

OMERIN USES ITS KNOW-HOW AND TECHNOLOGY TO DEVELOP INCREASINGLY HIGH-PERFORMANCE PRODUCTS





CGP SAS, CABLES FOR GLOBAL PERFORMANCE A SUBSIDIARY OF THE OMERIN GROUP CGP

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www.omerin.com

Technical expertise

Since 1947, CGP has been building up genuine expertise, to achieve total control of the manufacturing processes for special high-performance cables. Our design office is staffed by experienced engineers specialising in metallurgy, plastics, electromagnetic compatibility, micromechanics, data transmission, etc.

Our laboratory uses test equipment to validate the physical, chemical, mechanical, electrical, and fire-retardant behaviours of the cables we manufacture.

Our staff: eager to help you

The technical expertise of our teams is at your service, providing answers and solutions to all your requirements. The Methods, Quality, and Research & Development departments work in constant collaboration. All our staff apply this approach, with their involvement and constant self-checking at all stages of production.

PRODUCTS

CABLE CARRIER CHAINS

Single-core power cables	PAGE
HIFLEX® CH2 POWER - 600 / 1000 V cable, 2 million cycles	4
HIFLEX® CH5 POWER - 600 / 1000 V cable, 5 million cycles	5
HIFLEX® CH5 BE POWER - Shielded 600 / 1000 V cable, 5 million cycles	6
Multi-core instrumentation & control cables	7
HIELEX® CH5 CONTROL - 300 / 500 V cable, 5 million cycles	8
HIFLEX® CH5 BE CONTROL - Shielded 300 / 500 V cable, 5 million cycles	9
ALTERNATE BENDING	

Multi-core instrumentation & control cables

HIFLEX® FX5 CONTROL - 300	/ 500 V cable, 5 million cycles	12

BENDING & TORSION

Multi-core instrumentation & control cables

HIFLEX® TF5 CONTROL - 300 / 500 V cable, 5 million cycles	14
HIFLEX® TF5 BE CONTROL - Shielded 300 / 500 V cable, 5 million cycles	15

SPECIAL & CUSTOM

OMBILIFLEX® hybrid and umbilical cables18SPIRFLEX® spiral cables19





CABLE CARRIER CHAINS

Cables for Robotics & Automation HIFLEX® CH

1

Number of cycles

in cable carrier chains

Bending radius

1 • Flexible bare copper core – Class 5

2 million

10 x ø

as per IEC 60228 2 • Snag-proof tape on core 3 • PVC insulation 4 • Extra-flexible PVC jacket

SINGLE-CORE POWER CABLES

HIFLEX® **CH2 POWER**

CABLE CARRIER CHAINS



General characteristics

Thermal

Continuous operating temperatures: -20°C to +90°C

Electrical

Operating voltage: 600 / 1000 V Test voltage: 3000 V

Mechanical strength

as per test report CGP DEP2008001-CH2 Fatigue strength in cable carrier chains: 2 million cycles Dynamic bending radius: 10 x ø Good mechanical strength

Chemical

Good resistance to common chemical environments

Stranding* (mm²)	Nominal outside diameter (mm)	Approximate weight (kg/km)
1 x 6	7.4	103
1 x 10	8.9	157
1 x 16	10.3	226
1 x 25	11.8	321
1 x 35	13.2	432
1 x 50	15.5	616
1 x 70	18.1	830
1 x 95	20.2	1087

*for other stranding combinations, please contact us

For this product, please contact: CGP SAS 62 route du Coin 42400 Saint-Chamond France Tel.: +33 (0)4 77 31 02 54 cgp@omerin.com



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Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in cable carrier chains

Options

 Tin-plated copper core • Other colours: contact us Other nominal cross-sections: contact us

Number of cycles 5 million

in cable carrier chains

Bending radius 10 x ø

Applications

in cable carrier chains

• Tin-plated copper core • Other colours: contact us Other nominal cross-sections:

Options

contact us

Extra-flexible electrical cable

for electrical power supply and instrumentation & control of moving

devices. Especially designed for use

1 · Flexible bare copper core – Class 5 as per IEC 60228 2 • Snag-proof tape on core 3 • TPE insulation 4 · Polyurethane sheath



