.
Product category: AVLV2 and AVLV8

CHARACTERISTICS

Voltage Rating: 300 V
Working Temperature: -50°C to +80°C Fixed installation
Minimum Bending Radius: 6 times the overall diameter
Max short circuit temperature: 160°C
Insulation resistance >5 MOhm x km

CONSTRUCTION

Conductor

Bare annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758 or Tinned annealed copper CU-ETP (DIN 5787 Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758

Insulation

Polypropylene (PP) Style 10467 or PVC Style 1007

Core Identification (Colors on demand)

Conductors Lay-up

Multiconductor, Pairs/Triads, composite (on demand)

Screen

- On demand
- Bare or Tinned copper braid (a)
- Aluminium/ Polyester tape + drain wire (b)

Outer sheath

Polyurethane according to Styles 20233
Colors on demand

Number of cores on demand

CONDUCTOR SECTION:

26 AWG - 16 AWG solid or stranded.

MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 20233 80°C 300 V – AWM A/B I/II 80°C 300 V – SN/YY Type
Voltage No. cores x size –CE + METRICAL

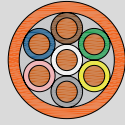
CABLE FEATURES

CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.22 NO. 210 - Appliance Wiring Material Products
	Style 10467- Single Conductor with Extruded insulation
	Styles 20233 Multiconductor cable using non-integral jacket
Fire behaviour	Style 1007 - Single Conductor with Extruded Insulation
Fire behaviour	FT-1 Flame Test, UL 758, Section 43 and per CSA C22.2 NO. 210 11.8 (a)
Fire behaviour	FT-2 Flame Test, UL 758, Section 44 and per CSA C22.2 NO. 210 11.8 (b)
Emission of opaque fumes and toxic/corrosive gases	IEC 60754-1 Test on gases evolved during combustion Part 1: Determination of halogen acid gas content
Outer sheath characteristics	Oil resistance UV resistance Ozone resistance Hydrocarbon resistance
EU directives	Directive RoHS 2011/65/EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage

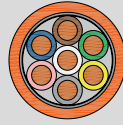


FTC PRODUCT CODE STYLE 2464: 3UB198X000000 (PVC INSULATION) Z4E198X000000 (PP INSULATION)

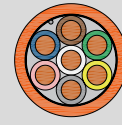
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame retardant. Low emission of toxic/corrosive gases and opaque fumes in case of fire. Suitable for use in external interconnection of electronic equipment.
Product category: AVLV2 and AVLV8.

CHARACTERISTICS

Voltage Rating: 300 V
Working Temperature: -20 / +80 °C fixed installation
Minimum Bending Radius: 6 times the overall cable diameter
Max short circuit temperature: 160°C
Insulation resistance >100 MOhm x km

CONSTRUCTION

Conductor

Bare annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758 or Tinned annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758

Insulation

PVC Style 1007 or Polypropilene Style 10467

Core Identification (Colors on demand)

Conductors Lay-up

Multiconductor, Pairs/Triads, composite (on demand)

Screen

- On demand
- Bare or Tinned copper braid (a)
- Aluminium/ Polyester tape + drain wire (b)

Outer sheath

PVC STYLE 2464
Colors on demand

Number of cores on demand

CONDUCTOR SECTION:

26 AWG - 16 AWG solid or stranded.

MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 2464 80°C 300 V – AWM A/B I/II 80°C 300 V – SN/YY Type
Voltage No. cores x size – CE + METRICAL

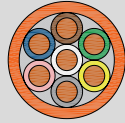
CABLE FEATURES

CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.2 NO. 210 Appliance Wiring Material Products
	Style 2464 - Multiple conductor cable using non integral jacket
	Style 10467 - Single Conductor with Extruded Insulation
Fire behaviour	FT-1 Flame Test, UL 758, Section 43 and per CSA C22.2 NO. 210 11.8 (a)
	FT-2 Flame Test, UL 758, Section 44 and per CSA C22.2 NO. 210 11.8 (b)
Emission of opaque fumes and toxic/corrosive gases	IEC60754-1 Test on gases evolved during combustion Part 1: Determination of halo-gen acid gas content
Outer sheath	Oil resistance UV resistance Hydrocarbon resistance
EU directives	Directive RoHS 2011/65 EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage

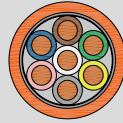


FTC PRODUCT CODE STYLE 20549: Z3l98X000000 (PP INSULATION) BEG198X000000 (PVC INSULATION)

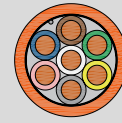
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame retardant. Low emission of toxic/corrosive gases and opaque fumes in case of fire. Suitable for use in external interconnection of electronic equipment.
Product category: AVLV2 and AVLV8.

