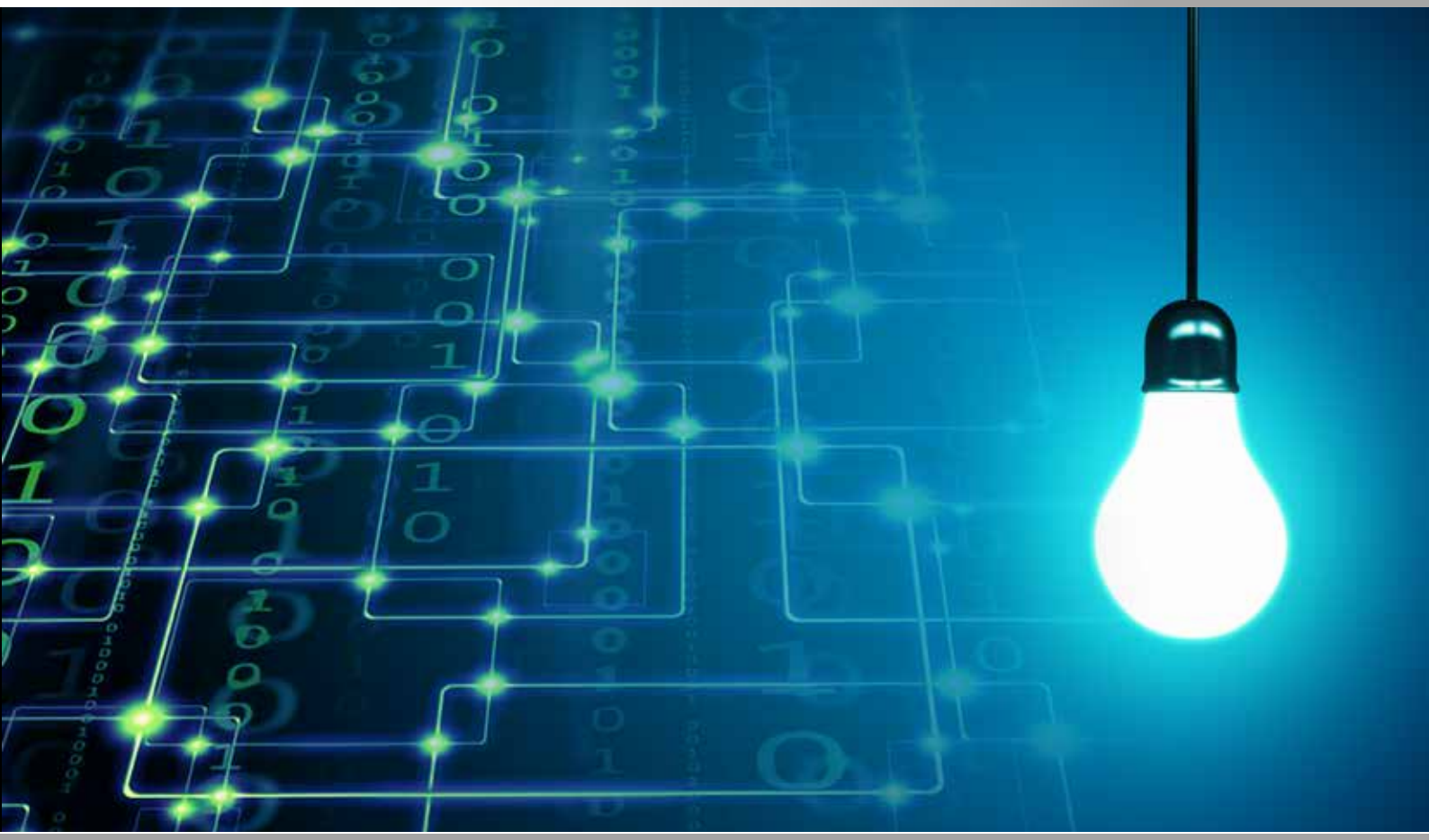
General Catalogue



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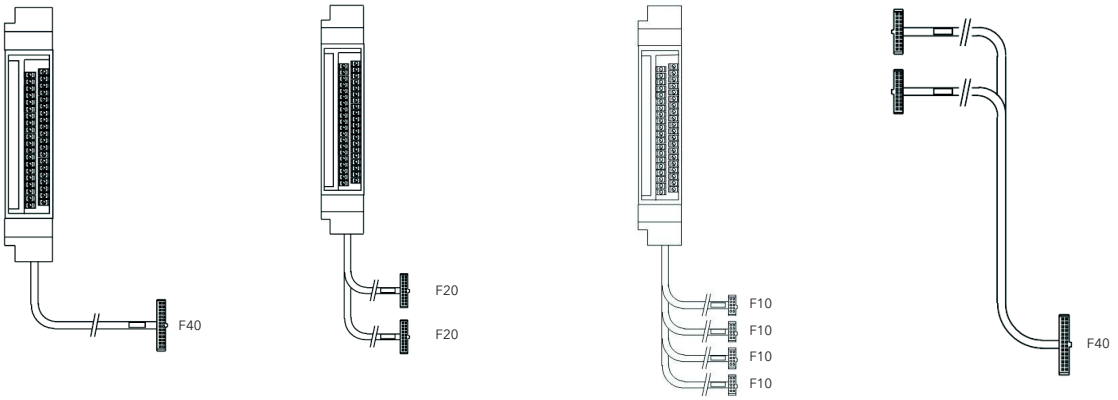
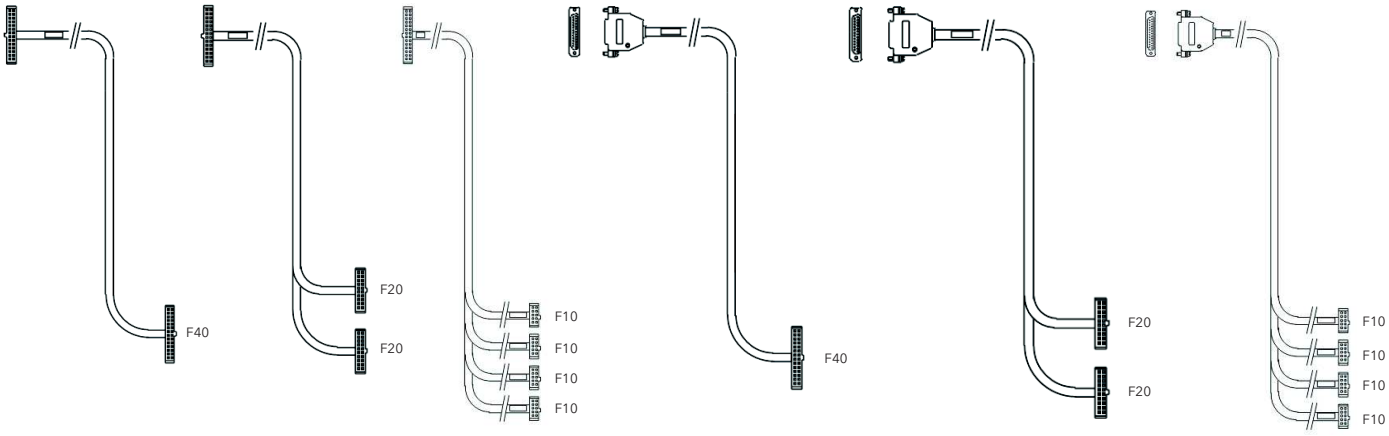
ENERGY MANAGEMENT DEVICES

Pre-Wired Cables for I/O Connections From PLC to Relay/Connection Modules

PLC/CN





8/16/32 I/O Modules

Note:
For codes and schemes, ask for specific documentation indicating PLC/CN manufacturer name and its I/O board card

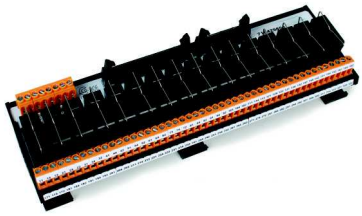
Modules 32 Inputs/Outputs for PLC

Relay Module 32 Output 12 A - 1 SC

Code	Sign	Output	Dim. (mm)
71E036034	**EMF4032RZ**	250 V AC-30 V DC	284x118x57

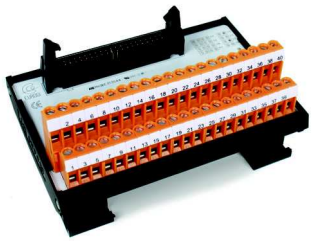
Relay Module 16 Output 12 A - 1 SC + Expansion 16 Output

Code	Sign	Output	Dim. (mm)
71E036030	**EMF4016RZ**	250 V AC-30 V DC	225x82x57



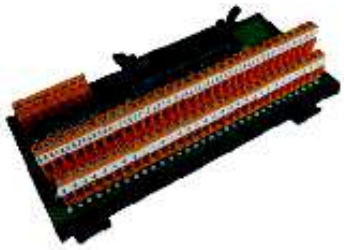
Connection Modules 32 I/O

Code	Sign	Visualization	Dim. (mm)
71E036007	**EMF4032IO**		118x82x65
71E036008	**EMF4032IOV**	LED	118x82x65



Connection Modules 32 Actuators

Code	Sign	Visualization	Dim. (mm)
71E036022	**EMF4032E**		178x82x65
71E036023	**EMF4032EV**	LED	178x82x65

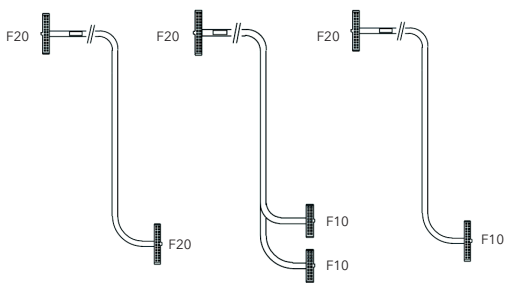


Connection Modules 32 Sensors

Code	Sign	Visualization	Dim. (mm)
71E036020	**EMF4032P**		178x82x80
71E036021	**EMF4032PV**	LED	178x82x80

Expansion Connection Cables 8/16 Output

Code	Sign	Description
21E014124	**ECF20/...**	Expansion Cable for 16 signals
71E026553	**ECF20x2F10/...**	Expansion Cable for 16 signals (8+8)
71E026502	**ECF20x2F10/...**	Expansion Cable for 8 signals

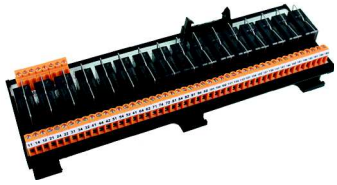


Note:
Each code is available in the spring-loaded version

Modules 16 Input/Output for PLC

Relay Modules 16 Output 12 A - 1 SC

Code	Sign	Output	Dim. (mm)
71E425656	**EMESR16Z/M**	250 V AC-30 V DC	225x82x57
31E018058	**EMESR16/24C/C**	250 V AC-30 V DC	22,5x120x112



Connection Modules 16 I/O

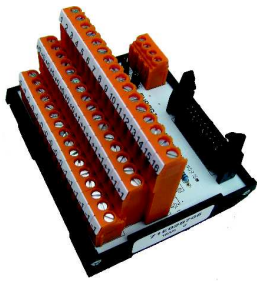
Code	Sign	Visualization	Dim. (mm)
71E036003	**EMF2016I0**		68x82x65
71E036004	**EMF2016I0V**	LED	68x82x65
71E036005	**EMF2016I0/SC**		22,5x120x112
71E036006	**EMF2016I0V/SC**	LED	22,5x120x112

Connection Modules 16 Actuators

Code	Sign	Visualization	Dim. (mm)
71E025721	**EMCE16/F20**		93x82x65
71E025722	**EMCE16V/F20**	LED	93x82x65

Connection Modules 16 Sensors

Code	Sign	Visualization	Dim. (mm)
71E025706	**EMCP16/F20**		93x82x80
71E025707	**EMCP16V/F20**	LED	93x82x80



Note:
Each code is available in the spring-loaded version

Modules 8 Input/Output for PLC

Relay Modules 8 Output 12 A - 7x1NA + 1 SC

Code	Sign	Output	Protection	Dim. (mm)
31E018741	**EMR8CF10/24C**	250 V AC-30 V DC		22,5x120x112
31E018743	**EMR8CF10/25C**	250 V AC-30 V DC	Polyswitch 2 A	22,5x120x112

Relay Modules 8 Output 5/8/12 A

Code	Sign	Relay	Dim. (mm)
71E036031	**EMF108ORZ**	1 S C - 12 A - 250 V AC-30 V DC	132x82x65
71E036033	**EMEF10208ORZ**	2 S C - 8 A - 250 V AC-30 V DC	132x82x65
71E036054	**EMRS8S/24C**	1 NA - 5 A - 250 V AC-30 V DC	65x82x65

Static Relay Modules 8 Output 2 A

Code	Sign	Current	Dim. (mm)
41E016708	**ESS820A**	A.c.	35x120x112
41E016709	**ESS820C**	D.c.	35x120x112
41E019004	**EMRS8SA/24C**	A.c.	65x82x65
41E019005	**EMRS8SC/24C**	D.c.	65x82x65
41E019031	**EMEF108ORZ/SC**	D.c.	132x82x65
41E019032	**EMEF108ORZ/SA**	A.c.	132x82x65

Connection Modules 8 I/O

Code	Sign	Visualization	Dim. (mm)
71E036001	**EMF108I0**		45x82x65
71E036002	**EMF108I0V**	LED	45x82x65
71E025795	**EM08IF10**		22,5x120x112
71E025796	**EM08IF10V**	LED	22,5x120x112

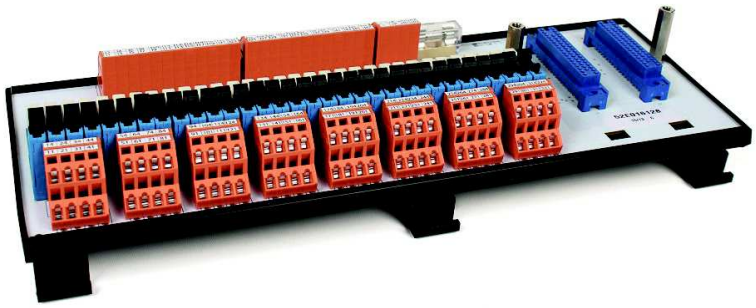
Connection Modules 8 Sensors

Code	Sign	Dim. (mm)
71E025006	**EMCP8/F10**	60x82x80
71E025007	**EMCP8V/F10**	60x82x80

Note:
Each code is available in the spring-loaded version

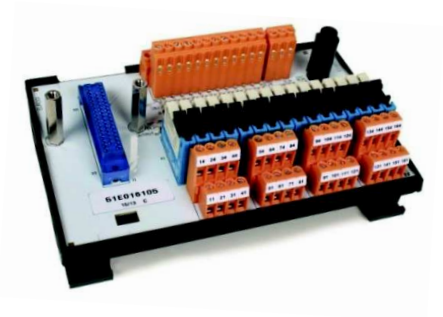
Relay Modules, Connection and Pre-Wired Cables for CN

Modules for CN FANUC 48 Input + 32 Output



Code	Sign	Tipe	Input	Output	Connector	Dim. (mm)
51E015118	**EMFAI48I32OV/M**	MASTER	48	32 displayed LED	N° 2 Honda fem. 50 vie	287x118x65
51E016128	**EMFAI48I32ORZ/M**	MASTER	48	32 relay 6 A zocc.	N° 2 Honda fem. 50 vie	287x118x65
51E015119	**EMFAI48I32OV/E**	EXPANSION	48	32 displayed LED	N° 2 Honda fem. 50 vie	287x118x65
51E016132	**EMFAI48I32ORZ/E**	EXPANSION	48	32 relay 6 A socket	N° 2 Honda fem. 50 vie	287x118x65

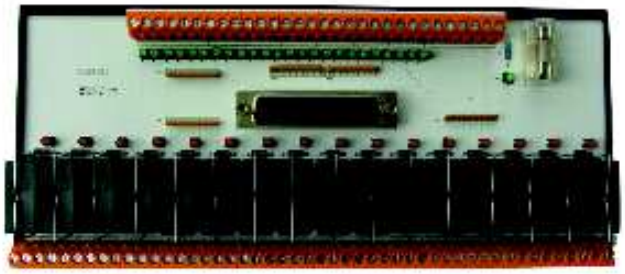
Modules for CN FANUC 24 Input + 16 Output



