

2018

GENERAL CATALOGUE



PREMO
www.grupopremo.com





GENERAL CATALOGUE 2018

LEGAL DISCLAIMER

"All the information contained in this catalogue is for general guidance on any matters of interest. As such, it should not be used as a substitute for consultation with professional Premo technicians or competent advisers. Before making any decision or taking any action, you should consult a Premo professional for updated and detailed information." "Given the changing nature of the electronic market, and the inherent hazards of publications and communication, there may be omissions or inaccuracies in the information contained in this catalogue. Furthermore all the information and characteristics contained can be changed without any prior warning." "All products contained in this catalogue have been designed by PREMO S.A. and the unauthorized copy of them is strictly prohibited." "All images on this catalogue, including text, photos, illustrations, graphs, tradenames, logos and components are fully owned or under licence of Premo Group and are protected by copyright, trademark rights and/or any other intellectual property rights. The (intellectual) property right is in no way transferred to the (legal) entity that has access to this catalogue." "All products in this catalogue are sold under the General Terms and Sales Conditions of PREMO S.A. available at www.grupopremo.com"

PREMO 3DCoil is protected under spanish patent number: P200102446

3DCoil Cap Adaptor is protected under Spanish patent number: W2013003888

3DCoil Split Base is protected under Spanish patent number: EP14380009

Alma Flexible Antenna is protected under Spanish patent number: EP16380004

PREMO planar transformers are protected under Spanish patent number: P200201465

3DPower technology is protected under international patent: WO2018083249

PREMO inductive coupler is protected under european patent: Blocking filter is protected under Spanish patent number: ES1134166U

To get more information about PREMO patents please check out: *PREMO Innovation: The Patents Book*.

3DCoil™, 3DPower™, 4DCoil™, PREMO™ are registered TRADE MARKS of PREMO S.A. protected under Spanish and International Trade Mark Association.

PREMO S.A.

Severo Ochoa 47 Parque Tecnológico de Andalucía
29590 Campanillas - Málaga - Spain

info@grupopremo.com
www.grupopremo.com

<https://3dcoil.grupopremo.com>
T: +34 951 231 320



GENERAL CATALOGUE 2018

CONTENTS

01. RFID COMPONENTS | PAG 24

1.1 RFID TRANSPONDERS

- 1.1.1 SINGLE AXIS TRANSPONDERS INDUCTORS | PAG 26
- 1.1.2 3-AXES TRANSPONDER INDUCTORS | PAG 62
- 1.1.3 NFC ANTENNAS | PAG 106

1.2 EMITTER ANTENNAS

- 1.2.1 SHORT RANGE | PAG 128
- 1.2.2 MIDDLE RANGE | PAG 158
- 1.2.3 LONG RANGE | PAG 172

1.3 TELECOILS

02. VR EM TRACKING SENSORS | PAG 192

- 2.1 Rx EM MOTION TRACKING SENSORS | PAG 199
- 2.2 Tx EM MOTION TRACKING ANTENNAS | PAG 212

03. WIRELESS CHARGING ANTENNAS | PAG 228

04. INDUCTIVE COMPONENTS | PAG 234

- 4.1 OBC TRANSFORMERS | PAG 238
- 4.2 DCDC TRANSFORMERS | PAG 242
- 4.3 3DPOWER | PAG 252
- 4.4 PFC CHOKES | PAG 262
- 4.5 HIGH-CURRENT DC CHOKE | PAG 270
- 4.6 COMMON MODE CHOKES | PAG 276
- 4.7 RESONANT CHOKES | PAG 294
- 4.8 GATE-DRIVE TRANSFORMERS | PAG 304
- 4.9 CURRENT TRANSFORMERS | PAG 314
- 4.10 FLYBACK TRANSFORMERS | PAG 320
- 4.11 PLC TRANSFORMERS | PAG 328

05. PLC COMPONENTS | PAG 334

- 5.1 INDUCTIVE COUPLERS | PAG 336
- 5.2 BLOKING FILTERS | PAG 350

	PAG
1. RFID TRANSPONDERS	10
INTRODUCTION	12
RAPID GUIDE	16
1.1 RFID TRANSPONDERS	24
1.1.1 SINGLE AXIS TRANSPONDER INDUCTORS	26
TP0502CAP- SMD Transponder Coil with CAP 5.4x2.8x2.9mm	New 28
TP0602 - Micro SMD Hard Ferrite Transponder Inductor 6.6x2.3x1.75mm	30
TP0602CAP- Micro SMD Hard Ferrite Transponder Inductor with CAP 7.1x2.9x2.05mm	New 32
TP0702 - SMD Hard Ferrite Mechanically Improved Transponder Inductor 7.7x3x2.5x2.2mm	34
TP0702U - SMD Transponder Coil with CAP 7.8x2.2x2.5mm MAX	36
TP0702UCAP - SMD Transponder Coil with CAP 8.7x2.7x3mm MAX	38
TP0702CAP - SMD CAP Hard Ferrite Mechanically Improved Transp. Inductor 8.7x2.7x3mm	40
TR1102 - SMD Ferrite Transponder Inductor 11x2.6x2.2mm	42
TR1102CAP - SMD CAP Ferrite Transponder Inductor 11.8x3.1x 2.6mm	44
SDTR1103 - SMD Drop Resistant Transponder Coil 11.8x3.6x2.5mm	46
SDTR1103CAP - SMD Drop Resistant Transponder 12.1x4.0x2.9mm	48
SDTR1103EM - SMD Transponder Coil 11.4x3.5x2.4mm	50
SDTR1103-HF1 - SMD Drop Resistant Transponder Coil High Frequency 11.8x3.6x2.5mm MAX	52
ZC1003 - 1003 SMD Z AXIS Coil low profile 10x10x3.2mm	54
ZAC1203 - Z AXES SMD Z AXIS Air Coil low profile 14.3x12x2.5mm	56
GENERAL SPECIFICATIONS TRANSPONDER INDUCTORS SMD PACKING	58
1.1.2 3-AXIS TRANSPONDER INDUCTORS (3DCOILS)TM	62
3DC06ISO - SMD 3D Coil 7x7x2.3 mm	64
3DC06EM - SMD Transponder Coil 7.9x7.9x2.45mm	New 66
3DC09LP - SMD 3D Coil 9.5x9.5x3.1 mm	68
3DC11LP - SMD 3D-Coil low profile 13x11.6x3.15 mm	70
3DC11LP - AOI - SMD 3D11 Coil low profile AOI 13x11.6x3.45 mm	72
3DC11LP - AOIF - SMD 3D11 Coil low profile AOI (foam option) 13x11.6x4.7 mm	74
3DC11LP - AOIC - SMD 3D11 Coil low profile AOI (cap option) 13x11.6x4.15 mm	76
3DC11LPCAP - SMD CAP 3D Coil low profile 13x12.8x3.7mm	78
3DC11F - SMD 3D Coil low profile 13x11.6x4.35mm	80
3DC11AOI-05DR - SMD 3D Coil 13x11.6x3.9mm Half Drumcore	82
3DC11-DR - SMD 3D Coil Drumcore 13x11.6x3.9mm	84

