














Robot Cables



Robot Cable Selection

Chainflex® cable	Jacket	Shield	Class	Bending radius moving (factor x d)	Temperature moving from/to °F (°C)	Oil-resistant	Torsion resistant	V max. ft/s (m/s) unsupported	V max. ft/s (m/s) gliding	a max. ft/s ² (m/s ²)	Approvals and standards
Robot cables											
Hybrid cable/Control cable											
CFROBOT9	PUR		6.1.3	10	-13/+176°F (-25/ +80°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE  
Bus cable											
CFROBOT8	PUR	✓	6.1.3	10	-4/+158°F (-20/ +70°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE  
Measuring system cable											
CFROBOT4	TPE		6.1.3	10	-13/+176°F (-25/ +80°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE  
Fiber optic cable											
CFROBOT5	TPE	✓	7.1.4	12.5	-4/+140°F (-20/ +60°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE 
Servo cable/Power cable											
CFROBOT6	PUR	✓	6.1.3	10	-13/+176°F (-25/ +80°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE  
CFROBOT7	PUR	✓	6.1.3	10	-13/+176°F (-25/ +80°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE  
CFROBOT	TPE		6.1.4	10	-31/+212°F (-35/ +100°C)	✓	✓	32.81 ft/s (10 m/s)	32.81 ft/s (10 m/s)	32.81 ft/s ² (10 m/s ²)	CE  

Chainflex® cables for robots

In the industrial applications of today ever more complex sequences of movements demand twistable and/or three-dimensional flexible cables with a long service life similar to the Chainflex® cables for use in linear Energy Chain Systems®.

Wires, stranded, shields and sheathing materials must compensate both major changes in bending load and changes in diameter due to torsional movements.

For this purpose, different "soft" structural elements e.g. rayon fibres, PTFE elements or filling elements that absorb torsion forces are used in Chainflex® ROBOT cables.

Special demands are made on the braided shielding in torsion cables. Optimized shield structures with PTFE gliding films are used to absorb the forces caused by torsion movements.

To use and example of Twistable Bus cables, the transmission characteristics such as attenuation, cable capacity and signal quality must remain within very tight tolerance ranges over the whole service life. This is achieved through the use of special insulating materials and mechanical elements with matching capacity values.

The highly abrasion-resistant, halogen-free and flame-resistant PUR sheathing mixture in motor, hybrid/control cables and bus cables protects the core elements from possible damage.

The CFROBOT cable line utilizes two jacket materials PUR and TPE. These materials were carefully chosen to protect the core elements like power conductors, high-speed data pairs and fiber optic components from possible damage. PUR jacket is highly abrasion resistant, halogen free and flame resistant. TPE jacket is highly abrasion resistant and halogen-free.

The special design logic behind CFROBOT cables was developed in theory and needed to be validated through testing. igus® set out to develop a test that would simulate the torsion stress cables will endure in the field. We do this by utilizing the Triflex® R Energy Chain® which can be twisted to various degrees at very high frequencies. This test is referred to as the igus® Torsion Test Standard.

According to this standard, all Chainflex® ROBOT cables of a Triflex® R Energy Chain® are twisted with a fixed-point



distance of one meter and a torsion of +/- 180° at least 3 million times. In addition, a test is carried out on a test bench with a Triflex® R length of approx. 2500 mm with 270° torsion. This test duplicated the forces and impacts that cables are exposed to in industrial robotic applications.

We have also found that all the non-shielded, gusset-filled extruded standard Chainflex® control cables of the series CF5, CF77-UL-D and CF9 correspond to the above-mentioned igus® standard and have been approved for use in torsion applications.

The following twistable CF ROBOT cable types are currently available:

- Hybrid/control cables
- Motor/servo cables
- Bus/data cables
- FOC cables

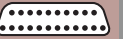
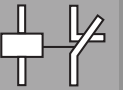
We can also offer you Chainflex® ROBOT cables terminated with the connectors of your choice as ReadyCable®, or as a ready-to-install ReadyChain® cable assembly.