Code	Sign	Input	Output	Connector	Dim. (mm)
51E015103	**EMFAI24I16OV/S**	24	16 displayed LED	Honda fem. 50 vie	153x118x65
51E016105	**EMFAI24I16ORZ/S**	24	16 relay 6 A socket	Honda fem. 50 vie	153x118x65

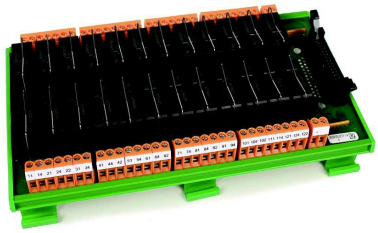
Relay Modules, Connection and Pre-Wired Cables for CN

Modules for CN FANUC 24 Input + 16 Output



Code	Sign	Input	Output	Connector	Dim.(mm)
51E015087	**EMV50F24I16ORZ**	24	16 relay 12 A socket	Sub-D fem. 50 vie	252x82x65
51E014998	**ECH50FV50M/..**		Cable	Sub-D mal. 50 vie/ Honda fem. 50 vie	

Relay Modules 24 Output 12 A - 1 SC



Code	Sign	Input	Output	Connector	Dim. (mm)
51E015060	**EMF2624OR**	Solder	250 V AC-30 V DC	Flat 26 vie	232x118x57
51E015061	**EMF2624ORZ**	Socket	250 V AC-30 V DC	Flat 26 vie	232x118x57

Note:
Each code is available in the spring-loaded version

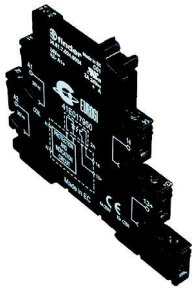
Electromechanical Relay Modules

1 Relay Modules 12 A - 1 SC

Code	Sign	Relay	Input	Output	Dim. (mm)
31E018781	**EMSR1SC/24C**	Solder	24 V DC	250 V AC - 30 V DC	12,5x82x62

1 Relay Modules 6 A - 1 SC

Code	Sign	Relay	Input	Dim. (mm)
31E018751	**EMR61SC/24C**	1 removable	24 V AC/DC	6,2x87,3x75,6
31E018758	**EP20**	20-poles comb		
31E018757	**ESP**	Plastic divider		
31E018759	**CTT64**	Neutral label sheet		



4/8/16 Relay Modules 12 A - 1 SC

Code	Sign	Relay	Input	Output	Dim. (mm)
31E017457	**EMRS4Z/24C**	4 socket	24 V DC	250 V AC - 30 V DC	67,5x82x57
31E017459	**EMRS8Z/24C**	8 socket	24 V DC	250 V AC - 30 V DC	135x82x57
31E017461	**EMRS16Z/24C**	16 socket	24 V DC	250 V AC - 30 V DC	259x82x57

8/16 Relay Modules 12 A - 1SC - Output Protection

Code	Sign	Relay	Input	Output	Protection	Dim. (mm)
31E017409	**EMRF8Z/24C**	8 socket	24 V DC	250 V AC-30 V DC	Fuse 2 A	157,5x82x60
31E017411	**EMRF16Z/24C**	16 socket	24 V DC	250 V AC-30 V DC	Fuse 2 A	292,5x82x60

Note:
Each code is available in the spring-loaded version

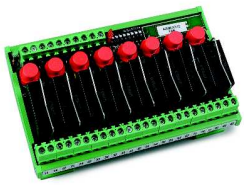
Electromechanical Relay Modules

1/4/6/8 Relay Modules 8 A - 2 SC

Code	Sign	Relay	Input	Output	Dim. (mm)
31E017606	**EMR201Z/24C**	1 socket	24 V DC	250 V AC - 30 V DC	22,5x82x62
31E017600	**EMR201S/24C**	1 solder	24 V DC	250 V AC - 30 V DC	22,5x82x62
31E017608	**EMR204Z/24C**	4 socket	24 V DC	250 V AC - 30 V DC	79x82x62
31E017651	**EMR206Z/24C**	6 socket	24 V DC	250 V AC - 30 V DC	101,5x82x62
31E017609	**EMR208Z/24C**	8 socket	24 V DC	250 V AC - 30 V DC	135x82x62

8 Relay Modules 12 A - 1 SC - Relay Test

Code	Sign	Relay	Input	Output	Dim. (mm)
31E018700	**EMRS8ZP/24C**	8 socket	24 V DC	250 V AC - 30 V DC	128x82x57



6/8 Relay Modules 12 A - 1 Contact

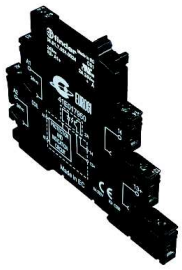
Code	Sign	Relay	Input	Output	Term.	Dim. (mm)
31E018051	**EMR6X1SCP/24C**	6 solder	24 V DC	SC 250 V AC - 30 V DC	Screw Remov.	22,5x113x100
31E018052	**EMR8X1NAP/24C**	8 solder	24 V DC	NA 250 V AC - 30 V DC	Screw Remov.	22,5x113x100

Note:
Each code is available in the spring-loaded version

Static Relay Modules

1 Relay Modules 2 A 24 V DC - 1 SC

Code	Sign	Relay	Input	Output	Term.	Dim. (mm)
41E017950	**EMRSS61NA/24C**	1 socket	24 V DC	33 V DC	Screw	6,2x87,3x62x75,6



1 Relay Modules 3 A 24 V DC - 1 SC

Code	Sign	Relay	Input	Output	Protection	Term.	Dim. (mm)
41E018040	**EMOSSC1S/3**	1 sold.	24 V DC	60 V DC		Rem. screw	12,5x82x58
41E017987	**EMOSPC1S/3C**	1 sold.	24 V DC	60 V DC	Fuse	Rem. screw	12,5x82x58
41E017997	**EMOSPA1S/3C**	1 sold.	24 V DC	280 V DC	Fuse	Rem. screw	12,5x82x58

Relay Modules 3 A 24 V DC - 1 SC

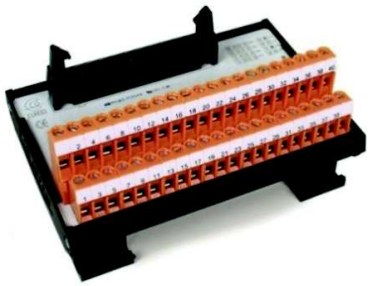
Code	Sign	Relay	Input	Output	Protection	Term.	Dim. (mm)
41E018012	**EMOSPC4Z/3**	4 socket	24 V DC	60 V DC	Fuse	Rem. screw	92x118x75
41E018014	**EMOSPC8Z/3**	8 socket	24 V DC	60 V DC	Fuse	Screw	180x118x75

Connection Modules Connector-Terminal

Flat Connector Double Terminal

Max voltage 125 V AC/150 V DC

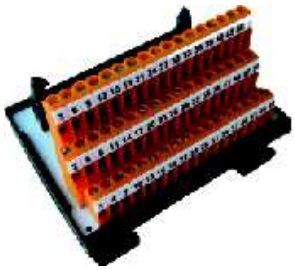
Code	Sign	Connector	I max	Dim. (mm)
21E014001	**EDF10**	10 pole	1 A	45x82x65
21E014004	**EDF20**	20 pole	1 A	60x82x65
21E014005	**EDF26**	26 pole	1 A	79x82x65
21E014007	**EDF34**	34 pole	1 A	102x82x65
21E014008	**EDF40**	40 pole	1 A	113x82x65
21E014010	**EDF50**	50 pole	1 A	147x82x65



Flat Connector Triple Terminal

Max voltage 125 V AC/150 V DC

Code	Sign	Connector	I max	Dim. (mm)
21E014040	**EMTF34**	34 pole	1 A	79x82x80
21E014041	**EMTF40**	40 pole	1 A	90x82x80
21E014043	**EMTF50**	50 pole	1 A	102x82x80



Sub-D Connector Double Terminal

Max voltage 125 V AC/150 V DC

Code	Sign	Connector	I max	Dim. (mm)
21E013801	**EDV9F**	9 pole fem.	2 A	46x82x65
21E013806	**EDV9M**	9 pole mal.	2 A	46x82x65
21E013802	**EDV15F**	15 pole fem.	2 A	57x82x65
21E013807	**EDV15M**	15 pole mal.	2 A	57x82x65
21E013803	**EDV25F**	25 pole fem.	2 A	79x82x65
21E013808	**EDV25M**	25 pole mal.	2 A	79x82x65
21E013804	**EDV37F**	37 pole fem.	2 A	113x82x65
21E013809	**EDV37M**	37 pole mal.	2 A	113x82x65
21E013831	**EDV50F**	50 pole fem.	2 A	147x82x65
21E013832	**EDV50M**	50 pole mal.	2 A	147x82x65

Sub-D Connector Triple Terminal

Max voltage 125 V AC/150 V DC

Code	Sign	Connector	I max	Dim. (mm)
21E013828	**EMTV25M**	25 pole mal.	2 A	62x82x80
21E013823	**EMTV25F**	25 pole fem.	2 A	62x82x80
21E013829	**EMTV37M**	37 pole mal.	2 A	79x82x80
21E013824	**EMTV37F**	37 pole fem.	2 A	79x82x80
21E013830	**EMTV50M**	50 pole mal.	2 A	102x82x80
21E013825	**EMTV50F**	50 poli fem.	2 A	102x82x80

Connection Modules RJ-45 Connector Terminal

RJ-45 Connector Terminal

Code	RJ45 Connector	Category	Term.	Dim. (mm)
21E014090	1 RJ45 fem. straight	Cat 5 100 Mbit	Screw	30x82x65

Note:
Each code is available in the spring-loaded version

Photo Coupler Modules

FOS Signal Photo Coupler Modules

Opto-isolated module for galvanic separation

Code	Sign	Photo Coupler	V IN	V OUT
4.770.044	**FOS5/1 W/24 V**	N° 1	5 V	24 V
4.770.045	**FOS5/2 W/24 V**	N° 2	5 V	24 V
4.770.046	**FOS5/4 W/24 V**	N° 4	5 V	24 V
4.770.048	**FOS5/8 W/24 V**	N° 8	5 V	24 V
4.770.047	**FOS5/16 W/24 V**	N° 16	5 V	24 V
4.770.014	**FOS12/1 W/24 V**	N° 1	12 V	24 V
4.770.015	**FOS12/2 W/24 V**	N° 2	12 V	24 V
4.770.001	**FOS24/1 W/24 V**	N° 1	24 V	24 V
4.770.002	**FOS24/2 W/24 V**	N° 2	24 V	24 V
4.770.003	**FOS24/4 W/24 V**	N° 4	24 V	24 V
4.770.013	**FOS24/6 W/24 V**	N° 6	24 V	24 V
4.770.004	**FOS24/8 W/24 V**	N° 8	24 V	24 V
4.770.005	**FOS24/16 W/24 V**	N° 16	24 V	24 V
4.770.006	**FOS24/1 W/48 V**	N° 1	5 V	48 V
4.770.007	**FOS24/2 W/48 V**	N° 2	5 V	48 V
4.770.008	**FOS24/4 W/48 V**	N° 4	5 V	48 V
4.770.009	**FOS24/8 W/48 V**	N° 8	5 V	48 V
4.770.010	**FOS24/16 W/48 V**	N° 16	5 V	48 V

Standard Cables Sub-D/Flat Connectors

Flat Cables - Flat Connectors
Max voltage 250 V AC
Max current 1 A
Section 28 AWG 0,08 mm²

Code	Sign/ Length	Conn.
21E014121	**ECF10/..**	10 pole
21E014124	**ECF20/..**	20 pole
21E014125	**ECF26/..**	26 pole
21E014127	**ECF34/..**	34 pole
21E014128	**ECF40/..**	40 pole
21E014130	**ECF50/..**	50 pole

Round Cables - Flat Connectors
Max voltage 250 V AC
Max current 1 A
Section 24 AWG 0,2 mm²

Code	Sign/ Length	Conn.
21E014351	**ECF10T/..**	10 pole
21E014354	**ECF20T/..**	20 pole
21E014355	**ECF26T/..**	26 pole
21E014357	**ECF34T/..**	34 pole
21E014415	**ECF40T/..**	40 pole
21E014360	**ECF50T/..**	50 pole

Round Cables - Flat Connector
Max voltage 250 V AC
Max current 1 A
Section 24 AWG 0,2 mm²

Code	Sign/Length	Conn.
21E014540	**ECF10ESFP/..**	10 pole
21E014442	**ECF20ESF/..**	20 pole
21E014544	**ECF34ESFP/..**	34 pole
21E014445	**ECF40ESF/..**	40 pole
21E014546	**ECF50ESFP/..**	50 pole

Flat Cables - Sub-D Connector
Max voltage 250 V AC
Max current 1 A
Section 28 AWG 0,08 mm²

Side 1
Conn. Mal.

Side 2
Conn. Fem.

Code	Sign/Length	Conn.
21E014150	**ECFV9MF/..**	9 pole
21E014151	**ECFV15MF/..**	15 pole
21E014152	**ECFV25MF/..**	25 pole
21E014153	**ECFV37MF/..**	37 pole
21E014154	**ECFV50MF/..**	50 pole

Round Cables - Sub-D Connector
Max voltage 250 V AC
Max current 2 A
Section 24 AWG 0,2 mm²

Side 1
Conn. Mal.

Side 2
Conn. Fem.

Code	Sign/Length	Conn.	Cap
21E014295	**ECV9MF/PD/..**	9 pole	Straight
21E114295	**ECV9MF/PQ/..**	9 pole	45°
21E014296	**ECV15MF/PD/..**	15 pole	Straight
21E114296	**ECV15MF/PQ/..**	15 pole	45°
21E014297	**ECV25MF/PD/..**	25 pole	Straight
21E114297	**ECV25MF/PQ/..**	25 pole	45°
21E014298	**ECV37MF/PD/..**	37 pole	Straight
21E114298	**ECV37MF/PQ/..**	37 pole	45°
21E014299	**ECV50MF/PD/..**	50 pole	Straight
21E114299	**ECV50MF/PQ/..**	50 pole	45°

Standard Cables Sub-D/Flat Connectors

Round Cables - Sub-D Fringed Connectors

Max voltage 250 V AC
Max current 2 A
Section 24 AWG 0,2 mm²

Code	Sign/Length	Conn.	Cap
21E014250	**ECV9F/PD/..**	9 pole	Straight 45°
21E014255	**ECV9M/PD/..**	9 pole	Straight 45°
21E014251	**ECV15F/PD/..**	15 pole	Straight 45°
21E104256	**ECV15M/PD/..**	15 pole	Straight 45°
21E014252	**ECV25F/PD/..**	25 pole	Straight 45°
21E014257	**ECV25M/PD/..**	25 pole	Straight 45°
21E014253	**ECV37F/PD/..**	37 pole	Straight 45°
21E014258	**ECV37M/PD/..**	37 pole	Straight 45°
21E014254	**ECV50F/PD/..**	50 pole	Straight 45°
21E014259	**ECV50M/PD/..**	50 pole	Straight 45°

Side 2
Cond.
Free

Side 1
Conn.
Fem.

Note:
The cable length must be expressed in meters and must be considered between the connectors outputs. Metallic plastic cups.