HIFLEX[®] CH5 POWER



General characteristics

Thermal

Continuous operating temperatures: -20°C to +90°C

Electrical

Operating voltage: 600 / 1000 V Test voltage: 3000 V

Halogen free

as per IEC 60754-1

Stranding* (mm ²)	Nominal outside diameter (mm)	Approximate weight (kg/km)
1хб	6.3	82
1 x 10	7.6	127
1 x 16	9.2	194
1 x 25	10.8	286
1 x 35	12.0	387
1 x 50	13.7	543
1 x 70	16.6	753
1 x 95	19.0	1010

*for other stranding combinations, please contact us

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Mechanical strength

as per test report CGP DEP2008003-CH5 Fatigue strength in cable carrier chains: 5 million cycles Dynamic bending radius: 10 x ø Good mechanical strength

Chemical

Good resistance to common chemical environments

Number of cycles

in cable carrier chains

Bending radius

1 • Flexible bare copper core – Class 5

4 • Tin-plated copper braid shield 5 · Polyurethane sheath

5 million

10 x ø

as per IEC 60228 2 • Snag-proof tape on core 3 • TPE insulation

CABLE CARRIER CHAINS SINGLE-CORE POWER CABLES

HIFLEX[®] CH5 BE POWER

Mechanical strength

Dynamic bending radius: 10 x ø

Good mechanical strength

Chemical

as per test report CGP DEP2008004-CH5-BE

Fatigue strength in cable carrier chains: 5 million cycles

Good resistance to common chemical environments



General characteristics

Thermal

Continuous operating temperatures: -20°C to +90°C

Electrical

Operating voltage: 600 / 1000 V Test voltage: 3000 V

Halogen free

as per IEC 60754-1

Stranding* (mm ²)	Nominal outside diameter (mm)	Approximate weight (kg/km)
1хб	7.0	118
1 x 10	8.2	170
1 x 16	9.7	246
1 x 21	11.3	348
1 x 35	12.5	453
1 x 50	14.5	639
1 x 70	17.4	905
1 x 95	19.8	1184

*for other stranding combinations, please contact us

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Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in cable carrier chains

Options

 Tin-plated copper core • Other colours: contact us Other nominal cross-sections: contact us • Wrap shielding

CABLE CARRIER CHAINS MULTI-CORE INSTRUMENTATION & CONTROL CABLES

3

2

Number of cycles 2 million

in cable carrier chains

Bending radius 10 x ø

 1 • Extra-flexible bare copper core - class 6 as per IEC 60228.
 2 • PVC insulation
 3 • Snag-proof tape
 4 • Extra-flexible PVC jacket





Thermal

Continuous operating temperatures: -20°C to +90°C

4

Electrical

Operating voltage: 300 / 500 V Test voltage: 2000 V

Mechanical strength

as per test report CCP DEP2008001-CH2 Fatigue strength in cable carrier chains: 2 million cycles Dynamic bending radius: 10 x ø Good mechanical strength

Chemical

Good resistance to common chemical environments

Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in cable carrier chains

Options

Tin-plated copper core
Other colours: contact us
Other nominal cross-sections: contact us

For this product, please contact:

Nominal outside Approximate diameter weight Stranding^{*} (mm²) (mm) (kg/km) 47 5.7 2 x 0.75 3 x 0.75 6.0 57 5 x 0.75 7.1 85 7 x 0.75 8.4 119 12 x 0.75 182 10.1 14 x 0.75 10.6 205 18 x 0.75 11.8 258 25 x 0.75 14.7 368 2 x 1 6.2 58 6.5 70 3 x 1 4 x 1 7.1 86 104 5 x 1 7.7 7 x 1 9.1 145 226 12 x 1 11.0 18 x 1 17.9 373 20 x 1 13.6 358 25 x 1 15.5 458 40 x 1 18.8 699 3 x 1.5 98 7.6 124 4 x 1.5 8.4 9.2 5 x 1.5 151 7 x 1.5 10.8 209 12 x 1.5 13.2 331 18 x 1.5 15.6 476 20 x 1.5 16.4 527 678 25 x 1.5 18.8

*for other stranding combinations, please contact us



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CABLE CARRIER CHAINS

MULTI-CORE INSTRUMENTATION & CONTROL CABLES

Mechanical strength

Dynamic bending radius: 10 x ø

Good mechanical strength

Chemical

as per test report CGP DEP2008003-CH5

Fatigue strength in cable carrier chains: 5 million cycles

Good resistance to common chemical environments

Number of cycles

5 million in cable carrier chains

Bending radius 10 x ø

 Extra-flexible bare copper core - class 6 as per IEC 60228.
 TPE insulation
 Snag-proof tape
 Polyurethane sheath