Internet: <http://www.igus.com>

email: sales@igus.com

QuickSpec/RFQ: <http://www.igus.com/quickspec>



CF
ROBOT9



PUR Hybrid Cable, Twistable

Chainflex® CF ROBOT9

PUR outer jacket, unshielded/shielded, oil-resistant and coolant-resistant, notch-resistant, flame-retardant, hydrolysis-resistant and microbe-resistant

CLASS
6.1.3

Price Index



Conductor
Highly flexible special
conductor

Cable core
twisted
together with
dampening

Extremely
torsion
resistant
copper shield

Overall Shield
PTFE barrier

Outer jacket
Pressure
extruded,
PUR blend



Construction

Conductors: Finely stranded bare copper wires

Conductor insulation: Mechanically high quality TPE blend

Total shielding: Torsion flex tinned copper serves, coverage 85% optical

Outer jacket: Low adhesion, halogen-free, highly abrasion resistant PUR blend. Adapted for the requirements of Energy Chain® systems

Silicon-free in compliance with PV 3.10.7 - status 1992. **Color:** black.

Technical Data

Minimum bending radius, moving: 10 x outer cable diameter

Minimum bending radius, fixed: 4 x outer cable diameter

Permissible temperature, moving: -13°F to +176°F (-25°C to +80°C)

Permissible temperature, fixed: -40°F to +176°F (-40°C to +80°C)

Torsion: +/-180°, 1m cable length

Voltage: 300V

Testing voltage: 2000V

Oil resistance: High

UV resistance: High

Flame Resistance: According to IEC 60332-1-2, CEI 20-34, FT1, VW-1

Regulations: UL AWM style for USA & Canada: 20317 80°C 300V **Flame Resistance:** FT1CE, RoHS:

2002/95/EC; Please reference the Design Section (Chapter 1) for more information.

Cleanroom: According to ISO Class 1, material/cable tested by IPA according to ISO Standard 14644-1.

Test cable CF27-07-05-02-01-D

Typical Applications

- for maximum load requirements with torsion movements
- indoor and outdoor applications, UV-resistant
- especially for robots and movements in the 3D range
- robots, handling, spindle drives



10.158

No Minimum Order • No Cut Charges on up to 10 cuts of the same part number

PUR Hybrid Cable, Twistable



CF
ROBOT9

Chainflex® CF ROBOT9

PUR outer jacket, unshielded/shielded, oil-resistant and coolant-resistant, notch-resistant, flame-retardant, hydrolysis-resistant and microbe-resistant

Price Index



CLASS
6.1.3

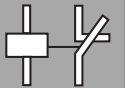
Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Outer Diameter (approx)		Copper Index		Weight	
			in.	(mm)	lbs/mft	(kg/km)	lbs/mft	(kg/km)
CFROBOT9-001	17	5C x 1.0						
	17	1 STP x 1.0	.37	(9.5)	50.3	(75)	86.7	(129)
CFROBOT9-002	18	6C x 0.75						
	18	3C x 0.75 SHLD	.47	(12)	51.0	(76)	96.0	(143)
CFROBOT9-003	20	2C x 0.50						
	20	1 STP x 0.5	.39	(10)	18.1	(27)	50.3	(75)
CFROBOT9-004	17	16C x 1.0						
	17	1 STP x 1.0	.65	(16.5)	118.9	(177)	219.0	(326)
CFROBOT9-005	17	23C x 1.0						
	17	1 STP x 1.0	.77	(19.5)	161.9	(241)	321.2	(478)
CFROBOT9-006	17	24C x 1.0						
	17	1 STP x 1.0	.79	(20)	168.6	(251)	325.2	(484)
CFROBOT9-007	24	15 STP x 0.25						
	24	4C x 0.25 SHLD	.71	(18)	145.8	(217)	221.7	(330)

NOTE: The mentioned external diameters are maximum values.

Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Color code
CFROBOT9-001	17	5C x 1.0	Conductors black with white numerals 1-4, one conductor green-yellow
	17	1 STP x 1.0	Conductors black with white numerals 5-6
CFROBOT9-002	18	6C x 0.75	Conductors black with white numerals 1-5, one conductor green-yellow
	18	3C x 0.75 SHLD	Conductors black with white numerals 6-8
CFROBOT9-003	20	2C x 0.50	Conductors black with white numerals 1-2
	20	1 STP x 0.50	Conductors black with white numerals 3-4
CFROBOT9-004	17	16C x 1.0	Conductors black with white numerals 1-4, 7-17, one conductor green-yellow
	17	1 STP x 1.0	Conductors black with white numerals 5-6
CFROBOT9-005	17	23C x 1.0	Conductors black with white numerals 1-4, 7-24, one conductor green-yellow
	17	1 STP x 1.0	Conductors black with white numerals 5-6
CFROBOT9-006	17	24C x 1.0	Conductors black with white numerals 1-4, 7-25, one conductor green-yellow
	17	1 STP x 1.0	Conductors black with white numerals 5-6
CFROBOT9-007	24	15 STP x 0.25	Color code in accordance with DIN 47100
	24	4C x 0.25 SHLD	white, green, brown, yellow (CAN-Bus)

STP = Individually shielded Pair
 PR = Twisted Pair
 C = Single Conductor
 SC = Individually shielded conductor
 SHLD = Shielded over Precable

Internet: <http://www.igus.com>
 email: sales@igus.com
 QuickSpec/RFQ: <http://www.igus.com/quickspec>



No Minimum Order • No Cut Charges on up to 10 cuts of the same part number

10.159



Chainflex® CF ROBOT8

PUR outer jacket, shielded, oil-resistant, notch-resistant, flame-retardant, hydrolysis-resistant and microbe-resistant

Construction

Conductors: Finely stranded bare copper wires

Conductor insulation: According to bus specification

Conductor stranding: According to bus specification

Total shielding: Torsion resistant tinned copper serves, coverage 80% optical

Intermediate jacket: Foil taping over the external layer

Outer jacket: Low adhesion, halogen-free, highly abrasion resistant PUR blend. Adapted for the requirements of Energy Chain® systems. Silicon-free in compliance with PV 3.10.7 - status 1992.

Color: Blue.

Technical Data

Minimum bending radius, moving: 10 x outer cable diameter

Minimum bending radius, fixed: 7.5 x outer cable diameter

Permissible temperature, moving: -4°F to +158°F (-20°C to +70°C)

Permissible temperature, fixed: -13°F to +158°F (-25°C to +70°C)

Torsion: +/-180°, 1m cable length

Voltage: 30V

Testing voltage: 500V

Oil resistance: High

UV resistance: High

Flame Resistance: According to IEC 60332-1-2, CEI 20-34, FT1, VW-1

Regulations: UL AWM style for USA & Canada: >24 AWG 20963, ≤ 24 AWG 20236 80°C 30V **Flame**

Resistance: FT1 CE, RoHS: 2002/95/EC; Please reference the Design Section (Chapter 1) for more information.

Cleanroom: According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1.

Typical Applications

- for maximum load requirements with torsion movements
- indoor and outdoor applications, UV-resistant
- especially for robots and movements in the 3D range
- robots, handling, spindle drives

Conductor
Especially bend-resistant fine-wire stranded conductor

Cable core
twisted together to an optimized pitch

Strain relief
GRP core element

Gusset-filled extruded dampening elements

PTFE barrier

Overall Shield
Torsion resistant copper shield

Outer jacket
Highly abrasion resistant PUR jacket blend



Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Outer Diameter (approx)		Copper Index		Weight	
			in.	(mm)	lbs/mft	(kg/km)	lbs/mft	(kg/km)
Profibus								
CFROBOT8-001	22	2C x 0.35	.31	(8)	14.7	(22)	38.3	(57)
Can-Bus								
CFROBOT8-022	20	4C x 0.50	.28	(7)	26.2	(39)	43.6	(65)
GigE								
CFROBOT8-045	26	4 PR x 0.14	.33	(8.5)	23.5	(35)	43.6	(65)

NOTE: The mentioned external diameters are maximum values.