Signals Conversion Modules

Analogic >> Digital

Code	Sign	Supply	Input	Output	Insulation	Dim. (mm)
61E024990	**EMAD208/010**	24 V DC	0÷10 V DC	8 bit	500 V AC	22,5x113x100
61E024980	**EMAD108/010**	20÷35 V DC	0÷10 V DC	8 bit	500 V AC	22,5x113x100
61E024995	**EMAD212/010**	24 V DC	0÷10 V DC	8 bit	500 V AC	22,5x113x100

Digital >> Analogic

Code	Sign	Supply	Input	Output	Insulation	Dim. (mm)
61E025010	**EMAD208/010**	24 V DC	0÷10 V DC	8 bit	500 V AC	22,5x113x100
61E025000	**EMAD108/010**	20÷35 V DC	0÷10 V DC	8 bit	500 V AC	22,5x113x100

RS232 >> Current Loop 20 mA

Code	Sign	Supply	Connector	Insulation	Dim. (mm)
61E016769	**EMRC24/010**	20÷35 V DC	Sub-D femm. 9 vie	500 V AC	22,5x113x100

Note:
Maximum distance 400 m
RS232 110÷19.200 Baud
Extractable screw terminals

RS232 >> 422/485

Code	Sign	Supply	Conn. Input	Conn. Output	Output	Insulation	Dim. (mm)
61E016762	**EMR232/422/C**	20÷35 V DC	Sub-D fem. 25 vie	Sub-D fem. 9 vie	422	500 V AC	22,5x113x100
61E016764	**EMR232/422/M**	20÷35 V DC	Terminal	Terminal	422	500 V AC	22,5x113x100
61E016763	**EMR232/485/C**	20÷35 V DC	Sub-D fem. 25 vie	Sub-D fem. 9 vie	422	500 V AC	22,5x113x100
61E016765	**EMR232/485/M**	20÷35 V DC	Terminal	Terminal	422	500 V AC	22,5x113x100

Note:
Maximum distance 400 m
RS232 110÷19.200 Baud
Extractable screw terminals

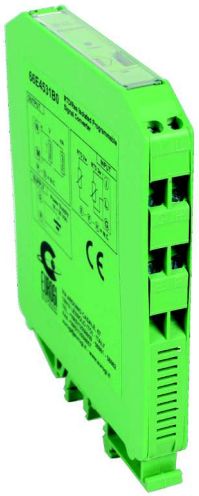
Signals Conversion Modules

Isolated Conversion Modules

- DIN Rail
- IP20
- Screw terminal
- Self-extinguishing plastic container
- Dimensions 12,5 x 90 x 112 mm

- DIP Switch configuration
- Galvanic isolation input-output supply 2.000 V AC 50 Hz 1 min
- Voltage/current configurable output
- Response time 400/500 ms

Code	Supply	Function	Input	Output
66E502000	18÷32 V DC	V - I Potentiometer	0÷20 mA -10÷10 V DC	0÷20 mA -10÷10 V DC
66E502100	18÷30 V DC	V - I Auxiliary Supply	0÷20 mA 4÷20 mA 0÷10 V DC 2÷10 V DC 0÷5 V DC 1÷5 V DC	0-20 mA 4-20 mA 0-10 V DC 2-10 V DC 0-5 V DC 1-5 V DC
66E502500	18÷30 V DC	Strain guage Bridge transducer	0÷10 V DC 0÷200 V DC 5÷200 V DC	0÷20 mA 4÷20 mA 0÷10 V DC 2÷10 V DC 0÷5 V DC 1÷5 V DC



- Galvanic isolation input-output supply 1.500 V AC 50 Hz 1 min

Code	Supply	Function	Note	Output
66E4531A0	18÷30 V DC	mV - Tc	Standard thermocouple Voltage -100÷90/-100÷200/-100÷800 mV	0-20 mA 0-10 V DC
66E4531B0	18÷30 V DC	RTD - Resistance	Standard thermoresistance RTD 2/3 fili (Pt100, Pt1000, Ni100, Ni1000)	0-20 mA 0-10 V DC
66E4531C0	18÷30 V DC	PTC - NTC - Potentiometer	KTY-nn - Coster-nn	0-20 mA 0-10 V DC
66E4531D0	18÷30 V DC	mA - V	Current 0÷20 mA Voltage 0÷10 V DC	0-20 mA 0-10 V DC
66E454000	18÷30 V DC	Frequency F/V - F/I	Digital sensors up-to 20 KHz (Namur, TTL, PNP, tachimeter, voltage)	0-20 mA 0-10 V DC

Code	Supply	Input		Output
66E453000	20÷30 V DC	0÷20 mA -10÷10 mV -100÷90 mV -100÷200 mV -100÷800 mV	Thermocouple Potentiometer Resistance 2/3/4 wires RTD 2/3/4 fili (Pt100, Pt1000, Ni100, Ni1000)	0÷20 mA 0÷10 V DC

KNICK GmbH Galvanic Insulation Modules

Universal Insulation Amplifiers
High reliability insulation modules.
Extensive range of selectable currents and voltages

Shunt High Voltage Isolation Amplifiers/ Shunt Isolators
Modules for current and voltage measurements with high degree of isolation

	Universal isolation modules	Universal isolation modules	High voltage isolation modules	High voltage isolation modules	High voltage isolation modules	High voltage isolation modules
	VariTrans P 27000	VariTrans P 26000	VariTrans P 29000	VariTrans P 41000	VariTrans P 42000	VariTrans P 43000
						
Input	0÷±0,1 mA to 0÷ ±100 mA 0÷±20 mV to 0÷ ±200 V 0÷20 mA 4÷20 mA 0÷10 V unipolar/bipolar	0÷±20 mA 0÷±10 V bipolar	0÷±30 mV to 0÷±1000 V unipolar/ bipolar	0÷±60 mV to 0...±100 V unipolare/ bipolar	0÷±100 mV to 0÷±3600 V unipolar/ bipolar	0÷±0,1 A to 0÷±5 A unipolar/ bipolar
Error Class	0,08 %	0,1 %	0,2 %	0,1 %	0,3 %	0,3 %
Test Voltage	5 kV AC	4 kV AC	5,4 kV AC	15 kV AC	15 kV AC	15 kV AC
Separation of protection	600 V AC/DC	1000 V AC/DC	1000 V AC/DC	3600 V AC/DC	3600 V AC/DC	3600 V AC/DC
Supply	20÷253 V AC/DC	20÷253 V AC/DC	20÷253 V AC/DC	20÷253 V AC/DC	20÷253 V AC/DC	20÷253 V AC/DC
Width	12,5 mm	12,5 mm	17,5 mm	22,5 mm	67,5 mm	45 mm

Note:
In addition, there are also the **VariTrans P41000 TRMS, P42000 TRMS** e **P43000 TRMS** modules, such as P 41000, P 42000 and P 43000 modules, but with in addition the conversion functionality of the average quadratic value (TRMS) included in the transmitter

KNICK GmbH Galvanic Insulation Modules

Isolators for Standard Signals/Power Repeater

Galvanic isolation modules and high-reliability signal conversion

	Standard signal isolation modules	Standard signal isolation modules	Signals duplicators	Power repeaters
	VariTrans P 15000	VariTrans A 21000	VariTrans A 20300	IsoAmp PWR A 20100
				
Input	0÷20 mA 4÷20 mA 0÷10 V	0÷20 mA 4÷20 mA 0÷10 V	0÷20 mA 4÷20 mA 0÷10 V	4...20 mA
Error class	0,08 %	0,2 %	0,2 %	0,1 %
Test voltage	4 kV AC	2,5 kV AC	1,5 kV AC	2,5 kV AC
Separation of protection	1000 V AC/DC	300 V AC/DC	300 V AC/DC	600 V AC/DC
Supply	20÷253 V AC/DC	24 V÷110 V DC/ 110 V÷230 V AC	24 V DC	24 V DC
Width	12,5 mm	6 mm	6 mm	6 mm

Insulation Modules for Standard Signal Power Loops

Galvanic isolation modules and standard signal conversion for high-precision measurements

	Insulation for standard loop power signals	Insulation for standard loop power signals	Insulation for standard loop power signals
	IsoTrans 41	ProLine P 22400	IsoTrans A 20400
			
Input	0÷20 mA 4÷20 mA 0÷50 A	0÷20 mA 4÷20 mA 0÷±20 mA (ProLine P22411P1)	0÷20 mA 4÷20 mA
Error class	0,02 %	0,08 %	0,1 %
Test Voltage	2,5 kV AC	7,4 kV AC	2,5 kV AC
Separation of protection	500 V AC/DC	600 V AC/DC	300 V AC/DC
Supply	Loop-Powered	Loop-Powered	Loop-Powered
Width	17,5/22,5 mm	12,5 mm	6 mm

AC/DC Transmitters

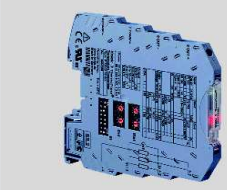
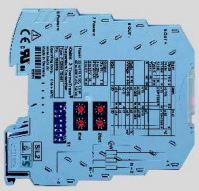
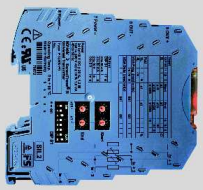
AC/DC Transmitters with high degree of insulation.
Ex: primary power monitoring application

AC/DC Transmitters	AC/DC Transmitters
IsoTrans 600	VariTrans P 40000 TRMS
	VariTrans P 41000 TRMS VariTrans P 42000 TRMS VariTrans P 43000 TRMS
0÷5 A AC 0÷400 A AC 48÷63 Hz	Isolation for high voltage amplifiers/shunt insulators
0,5 %	
6/4 kV AC	
600 V AC/DC	
Loop-Powered	
22,5 mm	

KNICK GmbH Galvanic Insulation Modules

Transmitter for Temperature, Extensometer, Resistance

Signal transducer for sensors for physical parameters such as temperature, applied force, voltages and resistances with a level of risk up to SIL3

	Universal transmitters	Temperature transmitters	Extensometer transmitters	Resistance transmitters
	PolyTrans P 32000	ThermoTrans P 32100	SensoTrans DMS P 32200	SensoTrans R P 32300
				
Input	Thermoresistance, extensometer, thermocouple, potentiometer, resistance, voltage	Thermoresistance, thermocouple, shunt voltage up to ±1000 mV	Extensometer, load cells	Potentiometer, resistance
Error class	0,1 %	0,1 %	0,1 %	0,1 %
Test Voltage	2,5 kV AC	2,5 kV AC	2,5 kV AC	2,5 kV AC
Separation of protection	300 V AC/DC	300 V AC/DC	300 V AC/DC	300 V AC/DC
Supply	24 V DC,110 V... 230 V AC	24 V DC,110 V... 230 V AC	24 V DC,110 V... 230 V AC	24 V DC,110 V... 230 V AC
Width	6 mm	6 mm	6 mm	6 mm

ThermoTrans A 20210

SensoTrans DMS A 20220

SensoTrans R A 20230

Note:
Modules A 20210 such as P 32100, DSM A 20220 such as DSM P 32200, and module R A 20230 such as module R P 32300, but with 24 V power supply and no PC interface

KNICK GmbH Galvanic Insulation Modules

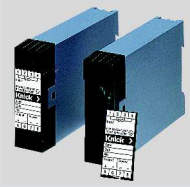
Isolators for Standard Signals/Power Repeater

Isolation of dangerous zone area of process signals and provision of 2 wire sensors, in ATEX area Zone 1

	Insulation for standard loop power signals	Power repeater
	IsoTrans 36/37	WG 21
		
Input	0...20 mA 4...20 mA	4...20 mA
Error class	0,2 %	0,1 %
Test Voltage	10 kV AC	4 kV AC
Separation of protection	3600 V AC/DC	1000 V AC/DC
Supply	Loop-Powered	24 V AC, 110/115 V AC, 220/230 V AC
Width	22,5 mm	22,5 mm

Temperature Transmitters

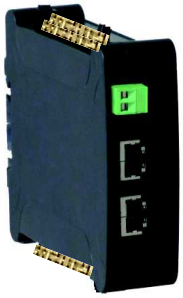
Temperature measurement in ATEX zone 1/0 with high insulation

Temperature transmitters	Temperature transmitters
ThermoTrans 205/206	ThermoTrans 210/211
	
Thermoresistance , resistance	Thermocouple
0,1 %	0,1 %
4 kV AC	4 kV AC
1000 V AC/DC	1000 V AC/DC
24 V AC, 110/115 V AC, 220/230 V AC	24 V AC, 110/115 V AC, 220/230 V AC
22,5 mm	22,5 mm

EtherCAT Slave Modules

Modules 16 Input + 16 Output 0,5/2 A

Code	Sign	Input	Connections	IP	Dim. (mm)
61G030024	**MICIO-024**	16 inputs opto-isolated 16 output 2 A	Spring clamps	20	35x113x100



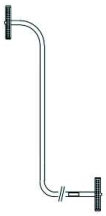
Gateway 32 Output and Cables for Relay Modules 5/8/12 A

Code	Sign	Input	Connections	IP	Dim. (mm)
61G030025	**MICIO-025**	32 digital outputs	N° 2 flat male 20 vie	20	35x113x100

Code	Sign	Gateway Connector	Output Connector
21E014124	**ECF20/...**	N° 1 flat fem. 20 vie	N° 1 flat fem. 20 vie
71E026553	**ECF20x2F10/...**	N° 1 flat fem. 20 vie	N° 2 flat fem. 20 vie

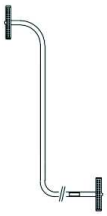
16 relay

20 vie

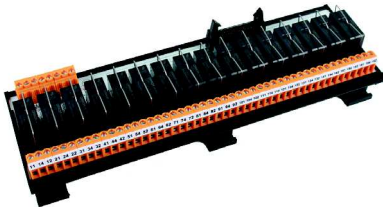


20 vie

20 vie



16 relay



8 relay

8 relay

2x10 vie

20 vie

20 vie

8 relay

8 relay

TASKIT Network PLC Taskscript

TASKIT Network PLC

TASKSCRIPT INSIDE
Firmware in programmable execution by IDE TASKSCRIPT
www.taskscript.org

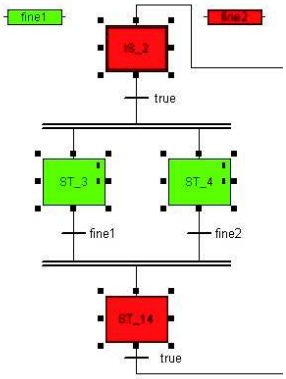
The running firmware can be implemented according to the client's specifications and provided preinstalled on the device

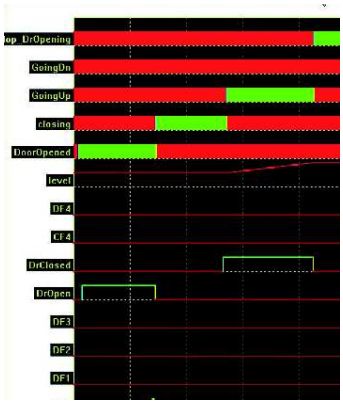
Code	Sign	Input
61G020012	**TASKIT-12**	N° 5 4÷20 mA

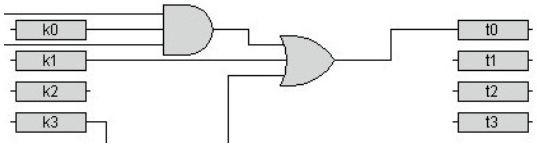
Note:
I/O versions on specification
It is possible to quickly provide prototype versions with inputs and outputs defined by customer specifications and then proceed with serial production

IDE TASKSCRIPT

- Graphic development environment
- Modeling of status and internal logic
- Firmware simulation and environment stimulation
- Firmware status acquisition running for debugging
- Remote upload firmware