	PAG
3DC12EM - SMD 3D Coil 12.9 x 12.5 x 3.65mm Epoxy Moulding	86
3DC14EM - SMD Epoxy Molded 3D Coil 12x12x3.2mm	New 88
3DC14EM-ULP- SMD 3D Coil Ultra-Low-Profile 14x12x1.65mm	New 90
3DC14EMR-ULP SMD 3D Coil Ultra-Low-Profile 14x12x1.65mm	New 92
3DC1515 - SMD 3D Coil 17.5x15.5x3.8 mm	94
3DC15CAP - SMD CAP 3D Coil 17.5x16x4.1mm MAX	96
3DC15F - SMD 3D Coil 17.5x16.0x4.0 mm MAX	98
3DC12S - SMD 3D Coil Cap Adaptor 12.5x13.5x2.6mm	New 100
3DC13S - SMD 3D Coil Cap Adaptor 13.25x13.55x4.05mm	New 102
3DC14S - SMD Foam Label 3D Coil 13.25x13.55x4.05mm	New 104
1.1.3 NFC ANTENNAS	106
TC0502HF - NFC SMD antenna 5.2x2.4x2.7mm MAX	108
SDTR1103 - HF2 SMD Transponder for NFC applications 11.8x3.6x4.2.5mm	110
3DC15HF SMD 3D Coil 17.5x16.0x4.0 mm MAX	112
4DC15NF - 4D-Coil 125kHz-PKE	114
2D1D15 SMD 3D Coil 17.5x16.0x4.0mm MAX	116
ZC1003HF - SMD Z axis for NFC applications 10x10x3.2mm	118
1.2 EMITTER ANTENNAS	120
Introduction	122
Rapid Guide	124
1.2.1 SHORT RANGE	128
SEA - SMD Small Emitter Antenna 50.80x10.60x6.80mm	130
KGEA-SMD - Keyless Go Emitter Antenna SMD 75x15x6.3mm	132
KGEA-BFCR - Keyless Go Emitter Antenna Housing Plastic with Resin and Outside Connector 145x26x12mm	134
LFAD-BF/BFC - Diabolo antenna shape for smart entry system	New 136
KGEA-BFCWX - Keyless Go Emitter Antenna Potted with Unsealed/Sealed Connector 103x20x9mm	140
KGEA-BFCAM - Keyless Go Emitter Antenna Low Profile Potted Unsealed/ Sealed Connector 85x16.8x7mm	142
KGEA-HB LF interior antenna shape h bridge 116,75x20x23mm	144
KGEA-HBT	New 146
KGEA-HBB - Short Range Antenna LF for smart entry system. External housing + LPM (cover)	New 148
KGEA-HBW - Short Range Antenna LF for smart entry system. External housing (integrated connector) + PU-resin (filled)	New 150
KGEA-DHS - Door Handle antenna LF for smart entry system (+SWITCH)	New 152
KGEA-DHSL - Door Handle antenna LF for smart entry system (SWITCH and LED)	New 154

	PAG
1.2.2 MIDDLE RANGE	158
KGEA-MR - Middle Range Antenna LF for smart entry system	New 160
KGEA-MRHB - Middle Range Antenna LF for smart entry system	New 164
LFAD-MR - Middle Range Antenna LF for smart entry system	New 168
1.2.3 LONG RANGE ANTENNA	172
KGEA-AF/AFC - Long Range Flexible Antenna LF for smart entry system	174
KGEA-AFULR - Ultra Long Range Flexible Antenna LF for smart entry system	New 176
1.3 TELECOILS	178
INTRODUCTION	180
TC0502 - SMD Telecoil 5.1x2.3x2.6mm	182
TP0602-TC - Micro SMD Hard Ferrite Telecoil 6.6x2.3x1.75mm	184
TC0902 - SMD Telecoil 9x1.5x2mm	186
TC1102 - SMD Telecoil 10.5x1.4x2mm	188
GENERAL SPECIFICATIONS TELECOIL PACKING	190
2. VR EM TRACKING SENSORS	192
INTRODUCTION	194
2.1 Rx EM MOTION TRACKING SENSORS	199
3DV06 - SMD 3D Coil 7x7x2.3mm	New 200
3DV09 - SMD 3D Coil 9.5x9.5x3.2mm	New 202
3DV11AOI - SMD 3D Coil 11.6x11.6x3.2mm	New 204
3DV15 - SMD 3D Coil 15.6x15.6x3.8mm	New 206
3DCC08 - 3D Coil Cube receiver sensor for VR magnetic tracking system 16.5x14.8x11.8mm	New 208
3DCC10 - 3D Coil Cube receiver sensor for VR magnetic tracking system 17.4x15.2x13.9mm	New 210
2.2 Tx EM MOTION TRACKING ANTENNAS	212
3DCC20 - 3D Coil Cube emitter for VR magnetic tracking system 30.7x30.75x30.7mm	New 214
3D20LW - 3D Coil Cube emitter for VR magnetic tracking system 30.7x30.7x30.2mm	New 216
3DCC28 - 3D Coil Cube emitter for VR magnetic tracking system 39.5x39.5x38.6mm	New 218
3D28LW - 3D Coil Cube emitter for VR magnetic tracking system 39.5x39.5x38.6mm	New 220
3DCD90 - 3D Electromagnetic Tracking Disc 105x20mm	New 222
3DTX08 - 3D Coil Cube receiver sensor for VR magnetic tracking system 16.5x14.8x11.8 mm	New 224
3DTX10 - 3D Coil Cube receiver sensor for VR magnetic tracking system 17.4x15.2x13.9 mm	New 226

	PAG
3. WIRELESS CHARGING ANTENNAS	228
WC-TX-001-90K - Ground assembly flexible-pad for the wireless power transfer in the electric vehicles.	New 230
WC-RX-002-90K - Vehicle assembly flexible-pad for the wireless power transfer in the electric vehicles.	New 232
4. INDUCTIVE COMPONENTS	234
4.1 OBC TRANSFORMERS	236
BC3.5LHB0.5T - LLC Half-Bridge 1:2 Transformer 3.5kW 100-250kHz	New 238
BC3.5LFB1.4 - LLC Full-Bridge 1.4:1 Transformer 3.5kW 70-200kHz	New 240
4.2 DCDC TRANSFORMERS	242
DCDC414-002 - ZVS PSFB Transformer 3kW 100kHz 20:1+1	New 244
DCDC214-002 - ZVS PSFB Transformer 2,5kW 100kHz 30:1+1	New 246
DCDC2400-001 - Push-Pull Transformer 2kW 100kHz 1+1:12	New 248
NPT-001 - Power Transformers for HEV Systems	250
4.3 3DPOWER	252
3DP-3kWHVHV-001 - Full Bridge LLC Transformer 270μH+ Resonant Choke 27μH	New 245
3DP-3kWHVHV-002 - Full Bridge LLC Transformer 270μH + Resonant Choke 27μH	New 256
3DP-3kWHVLV-001 - Full Bridge LLC Transformer 950 μH + Resonant Choke 21 μH + Parallel Inductor 50 μH	New 258
3DP-7kWHVHV-001 - Full Bridge LLC Transformer 160 μH + Resonant Choke 13 μH	New 260
4.4 PFC CHOKES	262
PFC-001 - PFC Choke 310μH / 17Arms / 6App / 67kHz	264
PFC5260-8H - PFC Choke 260μH / 8Arms / 15Apk / 100kHz	New 266
PFCA500-8H - PFC Choke 500μH / 8Arms / 15Apk / 90kHz	New 268
4.5 HIGH CURRENT DC CHOKES	270
HPC2R0-230 - High Power Planar Choke 2μH / 230Adc	New 272
HPC1R0-180 - High Power Planar Choke 1μH / 180Adc	New 274

	PAG
4.6 COMMON MODE CHOKES	276
CMCN4R0-12H - Common Mode Choke 2x4mH / 12Adc	New 278
CMCF2R0-16V - Common Mode Choke 2x2mH / 16Arms	New 280
CMCF0R9-16V - Common Mode Choke 2x0.9mH / 16Adc	New 282
CMCN4R3-16H3 - CMC 3P+N 4x4.3mH / 16+16+16+48Arms	New 284
CMCN1R0-36V - Common Mode Choke 2x1mH / 36Adc	New 286
CMCN25R-16V - Common Mode Choke 2x25mH / 16Arms	New 288
CMCN10R-16V - Common Mode Choke 2x10mH / 16Arms	New 290
CURVES OF PERFORMANCES	292
4.7 RESONANT CHOKES	294
RINDZ14R-14 - ZVS Resonant Inductor 14μH 14Apk 100kHz	New 296
RINDLS6R3-30T - LLC Serial Resonant Inductor 6.3μH/30Apk 100-250kHz	New 298
RINDLS22R-29 - LLC Serial Resonant Ind. 22μH/29Apk 70-200kHz	New 300
RINDLP36R-5 - LLC Parallel Resonant Ind. 36μH/5Apk 100-250kHz	New 302
4.8 GATE-DRIVE TRANSFORMERS	304
GDAU-001 - Isolated SMD Gate Drive Transformer up to 150Vμs	306
GDAU-002 - Gate-Drive Transformer 1:1:5 16Vus	New 308
GDAU-003 - Gate-Drive Transformer 2:1 200Vus	New 310
GDAU-004 - Push-pull Gate-Drive Transformer 1:1:1.3:1.3 2x11Vus	New 312
4.9 CURRENT TRANSFORMERS	314
CSAU-100 - Automotive HEV Current Transformer up to 35 Amps	316
CS-35A - Automotive EV/HEV Isolated SMD Current Transformer up to 35Amps	318
4.10 FLYBACK TRANSFORMERS	320
FLYT-001 - Flyback Tr. 5W/100kHz 10:3:7+4:10+4	New 322
FLYT-002 - Flyback Tr. 16W/100kHz 5:9:9:9:9	New 324
FLYT-003 - Flyback Tr. 5W/100kHz 7:5:7:5:5:5	New 326
4.11 PLC TRANSFORMERS	328
PLC-001 - 2-30MHz 1:1:1 6μH	New 330
PLC-002 - 2-30MHz 1:1 15μH	New 332