Part No.	Characteristic Impedance Ohms	Core Group	Color Code
CFROBOT8-001	150	2C x 0.35	red, green
CFROBOT8-022	120	4C x 0.5	white, green, brown, yellow (star-quad stranding)
CFROBOT8-045	100	4 PR x 0.14	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

STP = Individually shielded Pair

PR = Twisted Pair

C = Single Conductor

SC = Individually shielded conductor

SHLD = Shielded over Precable

PUR Measuring System Cable, Twistable



CF
ROBOT4

CLASS
6.1.3

Price Index



Chainflex® CF ROBOT4

PUR outer jacket, shielded, oil-resistant and coolant-resistant, notch-resistant, flame-retardant, hydrolysis-resistant and microbe-resistant

Construction

Conductors: Fine wire stranded conductor in especially bending resistant version consisting of bare copper wires

Conductor insulation: Mechanically high-quality TPE mixture

Shield: Torsion resistant tinned copper shield, coverage 85% optical

Outer jacket: Low adhesion, halogen-free, highly abrasion resistant PUR blend. Adapted for the requirements of Energy Chain® systems. Silicon-free in compliance with PV 3.10.7 - status 1992. **Color:** Blue.

Technical Data

Minimum bending radius, moving: 10 x outer cable diameter

Minimum bending radius, fixed: 4 x outer cable diameter

Permissible temperature, moving: -13°F to +176°F (-25°C to +80°C)

Permissible temperature, fixed: -40°F to +176°F (-40°C to +80°C)

Torsion: +/-180°, 1m cable length

Voltage: 30V

Testing voltage: 500V

Oil resistance: High

UV resistance: High

Flame Resistance: According to IEC 60332-1-2, CEI 20-34, FT1, VW-1

Regulations: UL AWM style for USA & Canada: 20236 80°C 30V **Flame Resistance:** FT1 CE, RoHS:

2002/95/EC; Please reference the Design Section (Chapter 1) for more information.

Cleanroom: According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1. Test cable CF27-07-05-02-01-D

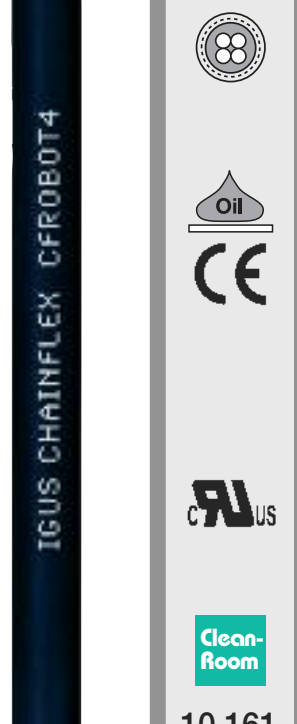
Typical Applications

- for maximum load requirements with torsion movements
- indoor and outdoor applications, UV-resistant
- especially for robots and movements in the 3D range
- robots, handling, spindle drives



Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Outer Diameter (approx)		Copper Index		Weight	
			in.	(mm)	lbs/mft	(kg/km)	lbs/mft	(kg/km)
CFROBOT4-001	26	3 STP x 0.14						
	26	4C x 0.14						
	20	2C x 0.5	.43	(11)	44.2	(65)	113.0	(166)
CFROBOT4-002	26	3 STP x 0.14						
	20	2SC x 0.5	.41	(10.5)	45.6	(67)	87.1	(128)
CFROBOT4-009	24	3 PR x 0.24						
	20	2C x 0.5	.35	(9)	36.0	(53)	69.4	(102)
CFROBOT4-015	26	4 PR x 0.14						
	20	4C x 0.5	.35	(9)	36.7	(54)	72.1	(106)
CFROBOT4-028	26	2 PR x 0.14						
	22	2C x 0.38	.30	(7.5)	25.6	(42)	49.0	(72)

Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Color code
CFROBOT4-001	26	3 STP x 0.14	yellow/green, black/brown, red/orange
	26	4C x 0.14	gray, blue, white-yellow, white-black
	20	2C x 0.5	brown-red, brown-blue
CFROBOT4-002	26	3 STP x 0.14	green/yellow, black/brown, red/orange
	20	2SC x 0.5	black, red
CFROBOT4-009	24	3 PR x 0.24	brown/green, blue/violet, gray/pink, red/black
	20	2C x 0.5	white, brown
CFROBOT4-015	26	4 PR x 0.14	brown/green, violet/yellow, gray/pink, red/black
	20	4C x 0.5	blue, white, brown-green, white-green
CFROBOT4-028	26	2 PR x 0.14	green/yellow, pink/blue
	22	2C x 0.38	red, black



10.161

TPE Fiber Optic Cable, Twistable

Chainflex® CF ROBOT5

TPE outer jacket, oil-resistant, bio-oil-resistant, UV-resistant, low temperature flexible, hydrolysis-resistant and microbe-resistant

CLASS
7.1.4

Price Index



FOC cores with high tensile aramide fibers

GRP core element

FOC wires stranded with dampers around the GRP core

Outer jacket
Pressure extruded halogen-free TPE blend



Construction

Conductors: 50/125µm, 62.5/125µm special fixed wired elements with aramide strain relief

Conductor stranding: FOC wires stranded with high-tensile aramide dampers around the GRP central element

Outer jacket: Low adhesion, highly flexible, abrasion resistant, TPE blend. Adapted for the requirements of Energy Chain® systems. Silicon-free in compliance with PV 3.10.7 - status 1992. **Color:** Steel Blue.

Technical Data

Minimum bending radius, moving: 12.5 x outer cable diameter

Minimum bending radius, fixed: 7.5 x outer cable diameter

Permissible temperature, moving: -4°F to +140°F (-20°C to +60°C)

Permissible temperature, fixed: -13°F to +140°F (-25°C to +60°C)

Torsion: +/-180°, 1m cable length

Oil resistance: High

UV resistance: High

Flame Resistance: According to IEC 60332-1-2, CEI 20-34, FT1, VW-1

Regulations: CE, RoHS: 2002/95/EC; Please reference the Design Section (Chapter 1) for more information.

Cleanroom: According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1. Test cable CF9-15-07

Typical Applications

- for maximum load requirements with torsion movements
- indoor and outdoor applications, UV-resistant
- especially for robots and movements in the 3D range
- robots, handling

Part No.	No. of Fibers	Fiber Diameter approx. µm	Outer Diameter (approx)		Weight	
			in.	(mm)	lbs/mft	(kg/km)
CFROBOT5-500	2	62.5/125	.33	(8.5)	58.4	(87)
CFROBOT5-501	2	50/125	.33	(8.5)	58.4	(87)

NOTE: The mentioned external diameters are maximum values.

Part No.	Bandwidth with 850 nm (MHz x km)	Attenuation with 850 nm (dB/km)	Bandwidth with 1300 nm (MHz x km)	Attenuation with 1300 nm (dB/km)	Color Code
CFROBOT5-500	160-200	3.2	200-500	0.9	blue with white numbers
CFROBOT5-501	200-600	2.5 - 3.5	600-1200	0.7 - 1.5	blue with white numbers



PUR Motor Cable, Twistable



CF
ROBOT6/7

CLASS
6.1.3

Price Index



Chainflex® CF ROBOT6/7

PUR outer jacket, shielded/unshielded, oil-resistant and coolant-resistant, notch-resistant, flame-retardant, hydrolysis-resistant and microbe-resistant

Construction

Conductors: Finely stranded bare copper wires

Conductor insulation: Mechanically high quality TPE blend

Core identification: See table below for conductor identification

Overall shield: Extremely torsion resistant, tinned copper braid, coverage 85% optical

Outer jacket: Low adhesion, halogen-free, highly abrasion resistant PUR blend. Adapted for the requirements of Energy Chain® systems. Silicon-free in compliance with PV 3.10.7 - status 1992. **Color:** blue.