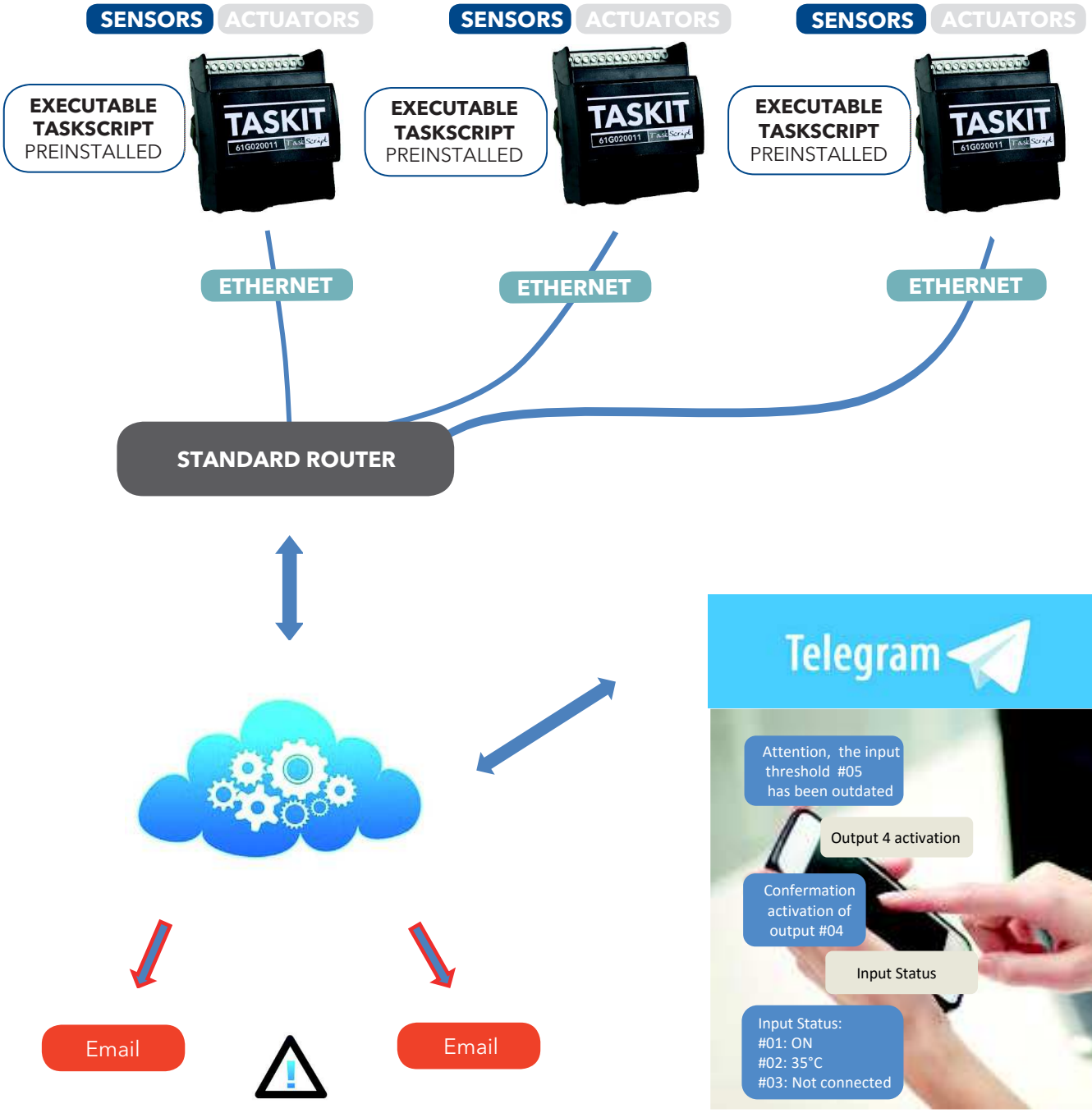






Internet of Things Industrial Solutions

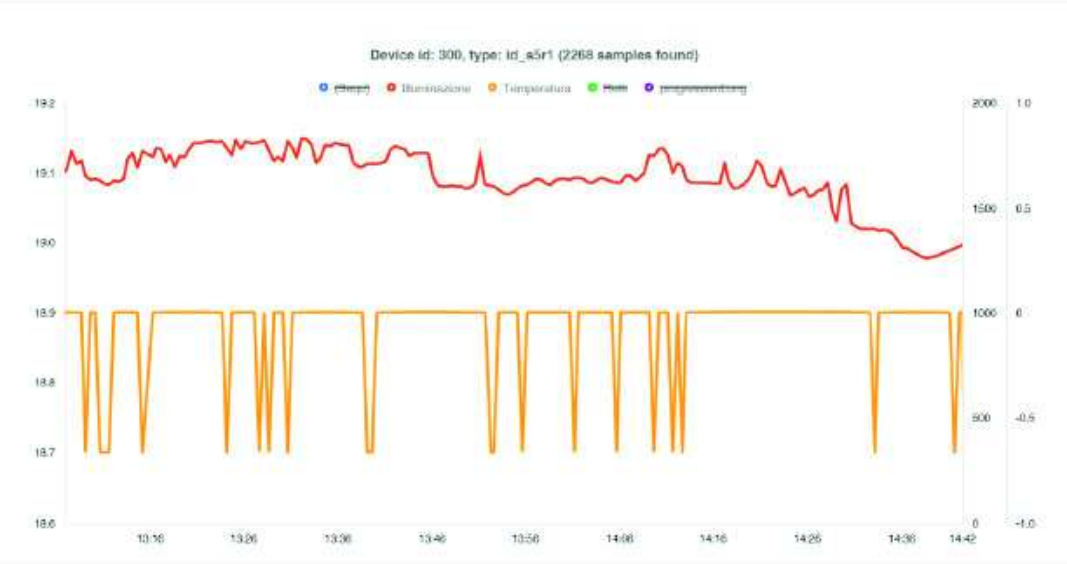
- TaskIT devices/custom versions
- Taskscript preinstalled programs for input monitoring and local logic
- Connectivity: standard Ethernet - no configuration
- Cloud Server: data storage/graphics/email notification delivery
- Mobile interface: bot on messaging



Internet of Things Industrial Solutions

Web Portal Monitoring

- Device list configuration
- Configuration thresholds and email for events
- Real time and historical charts
- Comparative graphs for data analysis



Bot on App Telegram Messaging

- Mobile: App Telegram iOS/Android
- PC: access via browser web

Internet of things Bot

BOT DEMO
In Telegram app:

- In CHAT section to type: **@Taskit_bot**
- To select the bot contact
- Plug START

Charge Regulators

DSH - Thyristor Control

- Power-on phase angle
- Electrically isolated input from the network
- Selectable analogic input
- All parts under voltage are covered with a polycarbonate protection
- Insulated heaters for personal safety
- Internal fuse of semiconductor type
- Standard current limit can be adjusted also externally
- Enable contact available at terminal block
- Selectable feedback type V, I, V2 feedback
- Optional Feedback Vxl
- This feedback enables constant power operation
- Initial adjustable soft start; monitoring of load voltage or the feedback value (0÷10 V DC)
- Current load monitoring (0÷10 V DC)

Code	Sign	V IN	Nominal current	Max. Currrent 10''
4.740.668	**DSH/400/12**	400 V AC	12 A	50 A
4.740.669	**DSH/400/22**	400 V AC	22 A	80 A
4.740.670	**DSH/400/30**	400 V AC	30 A	120 A
4.740.671	**DSH/400/50**	400 V AC	50 A	160 A
4.740 672	**DSH/400/80**	400 V AC	80 A	50 A
4.740 673	**DSH/400/110**	400 V AC	110 A	250 A
4.740 674	**DSH/400/150**	400 V AC	150 A	370 A
4.740 675	**DSH/400/180**	400 V AC	180 A	500 A
4.740 676	**DSH/400/220**	400 V AC	220 A	600 A
4.740 677	**DSH/400/270**	400 V AC	270 A	700 A
4.740 678	**DSH/400/350**	400 V AC	350 A	950A
4.740 679	**DSH/400/600**	400 V AC	600 A	1200 A
4.740 680	**DSH/400/800**	400 V AC	800 A	2000 A
4.740 681	**DSH/400/1000**	400 V AC	1000 A	4000 A
4.740 682	**DSH/400/1200**	400 V AC	1200 A	5000 A

DC Drivers

AF - Maxifet Bidiretional Drivers

For small DC servomotors

The AF series converters are designed to control the speed of small permanent magnet servomotors.

- High performance and small dimensions (EUROCAD format)
- Single voltage supply rectified and filtered, which can be derived from bus in DC
- The converter is suitable for operation with a single supply voltage that can be taken from a single-phase or three-phase voltage rectified and filtered by the interface INC-T module or DC bus via standard module

Code	Sign	V IN	Nominal current	Max. Current 2''
2.310.004	**AF24/5/10**	24 V AC	5 A	10 A
2.310.002	**AF24/8/16**	24 V AC	8 A	16 A
2.310.003	**AF24/10/20**	24 V AC	10 A	20 A
2.310.005	**AF24/14/28**	24 V AC	14 A	28 A
2.310.007	**AF60/1,2/2,5**	60 V AC	1,2 A	2,5 A
2.310.008	**AF60/2,5/5**	60 V AC	2,5 A	5 A
2.310.009	**AF60/5/10**	60 V AC	5 A	10 A
2.310.010	**AF60/8/16**	60 V AC	8 A	16 A
2.310.011	**AF60/10/20**	60 V AC	10 A	20 A
2.310.012	**AF60/14/28**	60 V AC	14 A	28 A
2.310.014	**AF100/5/10**	100 V AC	5 A	10 A
2.310.015	**AF100/8/16**	100 V AC	8 A	16 A
2.310.016	**AF100/10/20**	100 V AC	10 A	20 A
2.310.017	**AF100/12/24**	100 V AC	12 A	24 A
2.310.021	**AF140/4/8**	140 V AC	4 A	8 A
2.310.022	**AF140/5/10**	140 V AC	5 A	10 A
2.310.018	**AF140/8/16**	140 V AC	8 A	16 A
2.310.019	**AF140/10/20**	140 V AC	10 A	20 A
2.310.020	**AF140/12/24**	140 V AC	12 A	24 A

DC Drivers

AFB - Mosvar Bidirectional Drivers

For DC servomotors

The AFB series converters are designed to control the speed of permanent magnet servomotors.

- High performance and compact size
- Stand-alone operation, suitable for working with a single power supply, which can be single-phase or three-phase
- The energy generated during the deceleration phase is handled internally by a suitable power braking unit

Code	Sign	V IN	Nominal current	Max. Current 2''
2.320.013	**AFB150/10/20**	150 V AC	10 A	20 A
2.320.014	**AFB150/15/30**	150 V AC	15 A	30 A
2.320.015	**AFB150/22/30**	150 V AC	22 A	30 A
2.320.016	**AFB150/25/50**	150 V AC	25 A	50 A
2.320.018	**AFB220/10/20**	200 V AC	10 A	20 A
2.320.019	**AFB220/15/30**	200 V AC	15 A	30 A
2.320.020	**AFB220/22/30**	200 V AC	22 A	30 A
2.320.021	**AFB220/25/50**	200 V AC	25 A	50 A

CNA - Monophase Monodirectional Converters

For DC engines

- Drive for handling and controlling of DC motors or at permanent magnets
- Designed for 230 V AC single phase power supply (option 115 V AC)
- Adjustable armature output voltage 0 - 190 V DC
- Armature output current 5 A - 10 A
- Excitation output voltage 190 V - 0.5 A
- Handling voltage (not isolated) 0 - 10 V DC

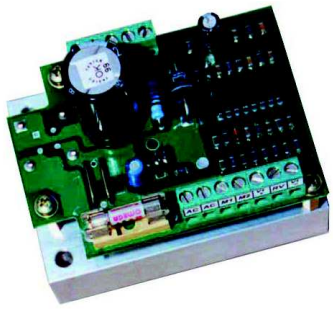
Code	Sign	V IN	Nominal Current
4.730.001	**CNA/115/5 A**	115 V AC	5 A
4.730.002	**CNA115/10 A**	115 V AC	8 A
4.730.003	**CNA/230/5 A**	230 V AC	5 A
4.730.004	**CNA/230/10 A**	230 V AC	8 A

DC Drivers

LAM - Monodirectional Drivers

For small engines at permanent magnetics

Code	Sign	V IN	V OUT	Nominal Current
4.740.600	**LAM24/24 V/1 A**	24 V AC	24 V DC	1 A
4.740.601	**LAM24/24 V/3 A**	24 V AC	24 V DC	3 A
4.740.602	**LAM24/24 V/8 A**	24 V AC	24 V DC	8 A
4.740.618	**LAM12 DC/12 V/10 A**	12 V AC	12 V DC	8 A



LAM2 - Monodirectional Drivers

For small engines at permanent magnetics

Code	Sign	V IN	V OUT	Nominal current
4.740.621	**LAM2-24/24 V/1,5 A**	24 V AC	24 V DC	1,5 A
4.740.622	**LAM2-24/24 V/3 A**	24 V AC	24 V DC	3 A
4.740.623	**LAM2-24/24 V/8 A**	24 V AC	24 V DC	8 A
4.740.624	**LAM2-24/24 V/10 A**	24 V AC	24 V DC	10 A

LAM2 - IP40 Monodirectional Drivers

For small engines at permanent magnetics

Code	Sign	V IN	V OUT	Nominal current
4.740.625	**LAM2-24/24 V/1,5 A/B**	24 V AC	24 V DC	1,5 A
4.740.626	**LAM2-24/24 V/3 A/B**	24 V AC	24 V DC	3 A

Switching Power Supply GEBRUDER FREI GmbH

Monophase

Network Voltage - 47÷63 Hz - Ripple 100 mVpp - UL Listed - CSA

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E003244	**EASWMR2024/230**	195÷265 V AC	24 V DC	20 A	20	240x86x153

Code	Input	V output	I Output		Dim. (mm)
11E003271	110÷240 V AC	24 V DC	5 A	20	40x133x124
11E003272	110÷240 V AC	24 V DC	10 A	20	60x133x124
11E003273	110÷240 V AC	24 V DC	20 A	20	85x133x124
11E003274	14÷29 V DC	24 V DC	50 A	20	120x125x130

Three Phase

Network voltage - 47÷63 Hz - Ripple 100 mVpp - UL Listed - CSA

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E003256	**EASWCT1024/400-500**	3x340÷550 V AC	24 V DC	10 A	20	81x160x153
11E003251	**EASWTR2024/400-500**	3x340÷550 V AC	24 V DC	20 A	20	240x86x153
11E003257	**EASWCT2024/400-500**	3x340÷550 V AC	24 V DC	20 A	20	86x173x227
11E003252	**EASWTR4024/400-500**	3x340÷550 V AC	24 V DC	40 A	20	292x130x185

DC UPS

Code	Description
11E003281	DC-UPS Buffer 24 V DC - 20 A - 240 W
11E003282	DC-UPS 24 V DC - 10 A - 240 W - accumulator 0,7 Ah
11E003283	DC-UPS 24 V DC - 10 A - 240 W - accumulator 1,2 Ah

Switching Power Supply MEANWELL

Monophase

Voltage network/continue - 47÷63 Hz - Ripple 150 mVpp - UL

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
10E001520	**EMDR20-24**	85÷264 V AC 120÷370 V DC	24 V DC	1 A	20	100x22,5x90
10E001521	**EMDR40-24**	85÷264 V AC 120÷370 V DC	24÷30 V DC	1,7 A	20	100x40x90
10E001522	**EMDR60-24**	85÷264 V AC 120÷370 V DC	24÷30 V DC	2,5 A	20	100x40x90

Voltage network/continue - 47÷63 Hz - Ripple 150 mVpp - UL

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
10E001502	**EDR30-24**	85÷264 V AC 120÷370 V DC	24 V DC	1,5 A	20	56x78x93
10E001500	**EDR4524**	85÷264 V AC 120÷370 V DC	24 V DC	2 A	20	67x78x93
10E001503	**EDR6024**	85÷264 V AC 120÷370 V DC	24 V DC	2,5 A	20	56x78x93
10E001505	**EDR7524**	85÷264 V AC 120÷370 V DC	24 V DC	3,2 A	20	100x55,5x125,2

Voltage network/continue - 47÷63 Hz - Ripple 80 mVpp - UL

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
10E001515	**EDR120-24**	90÷132/ 180÷264 V AC	24 V DC	5 A	20	100x65,5x125,2
10E001525	**EDRH120-24**	340÷550 V AC	24 V DC	5 A	20	100x65,5x125,2
10E001530	**EDRP240-24**	85÷264 V AC	24 V DC	10 A	20	100x125,5x125,2
10E001560	**EDRP480-24**	180÷264 V AC	24 V DC	20 A	20	100x227x125,2

Switching Power Supply MEANWELL

Monophase EDR/NDR Range

Voltage network/continue - 47÷63 Hz - UL

EDR

NDR

Code	Sign	Range	Input	V Output	I Output	IP	Dim. (mm)
10E201505	**EEDR75-24**	EDR	90÷264 V AC 127÷370 V DC	24 V DC	3,2 A	20	32x125,2x102
10E201515	**EEDR120-24**	EDR	90÷264 V AC 127÷370 V DC	24 V DC	5 A	20	40x125,2x113,5
10E301505	**ENDR75-24**	NDR	90÷264 V AC 127÷370 V DC	24 V DC	3,2 A	20	32x125,2x102
10E301515	**ENDR120-24**	NDR	90÷264 V AC 127÷370 V DC	24 V DC	5 A	20	40x125,2x113,5
10E301530	**ENDR240-24**	NDR	90÷264 V AC 127÷370 V DC	24 V DC	10 A	20	63x125,2x128,5