	PAG
5. PLC COMPONENTS	334
5.1 INDUCTIVE COUPLERS	336
INTRODUCTION	338
MICU 300A - Medium Voltage Inductive Coupling Units	340
MICU 300A-S/LF - MV ICU-300A / Low Freq. (30-500kHz)	342
MICU 300A OH/LF - MV ICU 300A Low Freq.(30-500kHz) Outdoor Overhead	344
MICU 300A-W/LF - MV ICU/Low Freq. (30-500kHz) Underground WR Immersion	348
5.2 BLOCKING FILTERS	350
INTRODUCTION	352
BF (PLC BLOCKING FILTERS-SINGLE PHASE)	354
CONTACT	358

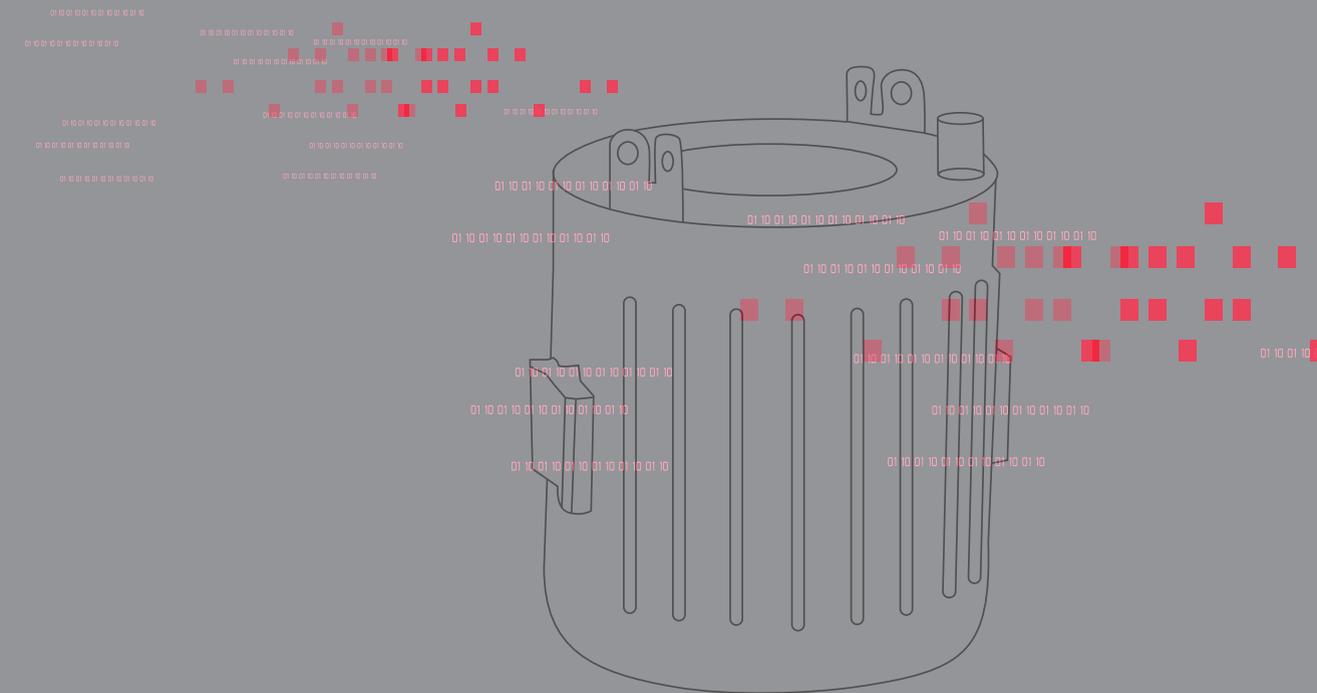
05

PLC COMPONENTS



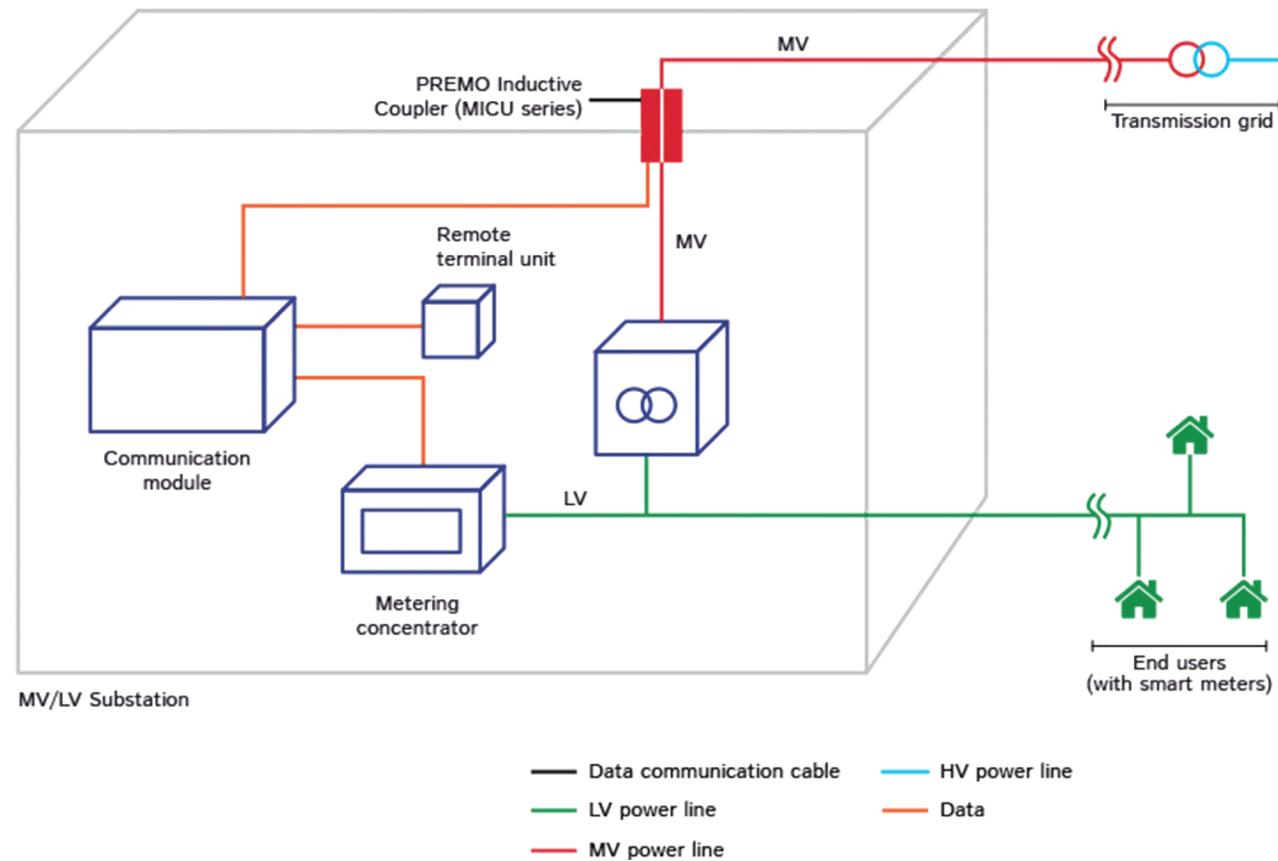
5.1

PLC COMPONENTS INDUCTIVE COUPLERS

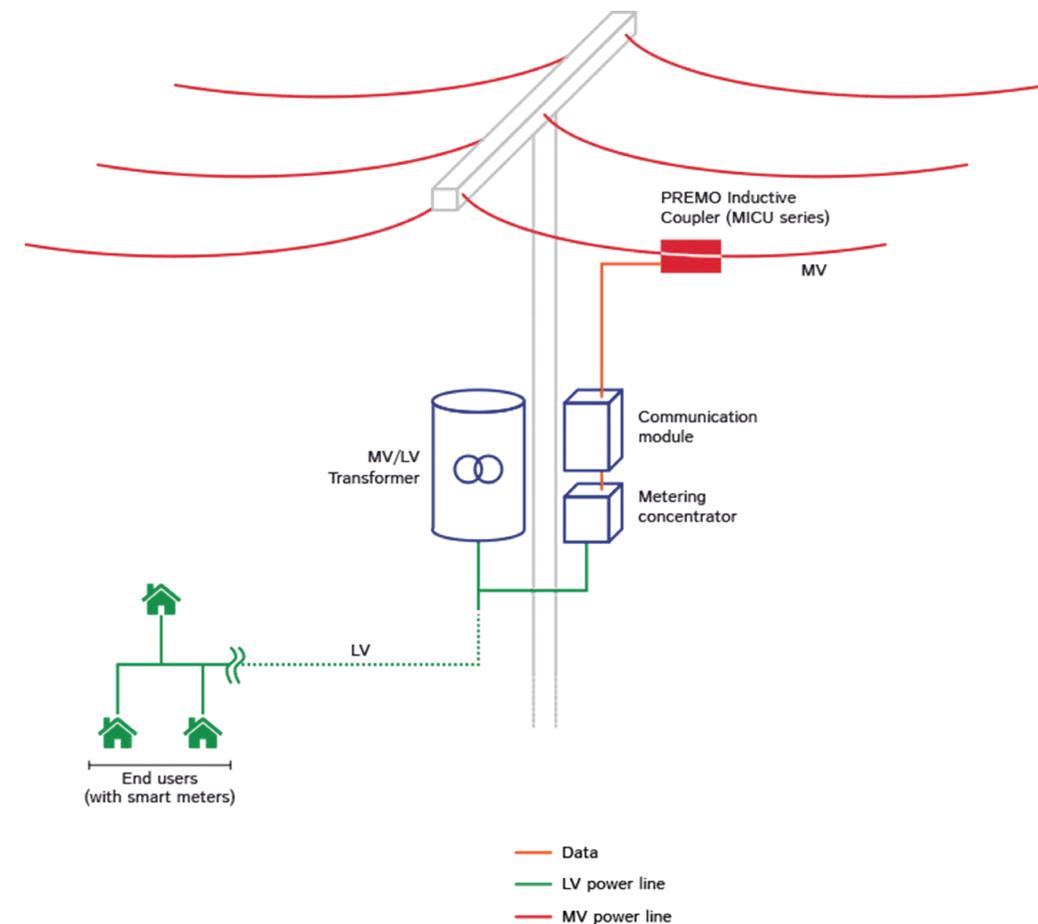


>> MICU

Inductive coupler in MV/LV substation



Inductive coupler in MV/LV overhead transformer

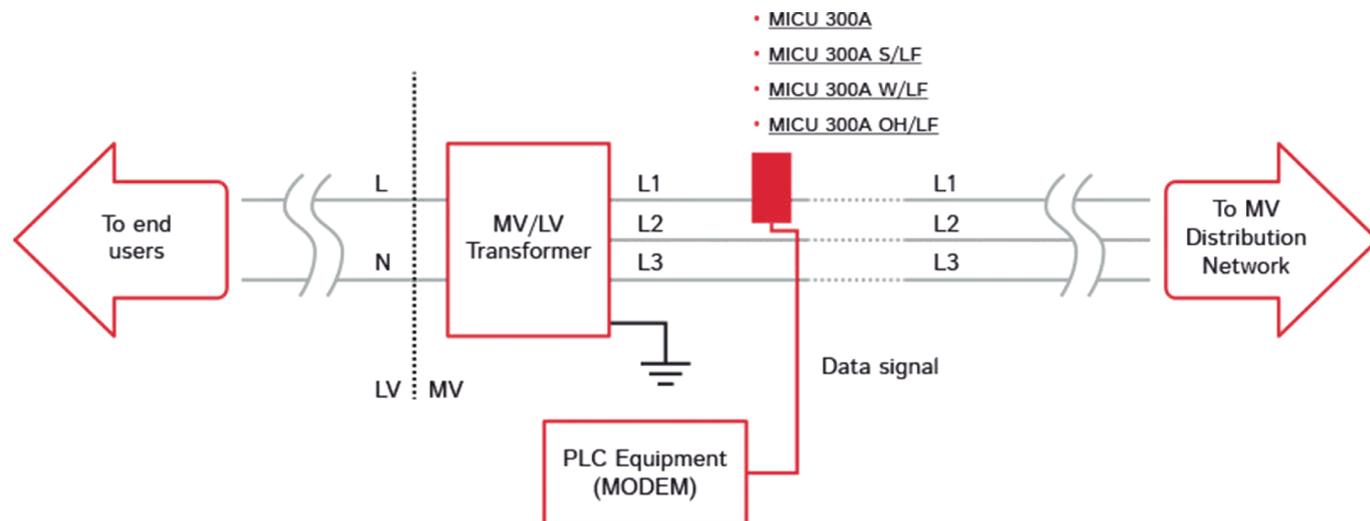


In smart grids inductive couplers are playing a big role as it's transmit the communication signals between powerline and PLC data transceiver without introducing any new wires or cables, being a competitive solution compared with capacitive coupling.

PREMO medium voltage inductive coupler family (MICU 300A-S/LF/OH/W-LF) have been developed for installation in smart grids deployments that requires different levels of isolation, in overhead medium voltage installation (>24kV), or inside cabinets of MV/LV substations (>4.7kV). These compacts and weightless solution is fully compatible with mature and consolidated PRIME PLC standard and G3 popular standard, managed by the G3-PLC Alliance.