General characteristics

Thermal

Continuous operating temperatures: -20°C to +90 °C

Electrical

Operating voltage: 300 / 500 V Test voltage: 2000 V

Halogen free

as per IEC 60754-1

Stranding* (mm ²)	Nominal outside diameter (mm)	Approximate weight (kg/km)
2 x 0.75	5.0	34
3 x 0.75	5.3	43
5 x 0.75	6.3	66
7 x 0.75	7.2	89
12 x 0.75	8.5	137
14 x 0.75	8.9	156
18 x 0.75	9.9	197
25 x 0.75	11.7	274
2 x 1	5.4	42
3 x 1	5.7	53
4 x 1	6.3	67
5 x 1	6.8	81
7 x 1	7.9	111
12 x 1	9.5	177
18 x 1	10.9	251
20 x 1	11.5	279
25 x 1	13.1	354
40 x 1	15.8	544
3 x 1.5	6.5	73
4 x 1.5	7.1	93
5 x 1.5	7.6	111
7 x 1.5	8.8	153
12 x 1.5	10.7	246
18 x 1.5	12.6	359
20 x 1.5	13.2	396
25 x 1.5	14.9	499

*for other stranding combinations, please contact us

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Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in cable carrier chains

Options

 Tin-plated copper core
 Other colours: contact us
 Other nominal cross-sections: contact us

For this product, please contact:

Tel.: +33 (0)4 77 31 02 54 cgp@omerin.com Number of cycles

in cable carrier chains

Bending radius

5 million

10 x ø

as per IEC 60228. 2 • TPE insulation 3 • Snag-proof tape

CABLE CARRIER CHAINS MULTI-CORE INSTRUMENTATION & CONTROL CABLES

HIFLEX[®] CH5 BE CONTROL



General characteristics

Thermal

Continuous operating temperatures: -20°C to +90 °C

Electrical

Operating voltage: 300 / 500 V Test voltage: 2000 V

Halogen free

as per IEC 60754-1

Stranding* (mm²)	Nominal outside diameter (mm)	Approximate weight (kg/km)	
2 x 0.5	5.3	34	
3 x 0.5	5.5	39	
4 x 0.5	5.9	50	
7 x 0.5	7.3	77	
12 x 0.5	8.4	113	
18 x 0.5	9.7	158	
25 x 0.5	11.3	214	
2 x 0.75	5.7	39	
3 x 0.75	6.0	52	
4 x 0.75	6.6	66	
7 x 0.75	7.9	99	
12 x 0.75	9.4	153	
25 x 0.75	12.6	285	

Mechanical strength

as per test report CGP DEP2008004-CH5-BE Fatigue strength in cable carrier chains: 5 million cycles Dynamic bending radius: $10 \times ø$ Good mechanical strength

Chemical

Good resistance to common chemical environments

Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in cable carrier chains

1 · Extra-flexible bare copper core - class 6

4 • Tin-plated copper braid shield 5 • Polyurethane sheath

Options

Tin-plated copper core
 Other colours: contact us
 Other nominal cross-sections:
 contact us
 Wrap shielding

*for other stranding combinations, please contact us

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ALTERNATE BENDING

Cables for Robotics & Automation HIFLEX® FX

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ALTERNATE BENDING

MULTI-CORE INSTRUMENTATION & CONTROL CABLES

3

1

Mechanical strength

Dynamic bending radius: 10 x ø

Good mechanical strength

Chemical

as per test report CGP DEP2008003-FX5 Bending fatigue: 5 million cycles

Good resistance to common chemical environments

2

Number of cycles 5 million

in alternate bending

Bending radius 10 x ø

1 · Extra-flexible bare copper core - class 6 as per IEC 60228. 2 • TPE insulation 3 · Snag-proof tape 4 · Polyurethane sheath