Three Phase

Voltage network/continue - 47÷63 Hz - Ripple 80mVpp - UL

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
10E001570	**EDRT240-24**	3x 340÷ 550 V DC	24 V DC	10 A	20	100x125,5x125,2
10E001580	**EDRT480-24**	3x 340÷ 550 V DC	24 V DC	20 A	20	100x227x125,2
10E001590	**EDRT960-24**	3x 340÷ 550 V DC	24 V DC	40 A	20	100x276x125,2

Linear Stabilized Power Supply

Monophase

Network Voltage - 47÷63 Hz - Ripple 10 mVpp - Fuse 500 mA

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016571	**EMAS05R/115-230**	115/230 V AC	5 V DC	0,5 A	00	77x82x70
11E016579	**EMAS10R/115-230**	115/230 V AC	10 V DC	0,5 A	00	77x82x70
11E016573	**EMAS12/115-230**	115/230 V AC	12 V DC	0,5 A	00	77x82x70
11E016577	**EMAS24/115-230**	115/230 V AC	12 V DC	0,5 A	00	100x82x80

Network Voltage - 47÷63 Hz - Ripple 10 mVpp - Fuse 500 mA

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016519	**EMA+ -10/230**	230 V AC	±10 V DC	0,75 A	00	162x82x65
11E016514	**EMA+ -15/115**	115 V AC	±15 V DC	0,75 A	00	162x82x65
11E016515	**EMA+ -15/230**	230 V AC	±15 V DC	0,75 A	00	162x82x65

Network Voltage - 47÷63 Hz - Ripple 30 mVpp - Fuse 2 A

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016499	**EMA05/230**	230 V AC	5 V DC	1,5 A	00	127x118x70
11E016497	**EMA10/230**	230 V AC	10 V DC	1,5 A	00	127x118x70
11E016503	**EMA12/230**	230 V AC	12 V DC	1,5 A	00	127x118x70
11E016505	**EMA15/230**	230 V AC	15 V DC	1,5 A	00	127x118x70
11E016507	**EMA24/230**	230 V AC	24 V DC	1,5 A	00	127x118x70

Monophase/Biphase

Network Voltage - 47÷63 Hz - Ripple 20 mVpp

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016599	**EAGS0324/230-400**	230 / 400 V AC	24 V DC	3 A	20	70x120x150
11E002200	**EAGS0524/230-400**	230 / 400 V AC	24 V DC	5 A	20	110x130x195
11E002231	**EAST1024/230-400**	230 / 400 V AC	24 V DC	10 A	20	110x213x207
11E002262	**EAST2024/230-400**	230 / 400 V AC	24 V DC	20 A	20	135x222x263

Stabilized Power Supply

Monophase

Low voltage - 47÷63 Hz - Ripple 10 mVpp

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016400	**EMAS05/24AC/C**	8,5÷11 V AC / 24 V DC	5 V DC	500 mA	20	22,5x82x90
11E016566	**EMAS05/24AC**	8,5÷11 V AC / 24 V DC	5 V DC	500 mA	00	47x82x50
11E016401	**EMAS10/24AC/C**	12÷14 V AC / 24 V DC	10 V DC	500 mA	00	22,5x82x90
11E016565	**EMAS10/24AC**	12÷14 V AC / 24 V DC	10 V DC	500 mA	00	47x82x50
11E016569	**EMAS24/24AC**	23÷25 V AC	24 V DC	500 mA	00	47x82x50

Low voltage - 47÷63 Hz - Ripple 20 mVpp

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016585	**EMA3/5**	9,5÷11,5 V AC / 24 V DC	5 V DC	3 A	00	100x82x65
11E016586	**EMA3/10**	13÷15 V AC / 24 V DC	10 V DC	3 A	00	100x82x65
11E016587	**EMA3/12**	14,5÷17 V AC / 24 V DC	12 V DC	3 A	00	100x82x65
11E016589	**EMA3/24**	23÷25 V AC	24 V DC	3 A	00	100x82x65

Low voltage - 47÷63 Hz - Ripple 20 mVpp

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E016550	**EAR3/24**	23÷25 V AC	24 V DC	5 A	00	147x118x78
11E016559	**EAR10/24**	23÷25 V AC	24 V DC	10 A	00	130x180x85

Stabilized Switching Power Supply

Monophase

Low voltage - 47÷63 Hz - Ripple 100 mVpp

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E003199	**EASW0524/24**	23÷25 V AC	24 V DC	5 A	20	47x118x50

Three Phase

Network voltage - 47÷63 Hz - Ripple 100 mVpp

Code	Sign	Input	V Output	I Output	IP	Dim. (mm)
11E003330	**ALTEC3-0724/400**	360÷440 V AC	24 V DC	7,5 A	20	85x130x113

Network Filters

Monophase - M1,5

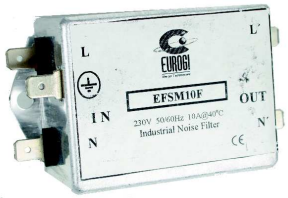
50÷60 Hz - Nominal voltage 110÷250 V AC - 25÷85° C

Code	Sign	I nominal	I leak	Dim. (mm)
65E000400	**EFM0540**	5 A	< 1,5 mA	84,5x29x51
65E000401	**EFM1040**	10 A	< 1,5 mA	84,5x33x51
65E000402	**EFM1640**	16 A	< 1,5 mA	102,5x39,5x51
65E000403	**EFM2440**	24 A	< 1,5 mA	70x49x51

Monophase - M2,2

50÷60 Hz - Nominal voltage 110÷250 V AC - 25÷85° C

Code	Sign	I nominal	I leak	Dim. (mm)
65E000500	**EFM0550**	5 A	< 2,2 mA	84,5x39x51
65E000501	**EFM1050**	10 A	< 2,2 mA	102,5x49x51
65E000502	**EFM1650**	16 A	< 2,2 mA	104,5x45x84,5
65E000503	**EFM2450**	24 A	< 2,2 mA	104,5x49,5x84,5



Three Phase - T15

50÷60 Hz - Nominal voltage 110÷600 V AC - 25÷85° C

Code	Sign	I nominal	I leak	Dim. (mm)
65E170000	**EFTS006-15**	3x 6 A	< 15 mA	226x140x50
65E170001	**EFTS012-15**	3x 12 A	< 15 mA	226x140x50
65E170002	**EFTS016-15**	3x 16 A	< 15 mA	267x177x60
65E170003	**EFTS025-15**	3x 25 A	< 15 mA	267x177x60
65E170004	**EFTS032-15**	3x 32 A	< 15 mA	267x177x60
65E170005	**EFTS042-15**	3x 42 A	< 15 mA	295x177x70
65E170006	**EFTS055-15**	3x 55 A	< 15 mA	295x177x70
65E170007	**EFTS070-15**	3x 70 A	< 15 mA	390x205x80
65E170008	**EFTS080-15**	3x 80 A	< 15 mA	390x205x80
65E170009	**EFTS100-15**	3x 100 A	< 15 mA	390x205x80
65E170010	**EFTS115-15**	3x 115 A	< 15 mA	390x205x80
65E170011	**EFTS150-15**	3x 150 A	< 15 mA	420x220x105
65E170012	**EFTS200-15**	3x 200 A	< 15 mA	420x220x105

Three Phase - Neutral T3

50÷60 Hz - Nominal voltage 110÷440 V AC - 25÷85°C

Code	Sign	I nominal	I leak	Dim. (mm)
65E001240	**EFTNS005**	4x 5 A	< 3 mA	186x35,8x38,6
65E001241	**EFTNS010**	4x 10 A	< 3 mA	186x35,8x38,6
65E001242	**EFTNS016**	4x 16 A	< 3 mA	245x90x100
65E001243	**EFTNS030**	4x 30 A	< 3 mA	245x90x100
65E001244	**EFTNS050**	4x 50 A	< 3 mA	245x90x100
65E001245	**EFTNS080**	4x 80 A	< 3 mA	356x90x186
65E001246	**EFTNS100**	4x 100 A	< 3 mA	356x90x186
65E001247	**EFTNS150**	4x 150 A	< 3 mA	356x90x221

Network Filters

Three Phase - TEL 15

50÷60 Hz - Nominal Voltage 110÷500 V AC - 25÷85°C

Code	Sign	I nominal	I leak	Dim.(mm)
65E170020	**EFTS007EL-15**	3x 6 A	< 15 mA	226x140x50
65E170021	**EFTS013EL-15**	3x 12 A	< 15 mA	226x140x50
65E170022	**EFTS018EL-15**	3x 16 A	< 15 mA	226x140x50
65E170023	**EFTS027EL-15**	3x 25 A	< 15 mA	226x140x50
65E170024	**EFTS034EL-15**	3x 32 A	< 15 mA	226x140x50
65E170025	**EFTS040EL-15**	3x 36 A	< 15 mA	226x140x50
65E170026	**EFTS055EL-15**	3x 50 A	< 15 mA	295x177x70
65E170027	**EFTS070EL-15**	3x 64 A	< 15 mA	295x177x70
65E170028	**EFTS100EL-15**	3x 90 A	< 15 mA	390x205x80
65E170029	**EFTS110EL-15**	3x 100 A	< 15 mA	390x205x80
65E170030	**EFTS130EL-15**	3x 120 A	< 15 mA	390x205x80
65E170031	**EFTS150EL-15**	3x 135 A	< 15 mA	390x205x80
65E170032	**EFTS180EL-15**	3x 165 A	< 15 mA	390x205x80
65E170033	**EFTS200EL-15**	3x 180 A	< 15 mA	420x220x105
65E170034	**EFTS230EL-15**	3x 210 A	< 15 mA	420x220x105

Three Phase - TEL 80

50÷60 Hz - Nominal Voltage 110÷600 V AC - 25÷85°C

Code	Sign	I nominal	I leak	Dim.(mm)
65E538101	**EFTS007EL-80**	3x 7 A	< 80 mA	250x100x90
65E538102	**EFTS016EL-80**	3x 16 A	< 80 mA	250x100x90
65E538103	**EFTS030EL-80**	3x 30 A	< 80 mA	250x100x90
65E538104	**EFTS042EL-80**	3x 42 A	< 80 mA	250x100x90
65E538105	**EFTS055EL-80**	3x 55 A	< 80 mA	250x100x90
65E538106	**EFTS075EL-80**	3x 75 A	< 80 mA	250x100x90
65E538107	**EFTS100EL-80**	3x 100 A	< 80 mA	270x135x85
65E538108	**EFTS130EL-80**	3x 130 A	< 80 mA	270x150x90
65E538109	**EFTS180EL-80**	3x 180 A	< 80 mA	270x150x90
65E538110	**EFTS250EL-80**	3x 250 A	< 80 mA	380x170x120
65E538111	**EFTS360EL-80**	3x 360 A	< 80 mA	340x90x220
65E538112	**EFTS400EL-80**	3x 400 A	< 80 mA	400x130x230
65E538113	**EFTS500EL-80**	3x 500 A	< 80 mA	480x130x230
65E538114	**EFTS600EL-80**	3x 600 A	< 80 mA	480x130x230
65E538117	**EFTS1250EL-80**	3x 1250 A	< 80 mA	480x160x250

DIN Rails Supports for Electronic Boards

Height 72 mm

Code	Sign	Description
91E007050	**ECE72**	Extruded profile, bar of 2mt, height 72 mm
91E007051	**ECG/E72**	Kook for DIN bar, height 72 mm
91E007052	**ECC/E72**	Side closure, height 72 mm
91E007053	**ECV/E72**	Screws for side closure
91E007056	**ESEC72/..**	Customized mounted support, height 72 mm
91E007058	**ECE72/..**	Customized cut extruded profile, height 72 mm

Height 107 mm

Code	Sign	Description
91E007040	**ECE107**	Extruded profile, bar of 2 mt, height 107 mm
91E007041	**ECG/E107**	Hook for DIN bar, height 107 mm
91E007042	**ECC/E107**	Lower side closure, height 107 mm
91E007043	**ECCA/E107**	Higher side closure, height 107 mm
91E007053	**ECVI/E**	Screws for side closure
91E007046	**ESEC107/...**	Customized mounted support, height 107 mm
91E007048	**ECE107/...**	Customized cut extruded profile, height 107 mm
91E007038	**ECE107/CT...**	Aluminium cover cap, length /CT...mm, height 72 mm

Note:
Plastic supports for printed circuit boards are used to accommodate 107 mm boards, to fix all on the DIN TS32 TS35 profile

Function Modules

Multiplexer 8 Channels

Code	Sign	Dim. (mm)
61E016829	**EMM8/C**	22,5x113x100

Note:
Extractable screw terminal
24 V DC Power supply
3 Bit selection for output relay activation
RTD 2 wires (Pt100, Pt1000, Ni100)
Thermocouple - Resistance
Voltage 0÷100 V AC/DC
Current 0÷1 A

Diode Modules

Code	Sign	Diode	Dim. (mm)
61E016233	**EMD24**	N° 22 lamp test 1 A	68x82x45
61E016241	**EMD11N**	N° 11 common anode 1 A	45x82x45
61E016231	**EMD22N**	N° 22 common anode 1 A	68x82x45
61E016240	**EMD11**	N° 11 common cathode 1A	45x82x45
61E016230	**EMD22**	N° 22 common cathode 1A	68x82x45
61E016242	**EMD51**	N° 5 indipendent 1 A	45x82x45
61E016232	**EMD11I**	N° 11 indipendent 1 A	68x82x45
61E016234	**EMD16I**	N° 16 indipendent 1 A	90x82x45
61E016243	**EMD5I/3A**	N° 5 indipendent 3 A	45x82x45
61E016244	**EMD11I/3A**	N° 11 indipendent 3 A	68x82x45

Note:
Working Vmax 250 V
Reverse Vmax 1.000 V

LED Illuminators for Machinery LED2Work GmbH

Mini LED - 24 V DC - IP68 - M12

Borosilicate glass 4 mm - Opening angle 70°

Code	Absorption	Flow	Colour temp.	Dim. (mm)
92E110614-01	10 W	600 lm	5.500° K	135x40x40

Lean LED - 24 V DC - IP54

Borosilicate glass 4 mm - Opening angle 120° - White cover - 2 base clips

Code	Absorption	Flow	Colour temp.	Dim. (mm)
92E110814-11	6 W	600 lm	5.500° K	260x22x28
92E110814-12	12 W	1.200 lm	5.500° K	520x22x28
92E110814-15	24 W	2.400 lm	5.500° K	1.020x22x28
92E110814-16	36 W	3.600 lm	5.500° K	1.520x22x28
92E212100-01	2 ring clips with screws for anti-vibration fixing			

Tube LED - 24 V DC - IP67

Borosilicate glass 4 mm - Opening angle 60° (available 35°)

Code	Absorption	Flow	ColourTemp.	Dim. (mm)
92E110314-01	12,5 W	750 lm	5.500° K	300x70 (diam.)
92E110414-02	25 W	1.500 lm	5.500° K	560x70 (diam.)
92E110514-02	50 W	3.000 lm	5.500° K	1.100x70 (diam.)
92E212000-01	2 supports for fixing			

Spot LED - 24 V DC - IP67 - M12

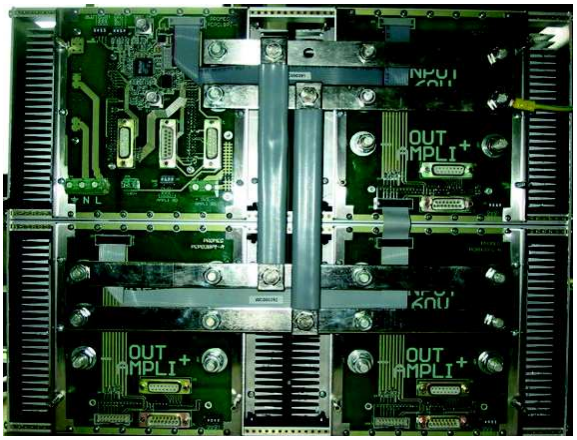
Borosilicate glass 4 mm - Opening angle 25° (available 16° and 40°)