These family of products support CENELEC band (Europe) and FCC (USA), which permits the use of frequencies less than 500kHz for narrow band PLC.

PREMO inductive couplers are made with high permeability and performance materials that avoid saturation problems at high currents, allowing long reading distances between MV base transformers. This helps to increase the broadband and to improve the communication efficiency as it offers low insertion losses: $12 \pm 2\text{dB}$ (@100-250kHz); $5 \pm 2\text{dB}$ (@250kHz-600kHz). These family products offer different connectors (including standards BNC connectors, and also IP67 waterproof connectors).



MICU 300A

Medium Voltage Inductive Coupling Units

PLC COMPONENTS / INDUCTIVE COUPLERS



FEATURES

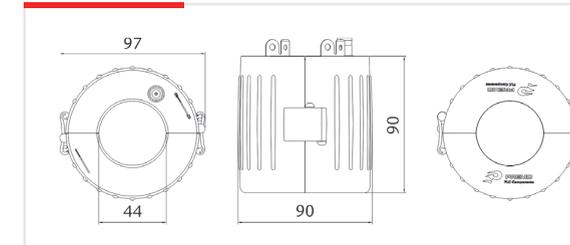
- › High current solution made with high permeability high performance nanocrystalline material avoids saturation problems at high currents.
- › Low insertion losses $-4\text{dB} \pm 2\text{dB}$ (@2MHz a 40MHz range).
- › More electrical safety: High insulation: 5 kV.
- › Compact equipment: BNC connector integrated in the coupler (other connections available under request).

01 CHARACTERISTICS

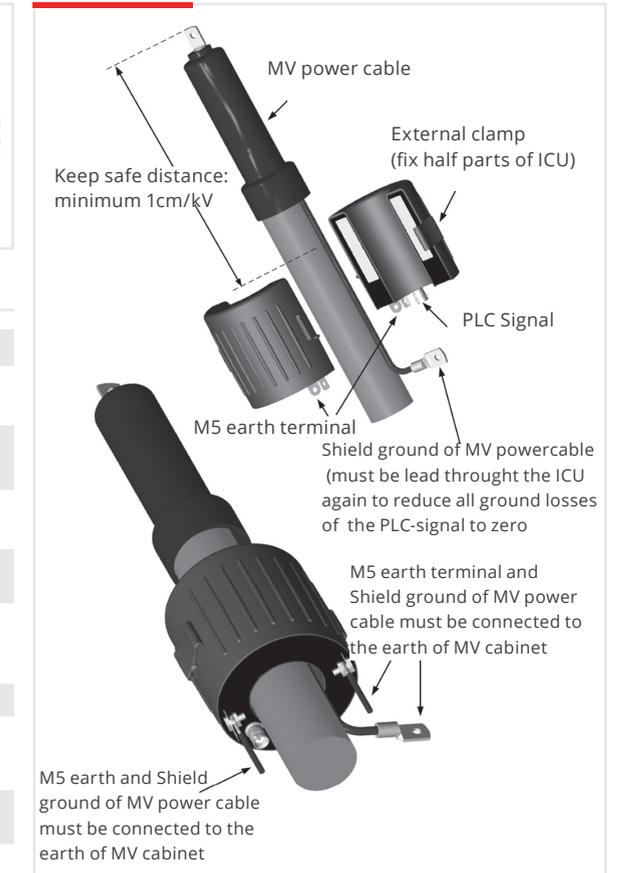
- › Inner diameter: 44mm
- › Height: 90mm
- › Height including ground connector: <115mm
- › Connection to PLC-modern: female BCN connector
- › Connection to Earth: M5 screw
- › Typical installation time: 10 minutes
- › Operating conditions: indoor services