Technical Data

Minimum bending radius, moving: 10 x outer cable diameter

Minimum bending radius, fixed: 4 x outer cable diameter

Permissible temperature, moving: -13°F to +176°F (-25°C to +80°C)

Permissible temperature, fixed: -40°F to +176°F (-40°C to +80°C)

Torsion: +/-180°, 1m cable length

Voltage: 1000V

Testing voltage: 4000V

Oil resistance: High

UV resistance: High

Regulations: UL AWM Style for USA & Canada: 21223 80°C 1000V **Flame Resistance:** FT1, VW-1 **CE, RoHS: 2002/95/EC;** Please reference the Design Section (Chapter 1) for more information.

Cleanroom: According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1. Test cable CF27-07-05-02-01-D

Typical Applications

- for maximum load requirements with torsion movements
- indoor and outdoor applications, UV-resistant
- especially for robots and movements in the 3D range
- robots, handling, spindle drives

Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Outer Diameter (approx)		Copper Index		Weight	
			in.	(mm)	lbs/mft	(kg/km)	lbs/mft	(kg/km)
Unshielded - Conductors are black with printed numbers, one conductor is green/yellow								
CFROBOT6-100-3	8	3C x 10	.65	(16.5)	192.8	(287)	271.4	(404)
CFROBOT6-160-3	6	3C x 16	.75	(19)	308.4	(459)	403.8	(601)
CFROBOT6-250-3	4	3C x 25	.93	(23.5)	485.1	(722)	622.2	(926)
CFROBOT6-350-3	2	3C x 35	1.02	(26)	685.4	(1020)	828.5	(1233)

Shielded - Conductors are black with printed numbers: One conductor is green/yellow

CFROBOT7-15-03-C	16	3C x 1.5	.31	(8)	38.9	(58)	63.8	(95)
CFROBOT7-25-03-C	14	3C x 2.5	.37	(9.5)	59.8	(89)	92.0	(137)
CFROBOT7-15-04-C	16	4C x 1.5	.33	(8.5)	49.7	(74)	81.3	(121)
CFROBOT7-25-04-C	14	4C x 2.5	.41	(10.5)	77.2	(115)	114.9	(171)

4 conductor power & 2 pairs: Power conductors are black printed as follows: One conductor is green/yellow;

Pair 1: 5 & 6; Pair 2: 7 & 8

CFROBOT7-15-15-02-02-C	16	4C x 1.5						
	16	2 STP x 1.5	.65	(16.5)	127.6	(190)	255.3	(380)
CFROBOT7-25-15-02-02-C	14	4C x 2.5						
	16	2 STP c 1.5	.73	(18.5)	154.5	(230)	302.3	(450)

4 pairs: Power conductors are black printed as follows: One conductor is green/yellow