Code	Absorption	Flow	Colour temp.	Dim. (mm)
92E111112-01	10 W	600 lm	5.500° K	Diam. 70
92E111112-12	10 W	600 lm	5.500° K	Diam. 100 Flange
Version with flange for wall fixing (by hole)				

Energy Distribution Unit for Magnetic Resonance Systems

Technical feature	
AC Input	400/480 V AC Three phase 50/60 Hz
Transformer	Galvanic following the electromedical regulation
DC Output	48 V 20 A
AC Output	N° 6 AC special output for different devices mono/three phase
Power	18 kW
UPS	Internal at the sytem with a power of 5 kW
Dissipation	Forced ventilation
Dimensions	1.000 height x 500 width x 600 depth (mm)
Weight	200 kg
Regulations	EN 60601-1 electromedical

Digital Current Amplifiers



Technical features	
AC Input	230V AC 50/60 Hz Monophase with PFC
DC Output single channel	N°4 dials: ±80 V ±10 A 80 kHz switching frequency 700 W max. power Resistance: 100 mΩ - 10 Ω Inductance: 25 µH - 10 mH
DC Output up-to 3 channels	N° 4 dials: ±160 V ±120 A 80 kHz switching frequency 3 kW max. power Resistance: 100 mΩ - 2 Ω Inductance: 25 µH - 2 mH
Current resolution	Better of 1 mA from 0 to full scale
Performance	<100 ppM FSR measured in 8 hours of operation
Slow rate	100 A in 400 µsec
Output features	No overshoot - no ringing
Dissipation	Forced ventilation Speed control in temperature function
Dimensions	350 height x 440 width x 495 depth (mm)
Regulations	EN 60601-1 electromedical

Switching Power Supply

Switching Power Supplies for Magnetic Resonance Systems

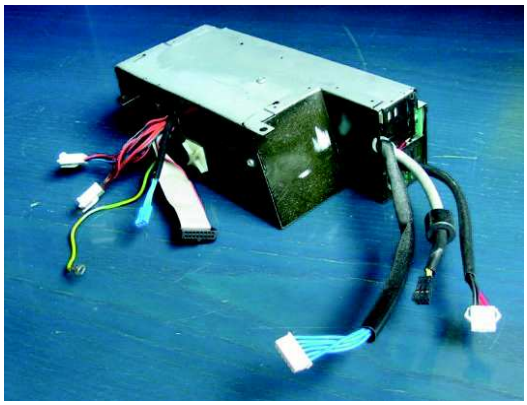
Technical features	
AC Input	230V AC 50/60 Hz Monophase with PFC
DC Output	160 V / 19 A 60 V / 2 A ± 15 V / 2 A 5 V / 2 A 8*14 V 0,2 A each 3.250 W
Dissipation	Forced ventilation
Dimensions	4U 19'' width 336 mm max. depth
Regulations	EN 60601 - 1 electromedical

Technical features	
AC Input	230 V AC 50/60 Hz Monophase with PFC
DC Output	48 V DC variable up-to 60 V DC Nominal current 20 A 30 A max. for 1 s Minimum power 1.500 W
Noise level	Less than 50 dBA
Dissipation	Forced ventilation
Dimensions	3U 19'' width 560 mm max. depth
Weight	5 kg
Regulations	EN 60601 - 1 electromedical

Switching Power Supply

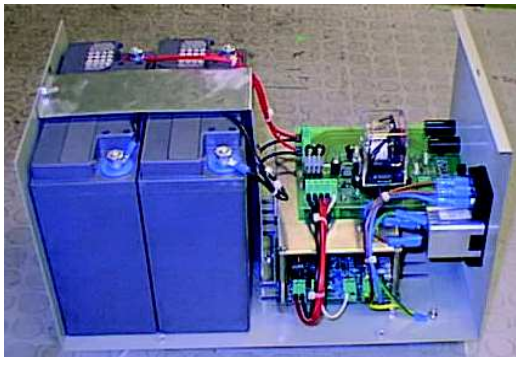
Switching Portable Power Supplies for Electrocardiogram Systems

Technical features	
AC Input	90 - 264 V AC 50/60 Hz Batteries 15,6 V DC 1,8 Ah
DC Output	9 different output V DC 90 W max. power TTL signals control TTL
Insulation	Double insulation
Dissipation	Forced ventilation
Dimensions	202 x 107 x 67 height (mm)
Regulations	EN 60601 - 1 electromedical



Special UPS for Portable Systems

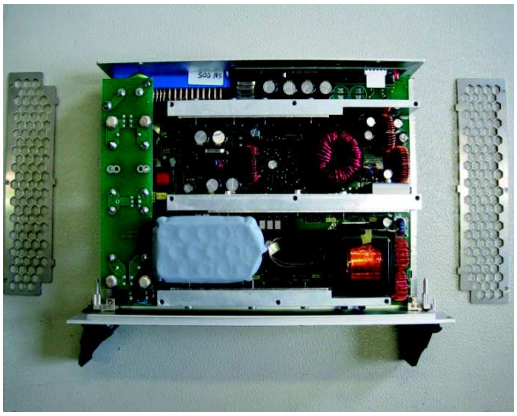
Technical features	
AC Input	230 V AC - 50 Hz
DC Output	Voltager 12 V DC / 24 V DC Nominal current 0,4 - 0,7 A 15 W
Batteries	N° 2 batteries 12 V DC 15 Ah Recharge time: 5 h
Dissipation	Natural Ventilation
Dimensions	200 height x 205 width x 350 depth
Weight	18 kg
Regulations	EN 60601 - 1 electromedical



Power Supply

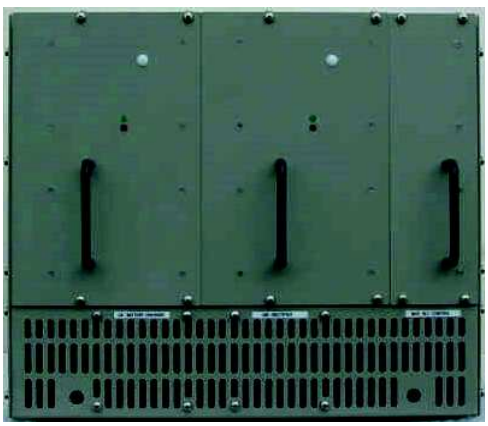
Power Supply for Naval Application

- Multi-voltage converter
- Parallelable
- Redundant
- VME +5V / +3.3V / ±12V



Energy Stations

DC power supply and battery charger dedicated to naval telecommunications systems to guarantee the continuity of energy supply via external batteries



Special Power Supplies

Special Power Supplies

Technical features	
Input	115÷160 V DC
Output	24÷35 V DC
Load absorbed current control	Analogic control

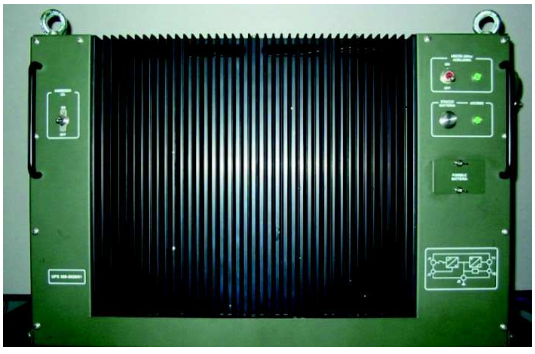
Special three phase power supplies

DC power supply for militar application

Technical features	
Input	400 V AC + N
Adjustable output voltage	50÷200 V DC
Adjustable output current	0÷35 A
Maximum power	7 kW
Dissipation	Forced ventilation

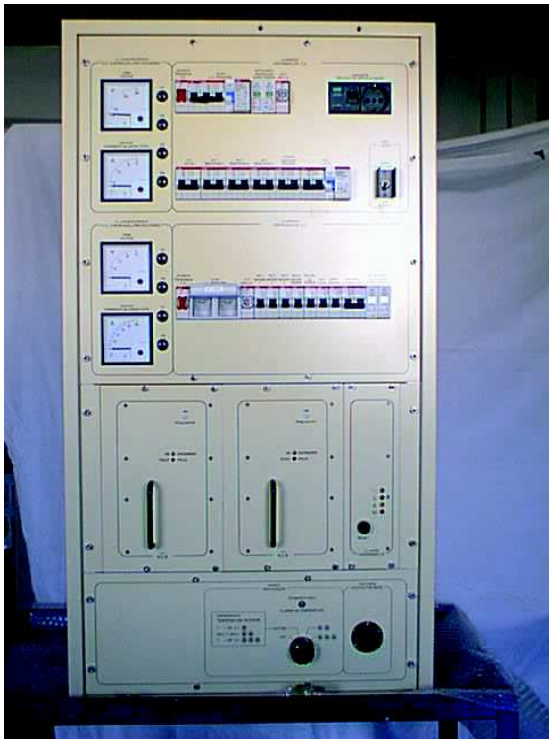
Special UPS

UPS for equipment designed and manufactured to ensure the continuity of the supply of energy by external batteries. Made of a self-supporting metal container with MS series connectors



Energy Distribution Systems

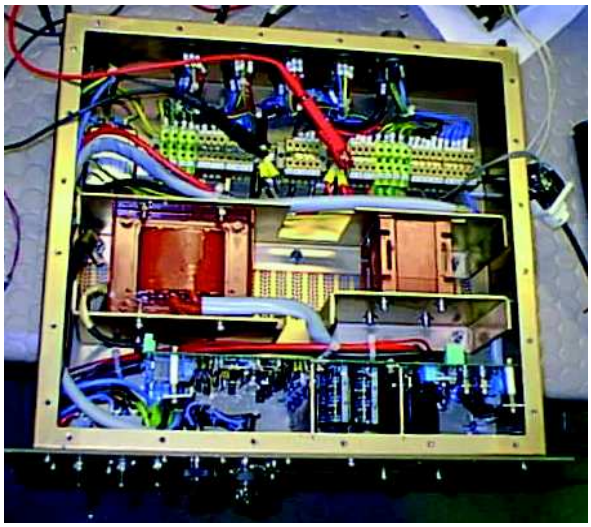
Energy Distribution Systems in Cabinets



AC and DC power distribution cabinets to TLC loads and military use services

Monophase Inverter

Technical features	
Input	24 V DC
Output	Multiplates on 5 power outlet 230 V AC
Power	300 VA
Dissipation	Natural ventilation



Energy Distribution Systems

Systems designed and assembled to distribute AC and DC energy to TLC and service loads

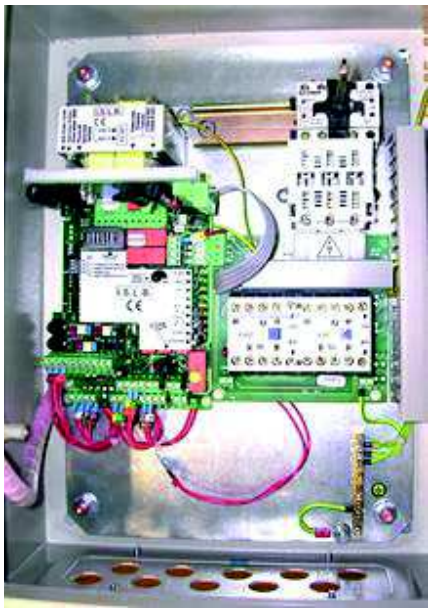
BMAD – Magnetic Sensor Module

Code	Sign	Supply
5600100	**BMAD10**	230 V AC
5600101	**BMAD10**	24 V AC
5600102	**BMAD10**	12 V DC

Technical features	
Mounting	DIN Rail
Output relay	1 NO / 1 NF (configurable negative positive protection)
Selectable features	Presence sensor Automatic detection stops after 30min Automatic detection stops after 60min 500 ms for each detection Derivative control frequency (fast or slow) Sensitivity detection setting

ISLB - Control Module for Doorway and Gates

Technical features	
Code	**5600110**
Sign	**QUADRO ISLB**
Dimensions	300x400 mm
Supply	230 V AC monophase 400 V AC three phase
Control	Rotation and phase failure (CRP)
Handled engine	To two speeds
Brake	Handled
Detection	Magnetic
Dead man control	Present
Modality	Automatic or semiautomatic
Interlocking	Yes for SAS
LED Orange	Operation
LED optionals	Red - green
Optional control	External lighting
Security regulations	Conformity to european standards
Security	Modules self-control
Security cells	Cancellation of movements (stop/inhibition)
Module test	Present
Working area	Accessibility to the public (ADMAP)
Engine shaft safety	Timed inversion
Time control	Opening/closing
Container box	Plastic/polyester Metal/stainless steel



ALLPA - Articulated Platform Lining Unit Module

Technical features	
Code	**5600120**
Sign	**ALLPA**
Dimensions	225x175x80 mm
Supply	24 V AC/DC
Degree of protection	IP55
Connections	Seals cable glands with variable diameter
Engine protection	Magnetic thermal switch model GV2-M
Engine power controlled	2,2 kW
Power selector	380/415 V

ALLPA - Telescopic Articulated Platform Alignment Module

Technical features	
Code	**5600121**
Sign	**ALLPATE**
Dimensions	225x175x80 mm
Supply	24 V AC/DC
Degree of protection	IP55
Connections	Seals cable glands with variable diameter
Engine protection	Magnetic thermal switch model GV2-M
Engine power controlled	2,2 kW
Power selector	380/415 V

Thermocontrolled Ventilation Unit

Thermocontrolled Ventilation Unit - 3 Fans

Code	Supply
4.800.005	220 V AC 50 Hz

Technical features	
Dimensions	482,8 x 220 x 44 mm
Consumption	28,8 W
Peak voltage	40 V DC (1 s)
Fan rotation control	Yes
Supply control	Yes
Degree of protection	IP20
Fan rotation control	Yes
Noise	48,0 dB
Alarm warning	Contact on the connector 9 Sub-D and LED red on the frontal panel
Air flow	600 m³/h
Operative temperature	-10°C / +70°C
Storage temperature	-40°C / +70°C
Fan MTBF	> 65000 hrs @ 40°C

This fan drawer has been designed to meet the specific requirements in the rail sector.
The control of the operation of the individual fans takes place electronically with a LED signal on the front panel and an output on the 9 Sub-D connector on the rear panel.
The electronic board is made in SMT technology. On the front panel there is a pin (M6) for the ground connection.

Thermocontrolled Ventilation Unit

Thermocontrolled Ventilation Unit - 6 Fans

Code	Supply
4.800.001	220 V AC 50 Hz
4.800.002	48 V DC +/- 15%

Technical features	
Dimensions	482,8 x 385 x 44 mm
Consumption	35 W
Degree of protection	IP20
Noise	43,0 db each fan
Air flow	1170 m³/h (195 m³/h single fan)
Indicators and warnings	LED Green "Power ON" indicates the presence of voltage LED Green "Fan ON" LED Red "Fan Fault" indicates that one of the fans is fault
Operative temperature	-10°C / +70°C
Storage temperature	-40°C / +70°C
Fan MTBF	> 70000 hrs @ 25°C

The thermocontrolled ventilation unit, located in the supplied temperature probe inside the cabinet, allows you to set, by the selector located on the front panel, the desired temperature to be maintained within a range of + 20 ° C to + 50 ° C.

The microprocessor on the electronic control board acts by varying the speed of the fans according to the temperature read by the provided probe, in order to reach and maintain the defined temperature.

If the temperature probe is not connected or is in fault, the microprocessor sets the fan speed at the maximum and simultaneously reports the probe fault with a blinking of the "Fan ON" LED located on the front panel.
The front panel also shows "Power ON" (green LED) and the fault of at least one of the 6 fans in the "Fan Fault" drawer (red LED).

Thermocontrolled Ventilation Unit

Thermocontrolled Ventilation Unit - 8 Fans

Code	Supply
4.800.007	48 V DC

Technical features	
Dimensions	482,8 x 220 x 44 mm
Consumption	25 W
Fan rotation control	Yes
Degree of protection	IP20
Supply control	LED Green on the front panel
Alarm warning	LED Red on the front panel
Noise	32,0 dB each fan
Air flow	672 m³/h
Operative temperature	-10°C / +70°C
Storage temperature	-40°C / +70°C
Fan MTBF	> 70000 hrs @ 40°C

The drawer is equipped with 8 fans characterized by a low noise level.
Fans operation is performed electronically by means of a red LED located on the front panel indicating the fault of at least one of the 8 fans.
The drawer has been designed to be integrated into the mechanical structure of a 19 "rack and can be powered via connector from 2 separate sources with an indication by a green LED located on the front panel. Front panel provided with a filter panel.