02 SPECIFICATIONS

DIMENSIONS (mm)



INSTALLATION



ELECTRICAL SPECIFICATIONS

Nominal current	300 A
Rated Voltage	Only depends on the insulation evel of the cable
Rated AC withstand voltage	Only depends on the insulation evel of the cable
Rated lightning withstand voltage (1.2/50s)	Only depends on the insulation evel of the cable
Insulation resistance	Only depends on the insulation evel of the cable
Partial discharge level at 1.2 UN	No discharges possible, coupler is completely at ground potential
Nominal impedance	-12dB±2dB @100 to 250 kHz
Coupling side	20 to 50
Equipment side	50
Average power in permanence	> +40 dBmW
Harmonic distortion and intermodulation	< -60 dB
Dielectric strength	5 kV
Working temperature	-20°C to 60°C
Storage temperature	-40°C to 85°C
Weight	<2.5 kg
Climatic category	25/100/21 according to IEC 60068-1
Safety isolation	According to IEC 60950

MICU 300A-S/LF

Low Frequency (30-500kHz)

PLC COMPONENTS / INDUCTIVE COUPLERS



APPLICATIONS

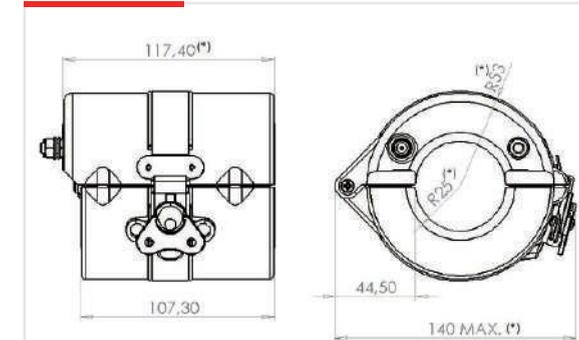
- › AMR (Automatic Meter Recording)
- › Automation of Electric Power Distribution System
- › Outdoors Bare Overhead Power Lines

01 CHARACTERISTICS

- › High current solution made with high permeability high performance materials avoid saturation problems at high currents
- › Low insertion losses 12dB±2dB (@100- 250kHz) ; 5dB±2dB (@250-600kHz)
- › More electrical safety: High insulation > 4.7 kV
- › Compact equipment: BNC connector integrated in the coupler (other connections available under request)
- › Water resistant (IP65)

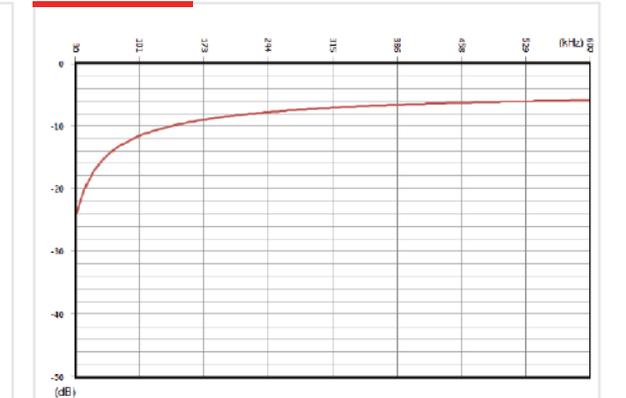
02 SPECIFICATIONS

DIMENSIONS (mm)



- › Tolerances unless specified: ±1,0mm
- › Critical dimensions (*)

ATTENUATION (DB) IN WORKING FREQUENCY RANGE



ELECTRICAL SPECIFICATIONS

Nominal current	300 A	PLC BAND
Rated Voltage	Only depends on the insulation level of the cable	EUROPE
Rated AC withstand voltage	Only depends on the insulation level of the cable	CENELEC B (95-125kHz)
Rated lightning withstand voltage (1.2/50s)	Only depends on the insulation level of the cable	CENELEC C (125-140kHz)
Partial discharge level at 1.2 U _N	Only depends on the insulation level of the cable	CENELEC D (140-148.5kHz)
Insulation resistance		USA
Transmission frequency range and attenuation	-12dB±2dB @100 to 250 kHz -5dB±2dB @250 to 600 kHz	FCC (10kHz-490kHz)
Nominal impedance	Coupling side: 20 to 50 Ω Equipment side: 50 Ω	
Average power in permanence	> +40 dBmW	
Harmonic distortion and intermodulation	< -60 dB	
Dielectric strength	>4.7kV	
Working temperature	-20°C to 60°C	
Storage temperature	-40°C to 85°C	
Weight	<2.5 kg	
Climatic category	25/100/21 according to IEC 60068-1	
Safety isolation	IEC 60950	
Normative	IEC 61869	

MICU 300A OH/LF

Low Freq. (30-500kHz)

PLC COMPONENTS / INDUCTIVE COUPLERS



APPLICATIONS

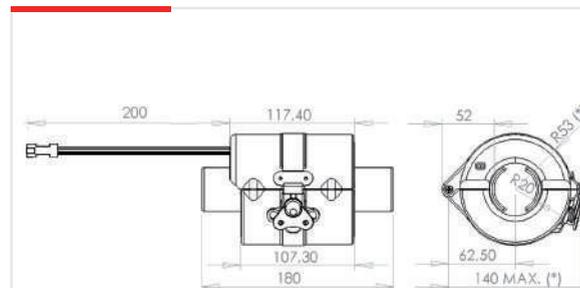
- › AMR (Automatic Meter Recording)
- › Automation of Electric Power Distribution System
- › Outdoors Bare Overhead Power Lines

01 CHARACTERISTICS

- › High current solution made with high permeability high performance materials avoids saturation problems at high currents
- › Low insertion losses 12dB±2dB (@100- 250kHz) ; 5dB±2dB (@250-600kHz)
- › More electrical safety: High insulation > 24 kV
- › Compact equipment: IP67 waterproof cable assembly integrated in the coupler (other connections available under request)
- › Water resistant (IP65)

02 SPECIFICATIONS

DIMENSIONS (mm)



- › Tolerances unless specified: ±1,0mm
- › Critical dimensions (*)

ATTENUATION (DB) IN WORKING FREQUENCY RANGE



ELECTRICAL SPECIFICATIONS

Nominal current	300 A	PLC BAND
Rated Voltage	Rated voltage up to 24kV	EUROPE
Rated AC withstand voltage	Rated voltage up to 24kV	CENELEC B (95-125kHz)
Rated lightning withstand voltage (1.2/50s)	Rated voltage up to 24kV	CENELEC C (125-140kHz)
Partial discharge level at 1.2 U _N	Rated voltage up to 24kV	CENELEC D (140-148.5kHz)
Insulation resistance	Rated voltage up to 24kV	USA
Transmission frequency range and attenuation	-12dB±2dB @100 to 250 kHz - 5dB±2dB @250 to 600 kHz	FCC (10kHz-490kHz)
Nominal impedance	Coupling side: 20 to 50 Ω Equipment side: 50 Ω	
Average power in permanence	> +40 dBmW	
Harmonic distortion and intermodulation	< -60 dB	
Dielectric strength	>24kV	
Working temperature	-20°C to 60°C	
Storage temperature	-40°C to 85°C	
Weight	<2.5 kg	
Climatic category	25/100/21 according to IEC 60068-1	
Safety isolation	According to IEC 60950	
Normative	IEC 61869	