General characteristics

Thermal

Continuous operating temperatures: -20°C to +90 °C

4

Electrical

Operating voltage: 300 / 500 V Test voltage: 2000 V

Halogen free

as per IEC 60754-1

Stranding* (mm²)	Nominal outside diameter (mm)	Approximate weight (kg/km)
2 x 0.75	5.0	34
3 x 0.75	5.3	43
5 x 0.75	6.3	66
7 x 0.75	7.2	89
12 x 0.75	8.5	137
14 x 0.75	8.9	156
18 x 0.75	9.9	197
25 x 0.75	11.7	274
2 x 1	5.4	42
3 x 1	5.7	53
4 x 1	6.3	67
5 x 1	6.8	81
7 x 1	7.9	111
12 x 1	9.5	177
18 x 1	10.9	251
20 x 1	11.5	279
25 x 1	13.1	354
40 x 1	15.8	544
3 x 1.5	6.5	73
4 x 1.5	7.1	93
5 x 1.5	7.6	111
7 x 1.5	8.8	153
12 x 1.5	10.7	246
18 x 1.5	12.6	359
20 x 1.5	13.2	396
25 x 1.5	14.9	499

*for other stranding combinations, please contact us

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Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices.

Options

 Tin-plated copper core Other colours: contact us Other nominal cross-sections: contact us alternate bending



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Tel.: +33 (0)4 77 31 02 54 cgp@omerin.com

BENDING & TORSION Cables for Robotics & Automation HIFLEX® TF

250

8



Number of cycles

Bending radius

2 • Special polymer insulation3 • Snag-proof tape4 • Polyurethane sheath

5 million bending & torsion

10 x ø

as per IEC 60228.

BENDING & TORSION

MULTI-CORE INSTRUMENTATION & CONTROL CABLES

HIFLEX® TF5 CONTROL



General characteristics

Thermal

Continuous operating temperatures: -20°C to +90 °C

Electrical

Operating voltage: 300 / 500 V Test voltage: 2000 V

Mechanical strength

as per test report CGP DEP2008003-TF5 Bending fatigue: 5 million cycles Dynamic bending radius: 10 x ø Good mechanical strength

Chemical

Good resistance to common chemical environments

Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in bending and torsion

1 · Extra-flexible bare copper core - class 6

Options

Tin-plated copper core
Other colours: contact us
Other nominal cross-sections: contact us

For this product, please contact:

Nominal outside Approximate Stranding* diameter weight (mm²) (mm) (kg/km) 5.0 37 2 x 0.75 3 x 0.75 5.2 45 5 x 0.75 6.1 68 94 7 x 0.75 7.2 12 x 0.75 8.4 145 14 x 0.75 8.8 164 18 x 0.75 9.9 209 25 x 0.75 11.6 289 2 x 1 5.4 44 3 x 1 5.7 56 4 x 1 6.3 71 86 5 x 1 6.8 7 x 1 7.8 116 9.5 12 x 1 186 18 x 1 10.9 264 20 x 1 11.4 291 25 x 1 13.1 372 40 x 1 15.7 569 6.5 3 x 1.5 77 4 x 1.5 7.0 96 117 5 x 1.5 7.6 7 x 1.5 8.8 160 10.7 257 12 x 1.5 18 x 1.5 12.6 373 20 x 1.5 13.2 412 25 x 1.5 14.9 518

*for other stranding combinations, please contact us



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BENDING & TORSION MULTI-CORE INSTRUMENTATION & CONTROL CABLES

2

1

3

HIFLEX® TF5 BE CONTROL

4



Bending radius 10 x ø

1 • Extra-flexible bare copper core - class 6 as per IEC 60228.
2 • Special polymer insulation 3 • Snag-proof tape
4 • Shielding by covering in tin-plated copper 5 • Polyurethane sheath

General characteristics

Thermal

Continuous operating temperatures: -20°C to +90°C

5

Electrical

Operating voltage: 300 / 500 V Test voltage: 2000 V

Mechanical strength

as per test report CGP DEP2010003-TF5-BE Bending fatigue: 5 million cycles Dynamic bending radius: 10 x ø Good mechanical strength

Chemical

Good resistance to common chemical environments

Stranding* (mm ²)	Nominal outside diameter (mm)	Approximate weight (kg/km)
2 x 0.5	5.1	36
3 x 0.5	5.2	42
4 x 0.5	5.6	51
7 x 0.5	6.9	78
12 x 0.5	8.0	116
18 x 0.5	9.4	168
25 x 0.5	10.9	222
2 x 0.75	5.5	43
3 x 0.75	5.7	53
4 x 0.75	6.1	65
7 x 0.75	7.6	102
12 x 0.75	8.9	156
25 x 0.75	12.4	309