Softstarter

DSF – Three Phase Static Starters

Technical features	
Supply	400 V AC
Available supplies on request	220 V AC/ 500 V AC/ 690 V AC
Adjustment	Digital on 3 phases
Start/Stop	By voltage free contact or external signal
End of starting	NO contact
Status signal	NO contact
Communication interface	RS - 232 / RS - 485
Feature	Two motors - two ramp functions
Energy saving	Yes
By-Pass	Optional predisposition
Parameters	Display for programming and visualization of all parameters

Code	Sign	Input voltage	Nominal current	Maximum current 10"
4.740.099	**DSF/400/12/D**	400 V AC	12 A	50 A
4.740.100	**DSF/400/22/D**	400 V AC	22 A	80 A
4.740.101	**DSF/400/30/D**	400 V AC	30 A	120 A
4.740.102	**DSF/400/50/D**	400 V AC	50 A	160 A
4.740.103	**DSF/400/80/D**	400 V AC	80 A	250 A
4.740.104	**DSF/400/110/D**	400 V AC	110 A	370A
4.740.105	**DSF/400/150/D**	400 V AC	150 A	500 A
4.740.106	**DSF/400/180/D**	400 V AC	180 A	600 A
4.740.107	**DSF/400/220/D**	400 V AC	220 A	700 A
4.740.108	**DSF/400/270/D**	400 V AC	270 A	950 A
4.740.109	**DSF/400/350/D**	400 V AC	350 A	1200 A
4.740.136	**DSF/400/500/D**	400 V AC	500 A	1800 A
4.740.110	**DSF/400/600/D**	400 V AC	600 A	2000 A
4.740.111	**DSF/400/800/D**	400 V AC	800 A	3000 A
4.740.137	**DSF/400/1000/D**	400 VA C	1000 A	4000 A
4.740.138	**DSF/400/1200/D**	400 V AC	1200 A	5000 A

DSF - Accessories

Code	Article description
4.740.186	Programming keyboard
4.740.187	Cable l = 500 mm for remote control

Softstarter

SSA - Three Phase Static Starters

Technical features	
Supply	400 V AC ± 15% / 60 Hz ± 3%
Available supplies on request	500 V AC/690 V AC
Adjustment	Analogic Control Partialization on 3 phases
Kick-Started	For high starting torque
Configurations	Calibration with direct access to working parameters and internal access for special functions
Current control	Maximum current delivered
Deceleration	Controlled - Excludable
Run command	Isolated circuit
Auxiliary supply monophase	230 V AC ± 15%
Starting control mode	Voltage ramp with limit at the Imax. value
By-Pass	Integrated
Stop mode control	Selectable torque: free or with a voltage ramp with positive torque

Code	Sign	Input voltage	Nominal current	Maximum current 10"
4.740.365	**SSA/400/15**	400 V AC	15 A	60 A
4.740.366	**SSA/400/22**	400 V AC	22 A	88 A
4.740.367	**SSA/400/30**	400 V AC	30 A	120 A
4.740.368	**SSA/400/45**	400 V AC	45 A	180 A
4.740.369	**SSA/400/60**	400 V AC	60 A	2400 A
4.740.370	**SSA/400/72**	400 V AC	72 A	2900 A
4.740.371	**SSA/400/85**	400 V AC	85 A	340 A
4.740.372	**SSA/400/105**	400 V AC	105 A	400 A

Braking Modules

MFS-MFR - Groups Braking Control

Analog Control - DC Injection - AC Motors

Code	Sign	Input voltage	Network frequency	Nominal Current
4.710.005	**MFS/5/380V**	380 V AC	50/60 Hz	5 A
4.710.006	**MFR/10/380V**	380 V AC	50/60 Hz	10 A
4.710.007	**MFR/20/380V**	380 V AC	50/60 Hz	20 A

Analogic control

MFC - Groups Braking Control

Digital control - DC Injection - AC Motors
Intake counter on board

Code	Sign	Input voltage	Network frequency	Nominal current	Motor
4.710.040	**MFC/20/400 V**	400 V AC	50/60 Hz	15 A	7,5 KW 400 V AC
4.710.041	**MFC/30/400 V**	400 V AC	50/60 Hz	30 A	15 KW 400 V AC
4.710.042	**MFC/50/400 V**	400 V AC	50/60 Hz	50 A	22 KW 400 V AC
4.710.043	**MFC/75/400 V**	400 V AC	50/60 Hz	75 A	37 KW 400 V AC
4.710.044	**MFC/100/400 V**	400 V AC	50/60 Hz	100 A	55 KW 400 V AC

Intake counter on board

Note:
The operating cycle of the braking modules involves slowing-down but not the control of engine stopping. For security applications, a suitable device must be fitted.

Braking Modules

MFD - Groups Braking Control

Digital Control - DC Injection - AC Motors
External insertion counter

The module automatically checks the engine travel / stop circuit by imposing stop cycles and safety cycles.
Different work modes can also be selected with internal DIP Switches for different types of motor loads to handle.

Code	Sign	Input voltage	Network frequency	Nominal current	Motor
4.710.045	**MFD/50/400 V**	400 V AC	50/60 HZ	50 A	22 KW 400 V AC
4.710.046	**MFD/75/400 V**	400 V AC	50/60 HZ	75 A	37K W 400 V AC
4.710.047	**MFD/100/400 V**	400 V AC	50/60 HZ	100 A	55 KW 400 V AC
4.710.048	**MFD/150/400 V**	400 V AC	50/60 HZ	150 A	75 KW 400 V AC
4.710.049	**MFD/200/400 V**	400 V AC	50/60 HZ	200 A	110 KW 400 V AC
4.710.050	**MFD/300/400 V**	400 V AC	50/60 HZ	300 A	160 KW 400 V AC
4.710.051	**MFD/400/400 V**	400 V AC	50/60 HZ	400 A	200 KW 400 V AC
4.710.052	**MFD/500/400 V**	400 V AC	50/60 HZ	500 A	250 KW 400 V AC

Note:
The operating cycle of the braking modules involves the slowdown but not the control of the engine stopped. For security applications a suitable device must be fitted.

Temperature & Humidity Controllers

They control the heating functions, ventilation fans and bulkheads for temperature and humidity control.
Its standard cycle allows the command programming of a series of timing of clockwise and anti-clockwise rotation times of dryer fans, interrupted by a programmable time pause.
The humidity control provides the opening and closing control of shutters according to the humidity value measured by a sensor.
The command in the base version is a relay (optional analogic) and can be set for one or two different levels of humidity.
The temperature control includes a relay output to control the heating elements.

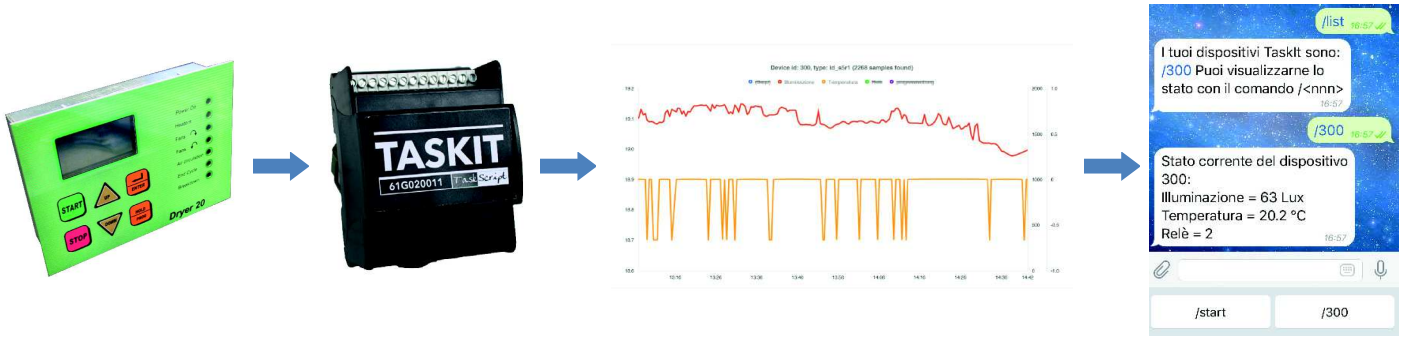
DRYER - Temperature & Humidity Controllers

Code	Sign	Input voltage	Insulation
7.810.014	**DRYER20**	24 V AC	Not isolated
7.810.016	**MFS/5/380**	24 V DC	Isolated
7.810.017	**MFS/5/380**	220 V AC	Isolated

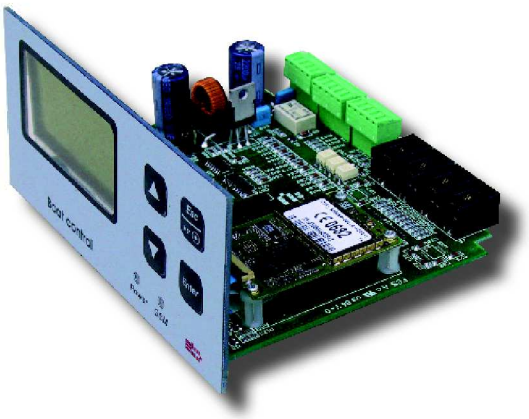
DRYER - Slave ModBUS Temperature & Humidity Controllers

Code	Sign	Input voltage	Insulation
7.810.018	**DRYER20/MS/24 V AC**	24 V AC	Not isolated
7.810.019	**DRYER20/MS/24 V DC**	24 V DC	Isolated
7.810.020	**DRYER20/MS/220 V AC**	220 V AC	Isolated

Integrated Solutions



Integrated Solutions



Integrated Solutions

ElectrOnline - Automation for Switches

DIQ - For Differential - Bipolar switches

Protection and automatic power supply reset
Remote reset

Code	Sign	Pole	Differential current	Current flow
5100020	**DIQ**	2 pole	0,03 A	16 A
5100021	**DIQ**	2 pole	0,03 A	25 A
5100022	**DIQ**	2 pole	0,03 A	40 A
5100023	**DIQ**	2 pole	0,03 A	63 A
5100120	**DIQ**	2 pole	0,30 A	16 A
5100121	**DIQ**	2 pole	0,30 A	25 A
5100122	**DIQ**	2 pole	0,30 A	40 A
5100123	**DIQ**	2 pole	0,30 A	63 A

DIQ - For Differential Switches - Quadriple

Protection and automatic power supply reset
Remote reset

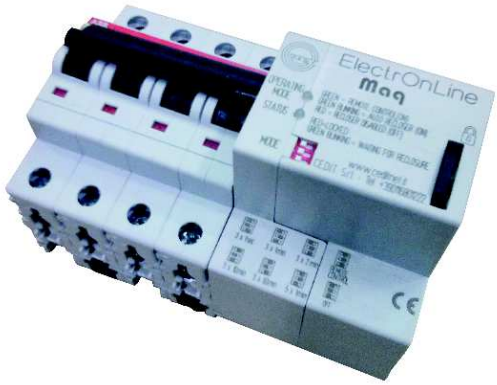
Code	Sign	Pole	Differential current	Current flow
5100040	**DIQ**	3 pole + neutral	0,030 A	25 A
5100041	**DIQ**	3 pole + neutral	0,030 A	40 A
5100042	**DIQ**	3 pole + neutral	0,030 A	63 A
5100140	**DIQ**	3 pole + neutral	0,30 A	25 A
5100141	**DIQ**	3 pole + neutral	0,30 A	40 A
5100142	**DIQ**	3 pole + neutral	0,30 A	63 A

ElectrOnline - Automation for Switches

MAQ - For Magneto thermic - Bipolar switches

Protection and automatic power supply reset
Remote reset
Relay status signaling

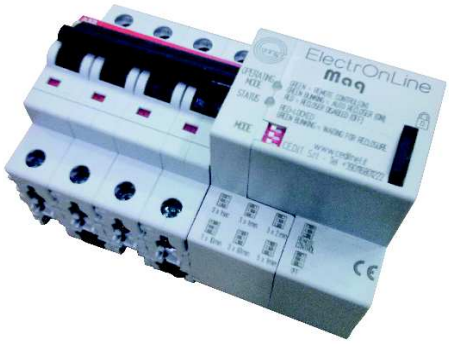
Code	Sign	Pole	Short circuit current	Current flow	Curve
5200020	**MAQ**	2 pole	6 kA	6 A	C
5200021	**MAQ**	2 pole	6 kA	10 A	C
5200022	**MAQ**	2 pole	6 kA	16 A	C
5200023	**MAQ**	2 pole	6 kA	20 A	C
5200024	**MAQ**	2 pole	6 kA	25 A	C
5200025	**MAQ**	2 pole	6 kA	32 A	C
5200026	**MAQ**	2 pole	6 kA	40 A	C
5200027	**MAQ**	2 pole	6 kA	50 A	C
5200028	**MAQ**	2 pole	6 kA	63 A	C



MAQ - For Magnetic Thermal Switches - Quadruple

Protection and automatic power supply reset
Remote reset
Relay status signaling

Code	Sign	Pole	Short circuit current	Current flow	Curve
5200040	**MAQ**	4 pole	10 kA	6 A	C
5200041	**MAQ**	4 pole	10 kA	10 A	C
5200042	**MAQ**	4 pole	10 kA	16 A	C
5200043	**MAQ**	4 pole	10 kA	20 A	C
5200044	**MAQ**	4 pole	10 kA	25 A	C
5200045	**MAQ**	4 pole	10 kA	32 A	C
5200046	**MAQ**	4 pole	10 kA	40 A	C
5200047	**MAQ**	4 pole	10 kA	50 A	C
5200048	**MAQ**	4 pole	10 kA	63 A	C



ElectrOnline - Automation for Switches

MA - DIQ - For Magneto thermic - Differential - Bipolar switches

Protection and automatic power supply reset
Remote reset
Relay status signaling

Code	Sign	Pole	Short circuit current	Differential current	Current flow	Curve
5200020	**MA-DIQ**	2 pole	6 kA	30 mA	6 A	C
5200021	**MA-DIQ**	2 pole	6 kA	30 mA	10 A	C
5200022	**MA-DIQ**	2 pole	6 kA	30 mA	16 A	C
5200023	**MA-DIQ**	2 pole	6 kA	30 mA	20 A	C
5200024	**MA-DIQ**	2 pole	6 kA	30 mA	25 A	C
5200025	**MA-DIQ**	2 pole	6 kA	30 mA	32 A	C
5200120	**MA-DIQ**	2 pole	6 kA	300 mA	6 A	C
5200121	**MA-DIQ**	2 pole	6 kA	300 mA	10 A	C
5200122	**MA-DIQ**	2 pole	6 kA	300 mA	16 A	C
5200123	**MA-DIQ**	2 pole	6 kA	300 mA	20 A	C
5200124	**MA-DIQ**	2 pole	6 kA	300 mA	25 A	C
5200125	**MA-DIQ**	2 pole	6 kA	300 mA	32 A	C

MRT - Earth Resistance Meter

The MRT device, coupled to an ElectrOnline motor control, disassociates the automatic reset switch operation due to a temporary event of a permanent earth fault, providing the reset of the associated differential switch

Code	Sensibility
5500001	30 mA
5500002	300 mA

ElectrOnline - Automation for Switches

DIPRO - Self-resetting Adjustable Protections

Code	Sign	Current flow
5400001	**DIPRO**	25 A
5400002	**DIPRO**	32 A
5400003	**DIPRO**	63 A

CIR - Cassette Automatic Reset Switch

Magnetic thermal/differential protection in IP65 box with automatic reset on pure differential switch. Sensitivity and release currents with Imax = 63 A

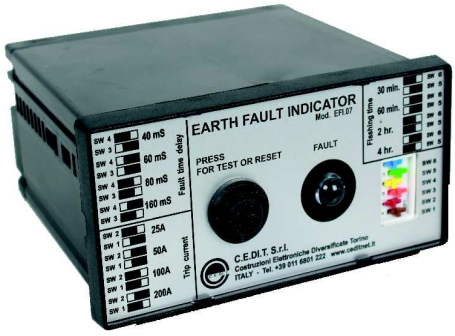
Code	Sign	Differential current	Current flow
5400101	**CIR**	30 mA	16 A
5400102	**CIR**	300 mA	25 A
5400103	**CIR**	300 mA	40 A