CHARACTERISTICS

Voltage Rating: 300 V
Working Temperature: -50 / +80 °C fixed installation
Minimum Bending Radius: 6 times the overall cable diameter
Max short circuit temperature: 160°C
Insulation resistance >100 MOhm x km

CONSTRUCTION

Conductor

Bare annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O2 < 0,04%) - flexible stranded acc. to UL 758 or Tinned annealed copper CU-ETP (DIN 5787 Cu > 99,9%, O2 < 0,04%) - flexible stranded acc. to UL 758

Insulation

Polypropylene (PP) Style 10467 or PVC Style 1007

Core Identification (Colors on demand)

Conductors Lay-up

Multiconductor, Pairs/Triads, composite (on demand)

Screen

- On demand
- Bare or Tinned copper braid (a)
- Aluminium/ Polyester tape + drain wire (b)

Outer sheath

Polyurethane according to 20549
Colors on demand

Number of cores on demand

CONDUCTOR SECTION:

26 AWG - 16 AWG solid or stranded.

MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 20549 80°C 300 V – AWM A/B I/II 80°C 300 V – SN/YYType
Voltage No. cores x size – CE + METRICAL

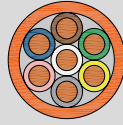
CABLE FEATURES

CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.2 NO. 210 Appliance Wiring Material Products
	Style 10467 - Single conductor with extruded insulation
	Style 1007 - Single Conductor with Extruded Insulation
Fire behaviour	Style 20549 - Multiple conductor cable using non integral jacket
	FT-1 Flame Test, UL 758, Section 43 and per CSA C22.2 NO. 210 11.8 (a)
Fire behaviour	FT-2 Flame Test, UL 758, Section 44 and per CSA C22.2 NO. 210 11.8 (b)
Emission of opaque fumes and toxic/corrosive gases	IEC60754-1 Test on gases evolved during combustion Part 1: Determination of halo-gen acid gas content
Outer sheath characteristics	Oil resistance UV resistance Ozone resistance Hydrocarbon resistance
EU directives	Directive RoHS 2011/65/EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage

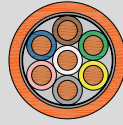


FTC PRODUCT CODE STYLE 20234: Z3D197X000000

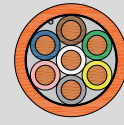
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame retardant. Low emission of toxic/corrosive gases and opaque fumes in case of fire. Suitable for use in external interconnection of electronic equipment.
Product category: AVLV2 and AVLV8.

CHARACTERISTICS

Voltage Rating: 1000 V
Working Temperature: -50 / +80 °C fixed installation
Minimum Bending Radius: 6 times the overall cable diameter
Max short circuit temperature: 160°C
Insulation resistance >100 MOhm x km

CONSTRUCTION

Conductor

Bare annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758 or Tinned annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758

Insulation

Polypropylene (PP) Style 11323

Core Identification (Colors on demand)

Conductors Lay-up

Multiconductor, Pairs/Triads, composite (on demand)

Screen

On demand

- Bare or Tinned copper braid (a)
- Aluminium/ Polyester tape + drain wire (b)

Outer sheath

Polyurethane according to Styles 20234
Colors on demand

Number of cores on demand

CONDUCTOR SECTION:

26 AWG - 16 AWG solid or stranded.

CABLE FEATURES

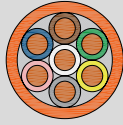
CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.2 NO. 210 Appliance Wiring Material Products
	Style 11323 - Single conductor with extruded insulation
Fire behaviour	Styles 20234 Multiple conductor cable using non integral jacket
	FT-1 Flame Test, UL 758, Section 43 and per CSA C22.2 NO. 210 11.8 (a)
Fire behaviour	2 FT-2 Flame Test, UL 758, Section 44 and per CSA C22.2 NO. 210 11.8 (b)
Emission of opaque fumes and toxic/corrosive gases	IEC 60754-1 Test on gases evolved during combustion Part 1: Determination of halogen acid gas content
	IEC 60754-2 Test on gases evolving during combustion. Part 2: Determination of degree of acidity of gases by measuring pH and conductivity
Outer sheath characteristics	Oil resistance UV resistance Ozone resistance Hydrocarbon resistance
EU directives	Directive RoHS 2011/65/EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage



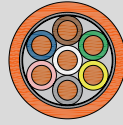
MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 20234 80°C 300 V – AWM A/B I/II 80°C 300 V – SN/YY Type
Voltage No. cores x size – CE + METRICAL

FTC PRODUCT CODE Style 21223: Z3R197X000000

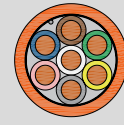
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame retardant. Low emission of toxic/corrosive gases and opaque fumes in case of fire. Suitable for use in external interconnection of electronic equipment.
Product category: AVLV2 and AVLV8.

CHARACTERISTICS

Voltage Rating: 1000 V
Working Temperature: -50 / +80 °C fixed installation
Minimum Bending Radius: 6 times the overall cable diameter
Max short circuit temperature: 160°C
Insulation resistance >100 MOhm x km

CONSTRUCTION

Conductor

Bare annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758 or Tinned annealed copper CU-ETP (DIN 5787 - Cu > 99,9%, O₂ < 0,04%) - flexible stranded acc. to UL 758

Insulation

Polypropylene (PP) Style 11323

Core Identification (Colors on demand)

Conductors Lay-up

Multiconductor, Pairs/Triads, composite (on demand)

Screen

On demand

- Bare or Tinned copper braid (a)
- Aluminium/ Polyester tape + drain wire (b)

Outer sheath

Polyurethane according to Styles 21223
Colors on demand

Number of cores on demand

CONDUCTOR SECTION:

26 AWG - 16 AWG solid or stranded.

MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 21223 80°C 300 V – AWM A/B I/II 80°C 300 V – SN/YY Type
Voltage No. cores xsize – CE + METRICAL

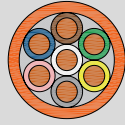
CABLE FEATURES

CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.2 NO. 210 Appliance Wiring Material Products
	Style 11323 - Single conductor with extruded insulation Styles 21223 - Multiple conductor cable using non integral jacket
Fire behaviour	FT-1 Flame Test, UL 758, Section 43 and per CSA C22.2 NO. 210 11.8 (a)
	FT-2 Flame Test, UL 758, Section 44 and per CSA C22.2 NO. 210 11.8 (b)
Emission of opaque fumes and toxic/corrosive gases	IEC 60754-1 Test on gases evolved during combustion Part 1: Determination of halogen acid gas content
	IEC 60754-2 Test on gases evolving during combustion. Part 2: Determination of degree of acidity of gases by measuring pH and conductivity
Outer sheath characteristics	Oil resistance UV resistance Ozone resistance Hydrocarbon resistance
EU directives	Directive RoHS 2011/65/EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage

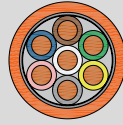


FTC CODICE PRODOTTO Style 21179: Z2C198X000000 (PP Isolante) ZFB198X000000 (PVC Isolante)

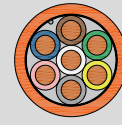
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame-retardant. Low emission of toxic/corrosive gases and low-smoke opacity in case of fire. Suitable for use in the external interconnection of electronic equipment. Product category: AVLV2 and AVLV8

CHARACTERISTICS

Voltage Rating: 1000 V

Working Temperature: -20 / +90 °C fixed installation

Minimum Bending Radius: 8 times the overall cable diameter

Max short circuit temperature: 160°C

Insulation resistance >100 MOhm x km

CONSTRUCTION

Conductor

Annealed bare copper CU-ETP (DIN 5787 – Cu > 99.9%, O₂ < 0.04%) – flexible stranded conductor according to UL 758, or Annealed tinned copper CU-ETP (DIN 5787 – Cu > 99.9%, O₂ < 0.04%) – flexible stranded conductor according to UL 758.