*for other stranding combinations, please contact us

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Applications

Extra-flexible electrical cable for electrical power supply and instrumentation & control of moving devices. Especially designed for use in bending and torsion

Options

Tin-plated copper core
Other colours: contact us
Other nominal cross-sections: contact us



SPECIAL & CUSTOM Cables for Robotics & Automation OMBILIFLEX® CH / FX / TF

30





IN COMPANY SOUTH OF

SPECIAL & CUSTOM

OMBILIFLEX®

SIGNAL TRANSMISSION

Data bus, Coaxial Optical fibre, Thermocouple Impedance from 50 to150 Ω Single-mode/multi-mode fibres Thermocouple types T, J, E, K, N

ELECTROMAGNETIC SCREEN
Low and high frequencies

TENSILE STRENGTH By cords or braid Tensile strength from 10 daN to 6000 daN

> Power, Instrumentation & Control Very Low Voltage at 1000 V

FLUID Pneumatic or Hydraulic

Low- and high-pressure tube, food grade, high temperature, excellent resistance to chemicals

BENDING Moving applications

High performance

OMBILIFLEX® cables are subject to a vast array of tests to guarantee a high level of quality and satisfy your requirements.

Our laboratory uses test equipment to validate the **physical**, **mechanical**, **chemical**, **electrical**, **and fire-retardant behaviours of** the cables we manufacture.

Applications

This range of multifunction, hybrid cables is intended for cutting-edge sectors like aerospace, military applications, robotics, medical applications, oil exploration, industry, etc. OMBILIFLEX[®] CH = characterisation in cable carrier chains OMBILIFLEX[®] FX = characterisation in alternate bending OMBILIFLEX[®] TF = characterisation in bending / torsion

CUSTOM SOLUTION CGP INNOVATION

Thanks to our expertise and total control of our electrical cable manufacturing processes, the engineers in our R&D department have developed the **OMBILIFLEX®** range. Umbilical cables can combine up to six different functions in a single product: **Energy, Signal, Fluid, Tensile strength, Electromagnetic screening, and Bending**.

Our design office is staffed by experienced engineers specialising in **metallurgy**, **plastics**, **electromagnetic compatibility**, **micromechanics**, **data transmission**, **etc**.. It will give you a fast and precise response by developing an **OMBILIFLEX**® consisting of power cables, twisted pairs, coaxial cables, tubes, optical fibres, shielding, tensile cords or brains... to suit the diverse and complex constraints of your applications.

For this product, please contact: CGP SAS 62 route du Coin 42400 Saint-Chamond France Tel.: +33 (0)4 77 31 02 54 cap@omerin.com

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SPECIAL & CUSTOM

SPIRFLEX®

CGP INNOVATION CUSTOM SOLUTION

The SPIRFLEX® range of high-performance spiral cables was created thanks to the know-how and technical expertise of our engineers. We design and manufacture special cords that meet our customers' specifications, thus offering a totally made-to measure solution (dimensions, length, connectors, etc.).

Our design office is staffed by experienced engineers specialising in metallurgy, plastics, electromagnetic compatibility, data transmission, etc. It will give you a fast and precise response by developing a SPIRFLEX® cable to suit the diverse and complex constraints of your applications.

High performance

Fire and fumes Flame- and fire-retardant version

Mechanical strength

 Good flexibility Shape memory Major elongation • High mechanical strength as per military standard SEFT 027

Physical

 Miniature model • Hybrid functions: Signal / Tensile / Fluid Excellent electromagnetic protection Withstanding extreme conditions: high temperature, chemical attack

Applications

This range of high-performance spiral cables is intended for cuttingedge sectors like aerospace, military applications, robotics, medical applications, oil exploration, etc.



CGP develops special, hybrid, and innovative solutions combined in a single SPIRFLEX® cable: Energy / Signal / Tensile strength / Fluid / Electromagnetic screening Hybrid SPIRFLEX® cables can therefore save considerable time and space during both installation and operation.



SPIRFLEX® CONNECTED SOLUTION

CGP designs solutions and cables equipped with standard or special connectors according to your needs and applications.

The connectors are fitted to the **SPIRFLEX®** spiral cables in our workshops, to guarantee top quality.

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The information given in this technical data sheet is indicative and subject to change without prior notice, since our design analysis cannot fully allow for the installation









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