MICU 300A W/LF

MV ICU / Low Freq. (30-500kHz)
Underground WR Immersion

PLC COMPONENTS / INDUCTIVE COUPLERS



APPLICATIONS

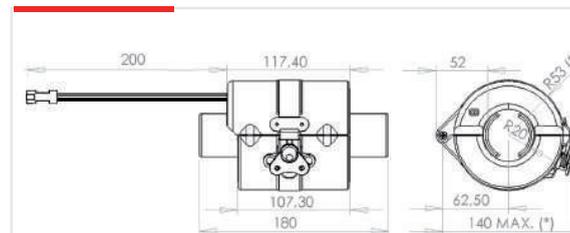
- › Automatic Metering Reading
- › Powerline Monitoring Systems
- › Automation of Electric Power Distribution
- › Overhead Powerlines

01 CHARACTERISTICS

- › High current solution made with high permeability high performance materials avoid saturation problems at high currents
- › Low insertion losses 12dB±2dB (@100-250kHz) ; 5dB±2dB (@250-600kHz)
- › More electrical safety: High insulation > 4.7 kV
- › Compact equipment: BNC connector integrated in the coupler (other connections available under request)
- › Waterproof (IP67)

02 SPECIFICATIONS

DIMENSIONS (mm)



- › Tolerances unless specified: ±1,0mm
- › Critical dimensions (*)

ATTENUATION (DB) IN WORKING FREQUENCY RANGE

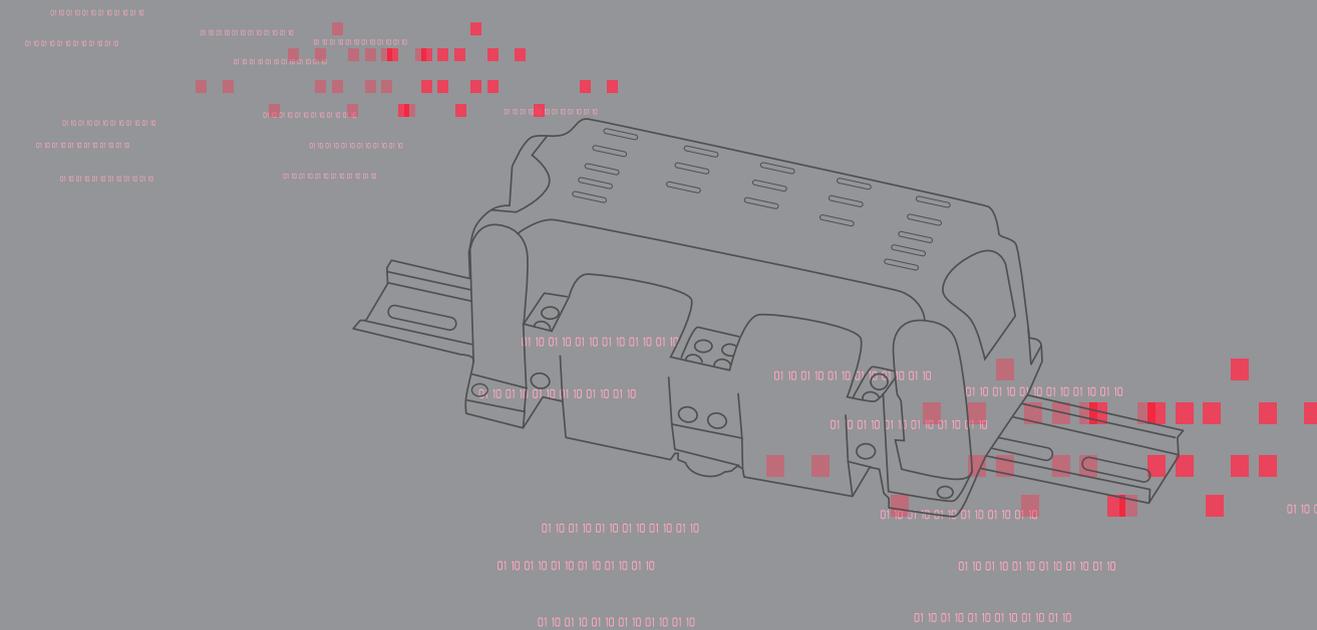


ELECTRICAL SPECIFICATIONS

Nominal current	300 A	PLC BAND
Rated Voltage	Only depends on the insulation level of the cable	EUROPE
Rated AC withstand voltage	Only depends on the insulation level of the cable	CENELEC B (95-125kHz)
Rated lightning withstand voltage (1.2/50s)	Only depends on the insulation level of the cable	CENELEC C (125-140kHz)
Partial discharge level at 1.2 U _N	Only depends on the insulation level of the cable	CENELEC D (140-148.5kHz)
Insulation resistance	Only depends on the insulation level of the cable	USA
Transmission frequency range and attenuation	-12dB±2dB @100 to 250 kHz -5dB±2dB @250 to 600 kHz	FCC (10kHz-490kHz)
Nominal impedance	Coupling side: 20 to 50 Ω Equipment side: 50 Ω	
Average power in permanence	> +40 dBmW	
Harmonic distortion and intermodulation	< -60 dB	
Dielectric strength	>4.7kV	
Working temperature	-20°C to 60°C	
Storage temperature	-40°C to 85°C	
Weight	<2.5 kg	
Climatic category	25/100/21 according to IEC 60068-1	
Safety isolation	According to IEC 60950	
Normative	IEC 61869	

5.2

PLC COMPONENTS BLOCKING FILTERS

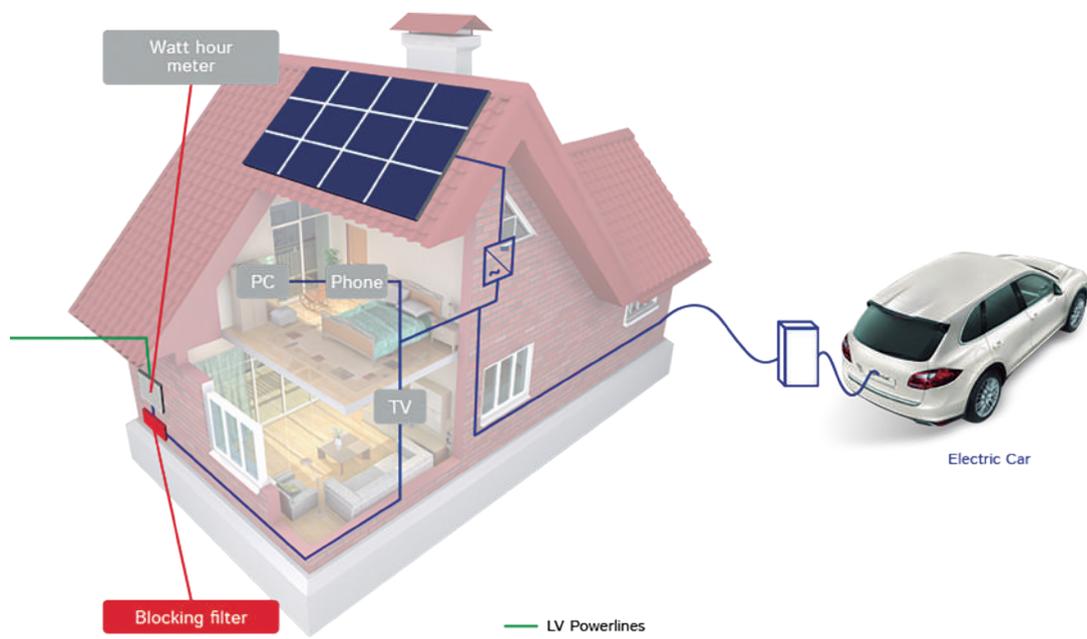


Nowadays energy distribution grids are becoming more complex systems. A reliable and efficient management of these systems involve a deep managing and control of the power grid elements (software and hardware) to allow its balanced and reliable operation.

Smart grids means that not only the hardware connection for energy distribution is needed; also smart elements for network management are getting involved in this new paradigm. These elements include elements for load balance, management of generation/consumption peaks, fails and blackout proactive prevention, remote monitoring of consumption (Automatic Remote Metering), managing and connection of backup energy storages or energy generation stations (renewable energy systems – solar panels, wind-mills, etc.-)

In smart grids inductive couplers are playing a big role as it's transmit the communication signals between powerline and PLC data transceiver without introducing any new wires or cables, being a competitive solution compared with capacitive coupling.