Insulation

Polypropylene (PP) Style 11785 o PVC Style 11008

Core Identification (Colours on request)

Conductors Lay-up

Multi-conductor, composite pairs/triples (on request)

Screen

On request:

- Bare or tinned copper braid (a)
- Aluminium/polyester tape + drain wire (b)

Outer sheath

PVC according to Style 21179

Colours on request

Number of cores on demand

CONDUCTOR SECTION:

30 AWG – 14 AWG, single-wire or flexible stranded conductor.

CABLE FEATURES

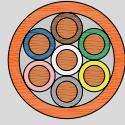
CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.2 NO. 210 Appliance Wiring Material Products
	Style 11008 - Single conductor with extruded insulation
Fire behaviour	Style 21179 - Multiple conductor cable using non integral jacket
	Style 11785 - Single conductor with extruded insulation
Fire behaviour	FT-1 Flame Test, UL 758, Section 43 e per CSA C22.2 NO. 210 11.8 (a)
Emission of opaque fumes and toxic/corrosive gases	FT-2 Flame Test, UL 758, Section 44 e per CSA C22.2 NO. 210 11.8 (b)
Outer sheath characteristics	IEC 60754-1 Test on gases evolved during combustion Part 1: Determination of halogen acid gas content
	IEC 60754-2 Test on gases evolving during combustion. Part 2: Determination of degree of acidity of gases by measuring pH and conductivity
EU directives	Oil resistance UV resistance Hydrocarbon resistance
Direttive EU	Directive RoHS 2011/65/EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage



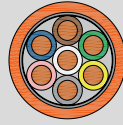
MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 21179 90°C 1000 V – AWM A/B I/II 90°C 1000 V – SN/YY Type Voltage No. cores x size –CE + METRICAL

FTC CODICE PRODOTTO Style 21209: BEM198X000000 (PVC Isolante) JPL198X000000 (PP Isolante)

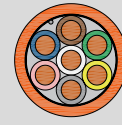
SECTION OPTIONS ON REQUEST



Unshielded



Shielded (a)



Shielded (b)

APPLICATION

Power and control cable. Flame-retardant. Low emission of toxic/corrosive gases and low-smoke opacity in case of fire. Suitable for use in the external interconnection of electronic equipment. Product category: AVLV2 and AVLV8

CHARACTERISTICS

Voltage Rating: 1000 V

Working Temperature: -40 / +90 °C fixed installation

Minimum Bending Radius: 8 times the overall cable diameter

Max short circuit temperature: 160°C

Insulation resistance: >100 MOhm x km

CONSTRUCTION

Conductor

Annealed bare copper CU-ETP (DIN 5787 – Cu > 99.9%, O₂ < 0.04%) – flexible stranded conductor according to UL 758, or Annealed tinned copper CU-ETP (DIN 5787 – Cu > 99.9%, O₂ < 0.04%) – flexible stranded conductor according to UL 758

Isolante

PVC Style 11008 or Polypropylene Style 11785

Core Identification (Colours on request)

Lay-up conduttori

Multi-conductor, composite pairs/triples (on request)

Schermi

Su richiesta

- Bare or tinned copper braid (a)
- Aluminium/polyester tape + drain wire (b)

Guaina esterna

Polyurethane according Style 21209

Colours on request

Number of cores on demand

CONDUCTOR SECTION:

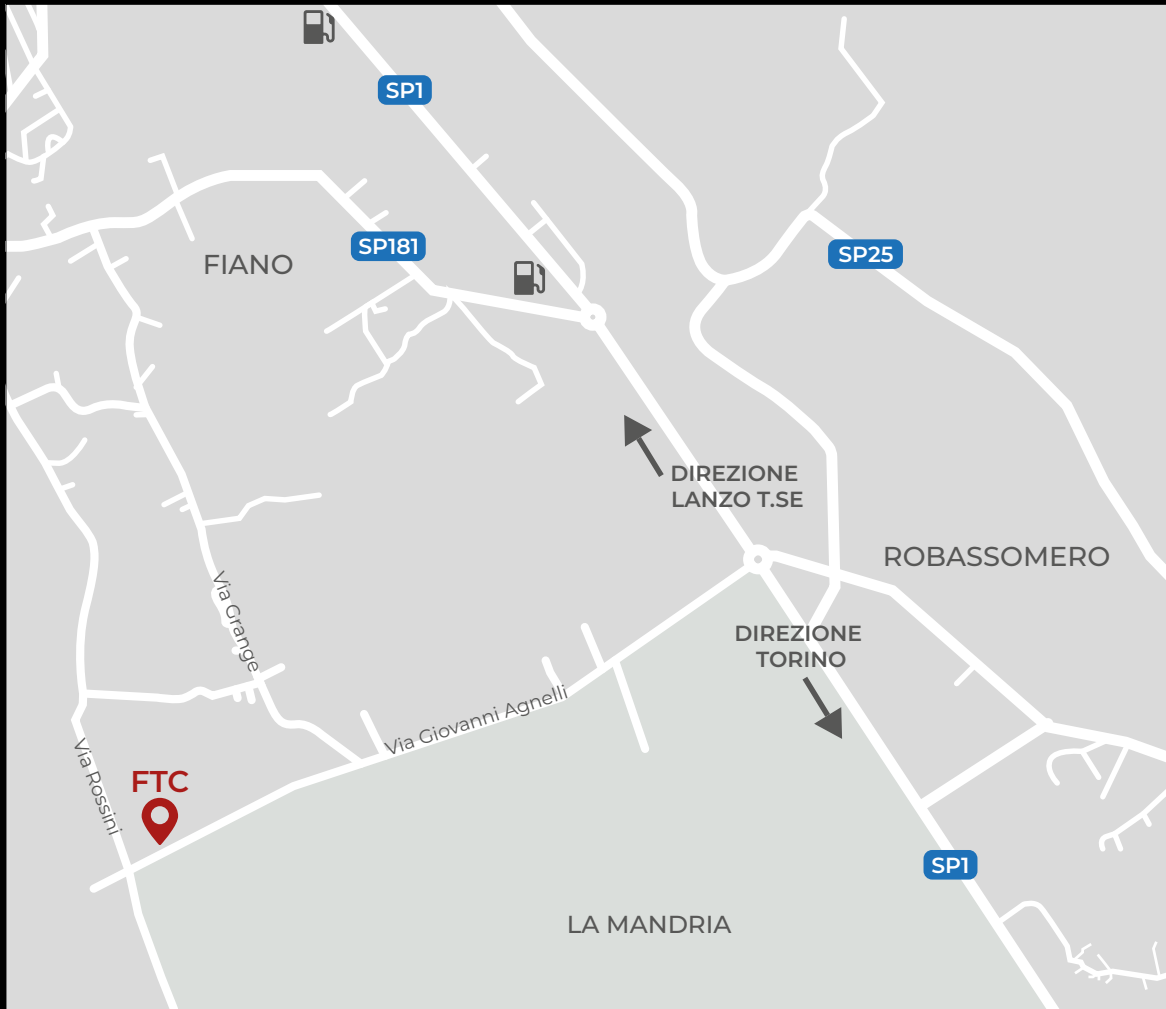
30 AWG – 14 AWG, single-wire or flexible stranded conductor.

CABLE FEATURES

CHARACTERISTIC	REFERENCE STANDARD
Construction	UL 758 - Appliance Wiring Material
	CSA C22.2 NO. 210 Appliance Wiring Material Products
	Style 11008- Single conductor with extruded insulation
Fire behaviour	Style 21209 -Multiple conductor cable using non integral jacket
	Style 11785 - Single conductor with extruded insulation
Fire behaviour	FT-1 Flame Test, UL 758, Section 43 e per CSA C22.2 NO. 210 11.8 (a)
Emission of opaque fumes and toxic/corrosive gases	FT-2 Flame Test, UL 758, Section 44 e per CSA C22.2 NO. 210 11.8 (b)
Outer sheath characteristics	IEC 60754-1 Test on gases evolved during combustion Part 1: Determination of halogen acid gas content
	IEC 60754-2 Test on gases evolving during combustion. Parte 2: Determination of degree of acidity of gases by measuring pH and conductivity
EU directives	Oil resistance UV resistance Ozone resistance Hydrocarbon resistance
Direttive EU	Directive RoHS 2011/65/EU - Restriction of hazardous substances Directive 2014/35/EU - Low voltage



MARKING: FTC S.r.l. (MADE IN ITALY) – E527502 AWM Style 21209 90°C 1000 V – AWM A/B I/II 90°C 1000 V – SN/YY
Type Voltage No. cores x size – CE + METRICAL



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Special Cables & Conductors

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