1. U/L1/C/L+ 2. V/L2 3. W/L3/D/L- 4. green/yellow

Pair 1: white & brown

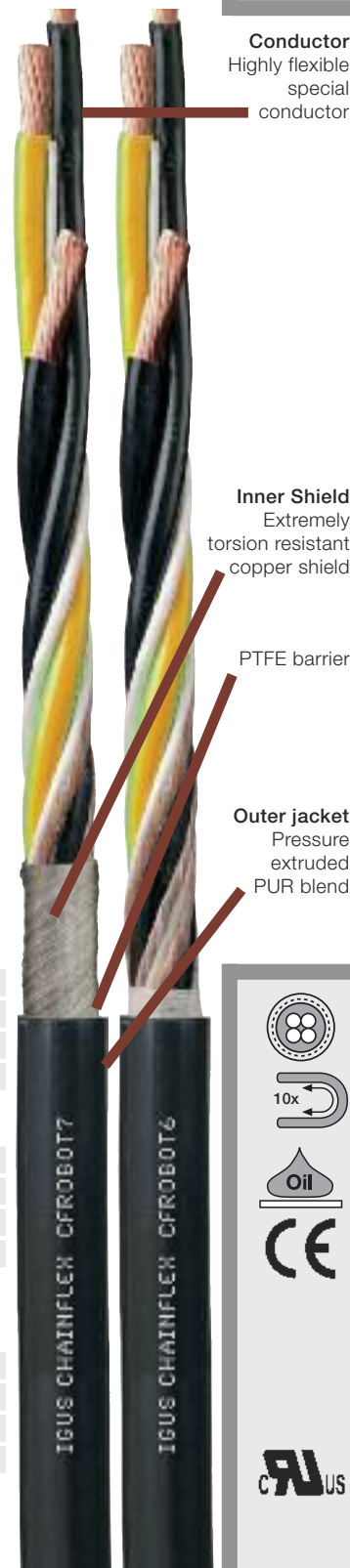
Pair 3: gray & pink

Pair 2: green & yellow

Pair 4: blue & red

CFROBOT7-40-02-02-04-C	12	4C x 4.0						
	24	4 STP x 0.25	.65	(16.5)	161.2	(240)	228.4	(340)

C = Single conductor; STP = Individually shielded pair



10.163

TPE Robot Cable

CLASS
6.1.4

Price Index



Chainflex® CF ROBOT

TPE Energy Chain® cable, torsion flexing, shielded, oil-resistant, bio-oil-resistant, PVC-free, UV-resistant, flame retardant

Conductor
Highly flexible special conductor

Insulation
Pressure extruded TPE

High quality rayon yarn

PTFE barrier

Shield
Torsion resistant copper shield

High rigidity rayon yarn

Outer jacket
Pressure extruded, TPE blend



Construction

Conductors: Finely stranded bare copper wires

Conductor insulation: Mechanically high quality TPE blend

Total shielding: Torsion flex tinned copper serves, coverage 90% optical

Outer jacket: Low adhesion, abrasion resistant and highly bend resistant TPE base suited for the requirements of Energy Chain® systems

Silicon-free in compliance with PV 3.10.7 - status 1992. **Color:** black.

Technical Data

Minimum bending radius, moving: 10 x outer cable diameter

Minimum bending radius, fixed: 4 x outer cable diameter

Permissible temperature, moving: -31°F to +212°F (-35°C to +100°C)

Permissible temperature, fixed: -40°F to +212°F (-40°C to +100°C)

Voltage: 1000V

Testing voltage: 4000V

Torsion: +/- 180°, with 1m cable length

Oil resistance: High

UV resistance: High

Regulations: cRUUs: UL AWM style for USA & Canada: 21387 90°C 1000V **Flame Resistance:** FT1, CE, RoHS: 2002/95/EC; Please reference the Design Section (Chapter 1) for more information.

Typical Applications

- for maximum mechanical load requirements
- indoor and outdoor applications, UV-resistant
- especially for robot and 3D motion
- robots, handling, spindle drives

Part No.	AWG	No. of Conductors and Rated Cross-Section in mm ²	Outer Diameter (approx)		Copper Index		Weight	
			in.	(mm)	lbs/mft	(kg/km)	lbs/mft	(kg/km)
CFROBOT-035	8	1 x 10.0	.41	(10.5)	82.3	(121)	134	(197)
CFROBOT-036	6	1 x 16.0	.45	(11.5)	125.0	(183)	186	(274)
CFROBOT-037	4	1 x 25.0	.55	(14.0)	197.0	(289)	289	(425)
CFROBOT-038	2	1 x 35.0	.61	(15.5)	266.0	(391)	363	(534)
CFROBOT-039	1	1 x 50.0	.69	(17.5)	371.0	(546)	494	(726)