Filters



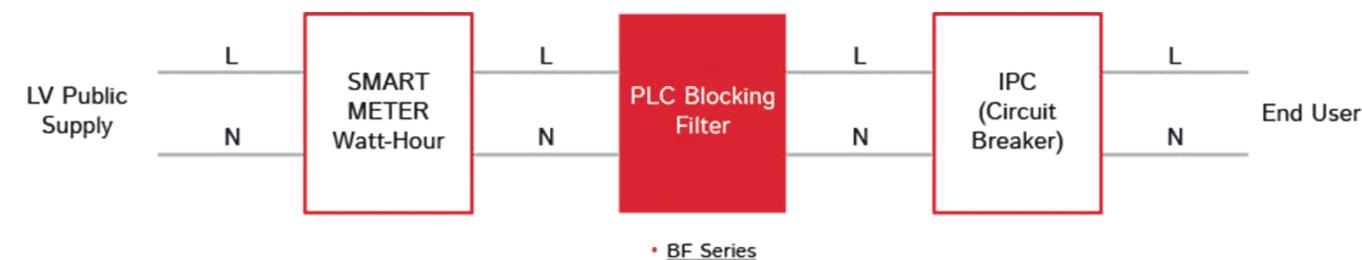
PREMO Group is introducing a new generation of blocking filters for smart grid applications. The innovative PREMO BF Series allows a proper and more reliable PLC Communication.

The challenge:

All the European utility companies are changing Old Electricity meter to Smart meters which works by PLC systems using low frequency signals, such as PRIME (42-89Khz), G3 (35-91Khz) & CENELEC Band A (9-95Khz). The noise is coming from the end-user equipments via household wiring which is too close to PLC frequency ranges. It blocks the communication between Smart meters and Concentrators. Also the noise is transmitted immediately to the rest of the smart meters nearby and can even affect more distant smart meters in a more attenuated way.

PREMO is offering a new generation of blocking filters with 3 kind of attenuation level for reducing all kind of noise from the end user equipments. The BF-xx-MM models are designed especially for smart meters with Re-connection mechanism which has auto connect / disconnect based on load impedance.

ing standards BNC connectors, and also IP67 waterproof connectors).



BF

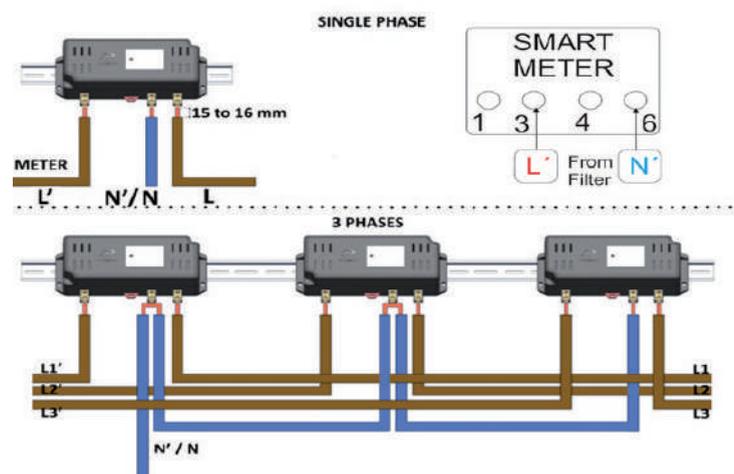
Plc Blocking filters-single phase

PLC COMPONENTS / BLOCKING FILTERS

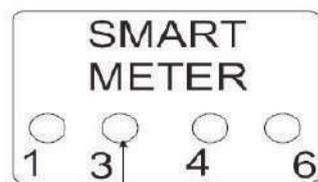


- › Specially designed for Smart meters which comply with PLC G3 , PRIME & CENELEC Band A technology
- › Designed to meet according to EN 50065-1 regulations
- › MM models Support Smart meters with re-connection mechanism.
- › Safe terminal with double screws connection
- › Good attenuation level without GROUND or PE system and designed with 3 different level of attenuation
- › Patent Pending for BF-xx-MM series

01 CONNECTION DIAGRAM



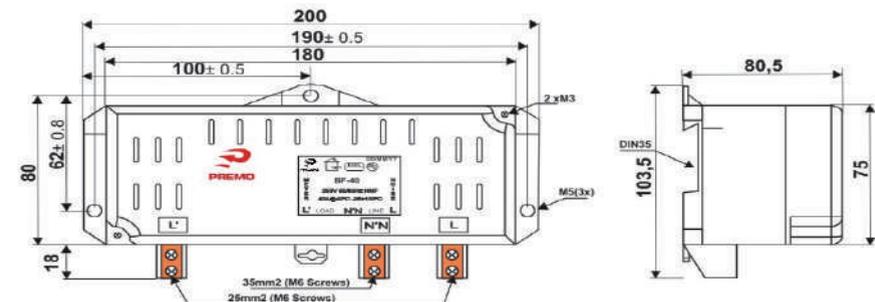
- › Applicable for BF-40 / BF-40-MM and BF-40S / BF-40S-MM



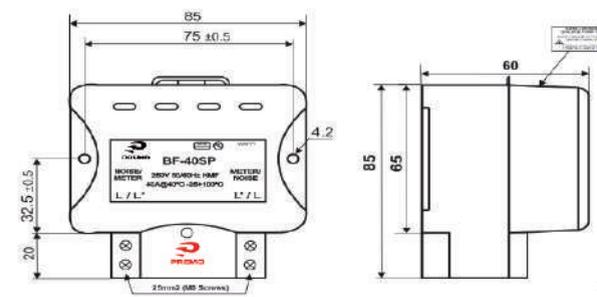
› Applicable for BF-40SP & BF-40SG3

02 SPECIFICATIONS

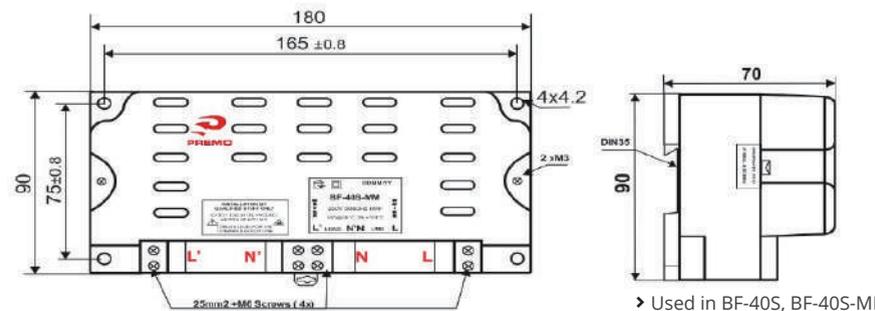
DIMENSIONS (mm)



› Used in BF-40, BF-40-MM



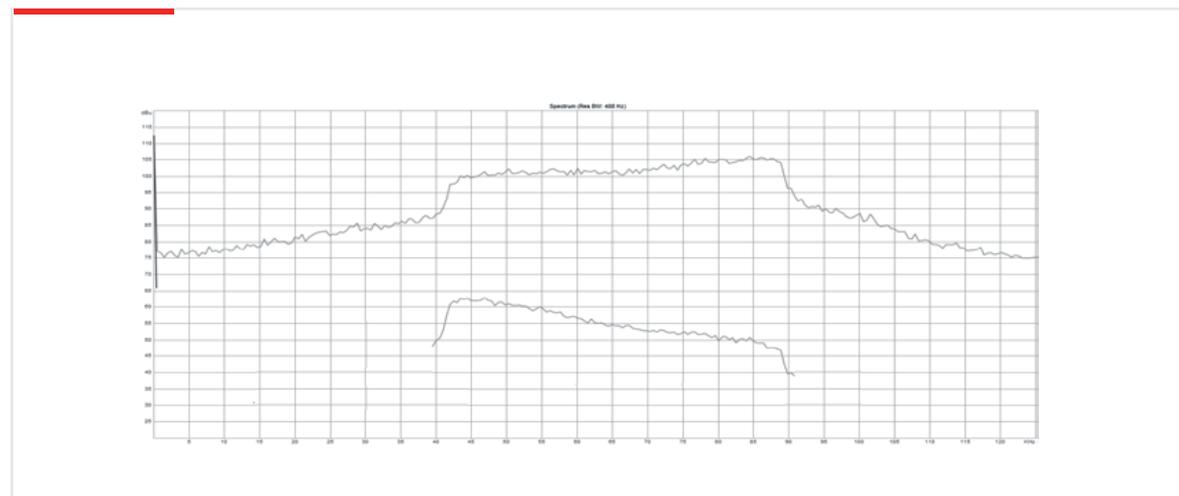
› Used in BF-40SP, BF-40SG3



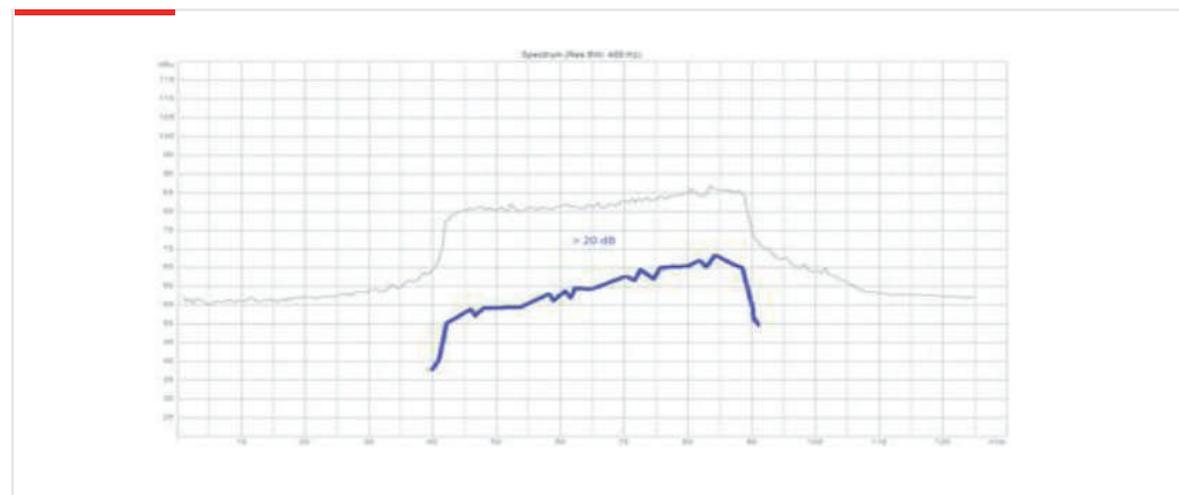
› Used in BF-40S, BF-40S-MM

Note: PREMO BF Series with IP30, because our products designed to fit inside of Meter cabinets. In this case, Meter cabinet has better Ingress Protection (IP54 to IP67), so Filter is not necessary to have better Ingress Protection thus avoid high cost for the filter.

EXAMPLE- METER WITH FILTER- NORMAL VERSION



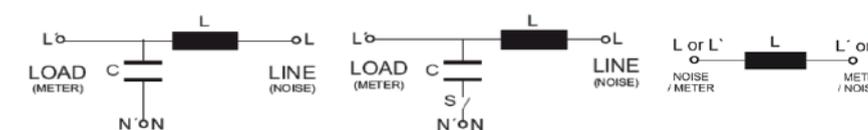
EXAMPLE- METER WITH FILTER-MM VERSION



PARAMETERS

PARAMETERS	VERY HIGH PERFORMANCE TYPE	HIGH PERFORMANCE TYPE	GENERAL TYPE
------------	----------------------------	-----------------------	--------------

Equivalent electric schematic



Operating Voltage (Max)	250Vac (275Vac)	250Vac (275Vac)	250Vac (275Vac)
Operating Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Operating Current at ambient	40A @ 40°C	40A @ 40°C	40A @ 40°C
Supporting current for Hours & Min's	45A and 63A	45A and 63A	45A and 63A
PREMO Part Number	BF-40 & BF-40-MM	BF-40S & BF-40S-MM	BF-40SP & BF-40SG3
Operating Temperature Range	(-25°C to +100°C)	(-25°C to +100°C)	(-25°C to +100°C)
Storage Temperature Range	(-25°C to +85°C)	(-25°C to +85°C)	(-25°C to +85°C)
Filter Characteristics (CENELEC Band)	9 to 150KHz (Band A,B,C,D)	9 to 150KHz (Band A,B,C,D)	35 to 90KHz (Band A)
Attenuation Level (mainly 35- 90Khz)	> 40 dB & > 20dBfor-MM	> 30 dB & > 18dB for-MM	>20 dB
High Surge Protection (Phase- Neu.)	10000 A, 8/ 20µs	10000 A, 8/ 20µs	NA
MTBF at 25°C, 230Vac, 40A (ref.)	Minimum 20 years	Minimum 20 years	Minimum 20 years
Dielectric strength for 60 sec's	Phase-Housing = 2.5KVac	Phase-Housing = 2.5KVac	Phase-Housing = 2.5KVac
without surge protection	Phase-Neutral = 1.7KVdc	Phase-Neutral = 1.7KVdc	Phase-Neutral = 1.7KVdc
Leakage Current	Nil (no PE insisted)	Nil (no PE insisted)	Nil (no PE insisted)
Installing in 3 Phase system	Max. Voltage P-P = 480Vac	Max. Voltage P-P = 480Vac	NA
Dimensions in mm	200L x 103W x 80H	180L x 90W x 70H	85L x 85W x 60H
Weight Approx. In Kg +/-	< 2.2 Kg	< 1.5Kg	< 0.6Kg
Ingress Protection	IP 30	IP 30	IP 30
Mounting Style	Din-Rail 35 + Panel	Din-Rail 35 + Panel	Panel
Safety Regulation Followed	EMC Directive 2004/108/EC, UL1283, EN60939-2, IEC 60950-1 & RoHS 2011/65/EU		
Suitable for Compliance	EN 50065-1	EN 50065-1	EN 50065-1



PREMO HEADQUARTERS

SPAIN

Severo Ochoa 47
Parque Tecnológico de Andalucía
29590 Campanillas - Málaga - Spain



T. +34 951 231 320



www.grupopremo.com
<https://3dcoil.grupopremo.com>



info@grupopremo.com



PREMO WORLDWIDE

Find your local partner within PREMO's global sales network at: <https://www.grupopremo.com/tiendas>

MANUFACTURING PLANTS

CHINA

PREMO Electronic Wuxi
Building No.22, No.15, Hanjiang Road
Xinwu District, Wuxi
214028, Jiangsu, China
Tel.: +86 510 687 51 888

MOROCCO

PREMO MEDITERRANEE S.A.R.L.
Ilot 11 lot n 4
90000 - ZONE FRANCHE D'EXPORTATION
TANGER (Morocco)
Tel. +212 5 39 39 45 41/42

VIETNAM

PREMO Vietnam Co. Ltd
Lot 21 Dien Nam-Dien Ngoc IZ
Dien Ngoc Ward, Dien Ban Town,
Quang Nam Province (Vietnam)
Tel: 084 510 394 9567

R&D CENTERS

SPAIN

MALAGA

PREMO S.A.
C / Severo Ochoa 47 PTA
29590 Campanillas, Málaga - España
Teléfono: +34 951 23 13 20

BARCELONA

PREMO S.A.
C/ PEDRO i PONS, 9-11, Floor12, Doors 1-2
08034 Barcelona, Spain
Teléfono: +34 934 098 980

VIETNAM

PREMO Vietnam Co. Ltd
Lot 21 Dien Nam-Dien Ngoc IZ
Dien Ngoc Ward, Dien Ban Town,
Quang Nam Province (Vietnam)
Tel: 084 510 394 9567

USA

PREMO USA, Inc.
17451 Bastanchury Rd, Suite 100B
Yorba Linda, CA 92886

FRANCE

PREMO France S.A.R.L.
Centre d'Affaires LE CONCORDE 24, rue Lamartine
38320 EYBENS (Grenoble) - Francia
Tel.: +33 (0) 4.56.38.13.37 GSM: +33 (0) 6 37 28 62 46

KOREA

PREMO Korea Co., Ltd.
Room 313, 3rd Floor, ACE Chyeonggye Tower
Poil dong 657-2, Uiwang-si
16006, Gyeonggi-do, South Korea
M.: +82 10 3489 7222

GERMANY

PREMO Germany
Schwabacher Strasse 512
ME2.21 2nd floor
Fuerth D-90763
Germany



PREMO S.A.

3DCoil™, 3DPower™, 4DCoil™, PREMO™ are registered **TRADE MARKS of PREMO S.A.** protected under Spanish and International Trade Mark Association.

CONTACT US

If you have **any questions on our products**, need technical support or have any suggestions or criticism on this book please contact us:



PREMO SPAIN

Severo Ochoa 47
Parque Tecnológico de Andalucía
29590 Campanillas - Málaga - Spain



T. +34 951 231 320



www.grupopremo.com
<https://3dcoil.grupopremo.com>



info@grupopremo.com