Earth Fault Indicators

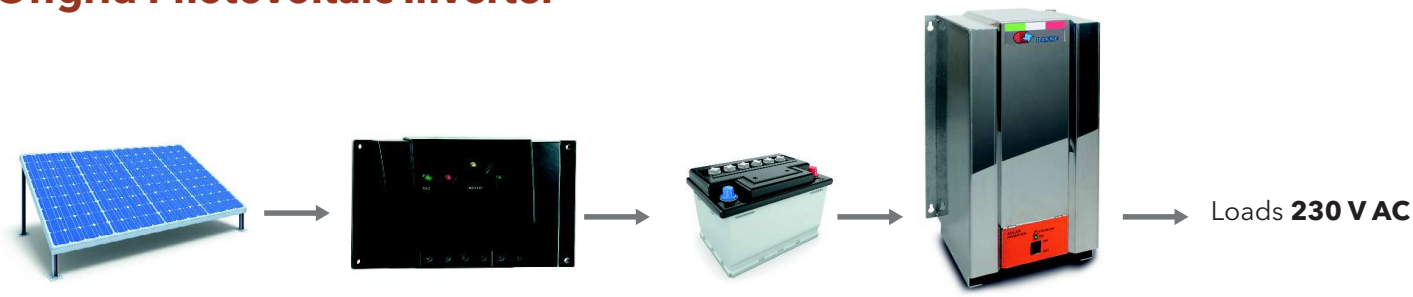
EFI - Earth Fault and Short Circuit Indicators

Earth and phase fault indicators with local and remote signaling, for cable installation in medium voltage electrical networks

Code	Sign	Discriminated current numbers	Mounting
5500100	**EFI02**	1	External on the wall
5500101	**EFI06**	4	External on the wall
5500102	**EFI07**	4	On the panel



Offgrid Photovoltaic Inverter



Photovoltaic source | Charge regulator | Batteries | Inverter Sim

ISM - Offgrid Photovoltaic Inverter

Code	Sign	Nominal power
60D010200	**ISM1K**	1 kW
60D015200	**ISM1K5**	1,5 kW

Electronics and cables connections protected by environmental agents and humidity.
Conformal Coating Type 1 -
Indoor Unconditioned
Pollution Grade 3 - EN 62109-1

Protections	
Under voltage input	Yes
Over voltage input	Yes
Short circuit in output	Yes
Input polarity inversion	No
Emergency manual block	Yes
Thermal protection	Yes
Remote control (telecommand)	Yes

Output	60D010200	60D015200
Type	Monophase	Monophase
Connections	Terminal screw	Terminal screw
Voltage	230 V AC	230 V AC
Maximum current	4,3 A	8,7 A
Frequency	50 Hz	50 Hz
Nominal power	1 kW	1,5 kW
Peak of power	2 kW	3 kW

Input from photovoltaic field	60D010200	60D015200
Connections	Cables	Cables
Voltage	21,6÷31,2 V DC	21,6÷31,2 V DC
Maximum Current	55 A	100 A
Nominal Power	1 kW	1,5 kW

Features	
Maximum load efficiency	80%
Minimum input voltage for automatic switch-on	Yes
Minimum output power for automatic switch-on	Yes
Minimum input voltage for re-start	Yes
Restart after stop	Automatic
Signaling LED	On / Off / Stand-by fault - limitations

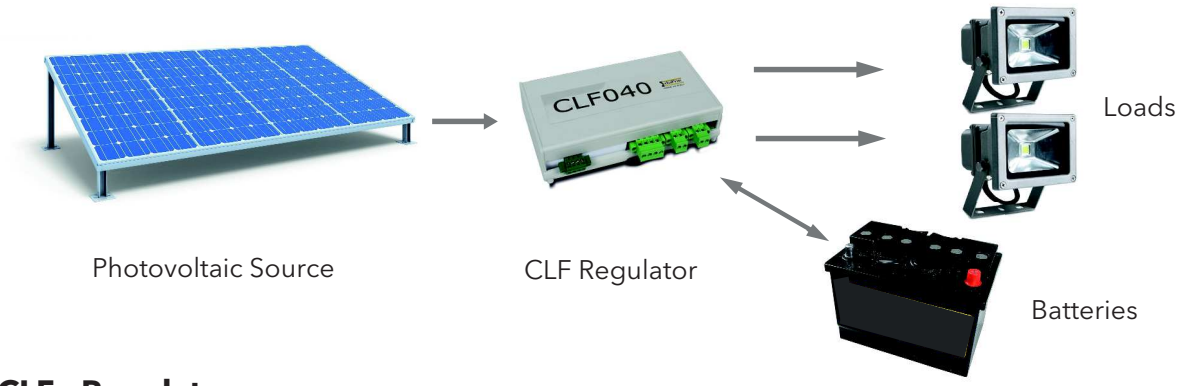
General Data	60D010200	60D015200
Rules	CE - EN 60950	CE - EN 60950
Working Temperature	0÷+40°C	0÷+40°C
Working Humidity	< 90%	< 90%
Ventilation	Forced (from bottom to top)	Forced (from bottom to top)
Mounting	Holes	Holes
IP	20	20
Weight	16 kg	21 kg
Dimensions	250 x 200 x 430 mm	250 x 200 x 430 mm

Offgrid Kit

KIF - Photovoltaic Offgrid Kit

Code	Sign	Photovoltaic panels	Charge regulator	Batteries	Inverter	LED Lamps	Mechanical Support
40D001001	**KIF10**	N° 1 40 Wp	N° 1 5 A	N° 1 gel 12 V 60 Ah	No	N° 3 LED lamps E27 12V DC 8,5W natural light	Yes
40D011001	**KIF30**	N° 1 120 Wp	N° 1 10 A	N° 1 gel 12 V 185 Ah	N° 1 12 V 200 W 230 V AC	N° 5 LED lamps E27 230 V AC 8,5 W natural light	No
40D011002	**KIF40**	N° 2 195 Wp	N° 1 20 A	N° 2 gel 12 V 230 Ah	N° 1 60D010200	N° 8 LED lamps E27 230 V AC 8,5 W natural light	No
40D011003	**KIF60**	N° 6 195 Wp	N° 1 45 A	N° 4 gel 12 V 230 Ah	N° 1 60D015200	N° 8 LED lamps E27 230 V AC 8,5 W natural light	No

Charge Regulator and LED Lighting



CLF - Regulator

Code	Sign	LED handled
30D004100	**CLF40**	12 V - 40 W

Exit to LED armor	
Connections	Extruder screw terminals
Output numbers	2 parallelable
Voltage	16÷35 V DC
Current	200÷800 mA programmable
Minimal programmable current step	50 mA
Maximum power LED	40 W

Feature	
Temperature sensor for battery end-charging voltage correction	Yes
M.P.P.T.	Yes
Restart	Automatic
Crepuscular function	Yes
Illumination mode	Normal and energy saving
LED timer turn on/off	Programmable for normal and saving condition
LED current	Programmable for normal and saving condition
Charging battery messagge	LED Green
Failure messagge	LED Red

General data	
Rules	CE - EN 62109
Working Temperature	-10÷+45°C
Working Humidity	< 90%
Ventilation	Natural
Mounting	DIN Rail
Weight	300 gr
Dimensions	155x107x30 mm

Input from photovoltaic panel	
Connections	Extruder screw terminals
Output Numbers	2
MPP voltage	15÷25 V DC
Max. tension	28 V DC
Single input power	80÷150 W

Output to battery	
Connections	Extruder screw terminals
Nominal Voltage	12 V

Protections	
Battery minimum voltage	Yes
Battery end-of-charge voltage	Yes
Internal short circuit	Yes

Charge Regulator and LED Lighting

CLF is the electronic device that monitors **battery recharging** from a **photovoltaic power source** and manages power to an illuminator equipped with 1 or 2 arrays of LEDs, ranging from 6 to 12 devices.

Battery Charger Section

It checks battery charging and is designed to operate with variable power panels ranging from 80 up-to 150 W, with MPPT peak power ranging between 14 and 19 V.
The maximum power point can be controlled by the management module for optimum use of the photovoltaic panels by means of a PWM signal.
The battery charger is equipped with a static switch, to prevent a battery back to the photovoltaic panel, reducing the losses during the charging period to irrelevant values.
It is also equipped with a temperature sensor for adapting the maximum end-charge voltage as a function of temperature.
The battery charger provides the panel voltage value to the control module for the crepuscular switch function.

LED Illuminator Management Section

The management module consists of three functional blocks:

- Current sensor block for aperometric management of battery charging;
- Dimmer LED block to powerfully illuminate the illuminator;
- Process Block to control all functions.

The current sensor block is dimensioned asymmetrically with a full scale of 25 A charge current, capable of contemplating the parallel of two battery chargers, and a full scale of the current consumption of 5 A. The reading sampling of battery current in input and output allows the amperometric calculation of the incoming and outgoing battery of the battery, thus having the real amount of available energy available in % available which will be used to manage the lamp ignition states. The LED dimmer block consists of two channels that can power two arrays of LEDs each consisting of a minimum of 6 to a maximum of 12 devices (a minimum working voltage of 16 V and a maximum of 36 V) with a programmable current from 200 to 600 mA (in step of 50 mA).
The processor block provides the following functions:

- Run-time calculation and control of the maximum power point of the photovoltaic generator;
- Amperometric calculation of the accumulated energy available in the battery for proper illumination management; in the initial board setting, the Amper / Hour (Ah) value of the batteries used will be loaded, which will serve to the process to calculate the residual percentage, by evaluating in discharge 1 A count as 1 A while in charge 1 A is counted as 0, 90 A;
- Battery voltage management: when a voltage of less than 10.8 V is reached, the system will be blocked under battery voltage and will be unlocked when the battery exceeds 12.4 V.

At initial power-on, or at a system reset, the amperometric counter will be "charged" to 80%; the alignment will occur automatically when later the following conditions are met:
1) Minimum value = 20%: will be forced to 20% when the counter reaches a 20% drop or when the battery voltage drops to 10.8 V;
2) Maximum value = 100%; will be forced 100% when the meter reaches 100% up, even if the battery still absorbs current.

Lighting Management

Night lighting is activated by checking three conditions:

1) Hourly enable by the internal timer;
2) Enable by crepuscular sensor;
3) Enable by the charge level in the battery.

Hourly enable provides for a night-time switch-on to a preset hour, and a morning switch-off at another preset hour. Within this period, it is possible to set the start time of the night-time power saving time and the end-time of the savings with a further setting.
Finally, the intensity at which the lamp is turned on depends on the battery charge state. It is possible to manage the full working time bands and work in power reduction by means of an internal clock with a suboption of the crepuscular lighting sensor detected directly by the photovoltaic panel:

- Time zone of normal ignition (conditioned by the crepuscular sensor);
- Low power brightness time zone (energy saving);
- Time zone of possible re-ignition with shutdown conditioned by the crepuscular sensor.

LED Photovoltaic Lighting

KLF uses the internal controller 31D041000 CLF40.
See the device features that describe the applicable features and scenarios.

KLF - Photovoltaic Lighting

The KLF components are sized for an autonomy of 3 days

Code	Sign	Photovoltaic panels	Batteries regulator - LED	Batteries	Lighting LED	Metallic box container
31D100630	**KLF30**	N° 1 100 WP	N° 1 30D041000	N° 1 12V 60 Ah	30 W	Head pole
31D130830	**KLF30**	N° 1 135 WP	N° 1 30D041000	N° 1 12V 80 Ah	30 W	Head pole
31D201230	**KLF30**	N° 2 100 WP	N° 1 30D041000	N° 2 12V 60 Ah	30 W	Head pole

Electronics and cabling connections
protected by environmental agents and humidity.
Conformal Coating Type 1 - Indoor Unconditioned
Pollution Grade 3 - EN 62109-1

Power Supply with Photovoltaic Input

Photovoltaic source

CLF Power supply

LOADS **12 V DC**

LOADS **24 V DC**

ALF - Power Supply 30 W

Code	Sign	Output voltage	Output current	Output over voltage protection
11D012000	**ALF30**	12 V DC	2,5 A	> 14 V DC
11D024000	**ALF30**	24 V DC	1,25 A	> 27 V DC

Strings Connection Box

SPS - Connection Box for Photovoltaic Parallel Strings

Technical features	
Input	Up-to 800 V DC
Input protections	15 A fuse switch disconnector
Output	Up-to 800 V DC
IP Grade	66

Code	Sign	Strings
80D002000	**SPS2**	2
80D003000	**SPS3**	3
80D004000	**SPS4**	4
80D005000	**SPS5**	5
80D006000	**SPS6**	6
80D008000	**SPS8**	8
80D009000	**SPS9**	9

Offgrid Photovoltaic Inverter for Pumping Systems

Pumping System Components

Photovoltaic source

Connection box
for parallel strings

IPT Inverter

Pump for water
extraction

Photovoltaic Field
The photovoltaic field must be able to deliver the power needed to enable the inverter module to function properly.
The single string must be composed of a number of parallelable panels in series whose voltage must be in the range of 670÷725 V DC.
The global power of the string will be a function of the number of single string series panels, orientated in the range of 4,75÷5 kW.
The number of parallel strings must be closely related to the maximum power of the inverter, consider:
PV power field = power inverter x 1,1.

Box String
It allowes connections of the various strings of panels in parallel.

Photovoltaic Inverter
The power of this module must be related to the power of the three-phase pump, consider:
Power Inverter = Power Pump x 1.2.

Three phase Pump
It must be predisposed for operation at 400 V AC and for a frequency of 50 Hz and must be of power proportional to both the photovoltaic system and the inverter module.

Offgrid Photovoltaic Inverter for Pumping Systems

Sizing System Components

The high variability of pumps and photovoltaic panels offerings does not allow a detailed dimensioning, since situation vary.
In the table below there are some general guidelines on sample sizing values.
For the power of the pumps (in HP), the most widely available models were taken as reference.

Inverter code	Inverter power Power output	Power maximum mechanical pump	Power maximum mechanical pump	Single string voltage (Voc)	Suggested power PV field
20D004000	4,0 kW	3,0 kW	4,0 HP	670÷725 V	4,5 kW
20D005500	5,5 kW	4,0 kW	5,5 HP	670÷725 V	6,0 kW
20D007500	7,5 kW	5,5 kW	7,5 HP	670÷725 V	8,5 kW
20D011000	11,0 kW	7,5 kW	10,0 HP	670÷725 V	12,0 kW
20D015000	15,0 kW	11,0 kW	15,0 HP	670÷725 V	16,5 kW
20D018500	18,5 kW	13,0 kW	17,5 HP	670÷725 V	20,5 kW
20D022000	22,0 kW	15,0 kW	20,5 HP	670÷725 V	24,5 kW
20D030000	30,0 kW	22,0 kW	30,0 HP	670÷725 V	33,0 kW

In the following table has been fixed the maximum pump power ratings choosing a photovoltaic panel of 250 Wp of power and a voltage Voc of 36,2 V.
With this concrete data, the actual sizing of the single string and the number of strings of the photovoltaic field has been extrapolated. The single string can be composed of 19/20 panels.
Next, based on the power of the pump used, it's possible to calculate the number of strings in parallel and then the total power of the photovoltaic field.
This application example has the main purpose of highlighting how from the maximum indicative values (previous table), according to the panel that the customer can choose, it's possible to get an exact count.
The count shows how to save on the single string or total power.
This approach is important because, if you do not have pre-existing installations where you need to use the material you have already purchased, you can optimize the implant according to the availability of panel models in the market.

Inverter code	Single string power	Number of panels for string	Number of strings	Power of PV field
20D004000	4,75 kW	19	1	4,75 kW
20D005500	5,0 kW	20	1	5,0 kW
20D007500	4,75 kW	19	2	9,5 kW
20D011000	5,0 kW	20	2	10,0 kW
20D015000	4,75 kW	19	3	14,25 kW
20D015000	5,0 kW	20	3	15,0 kW
20D018500	4,75 kW	19	4	19,0 kW
20D022000	4,75 kW	19	5	23,75 kW
20D030000	5,0 kW	20	5	25,0 kW
20D030000	5,0 kW	20	6	30,0 kW

Offgrid Photovoltaic Inverter for Pumping Systems

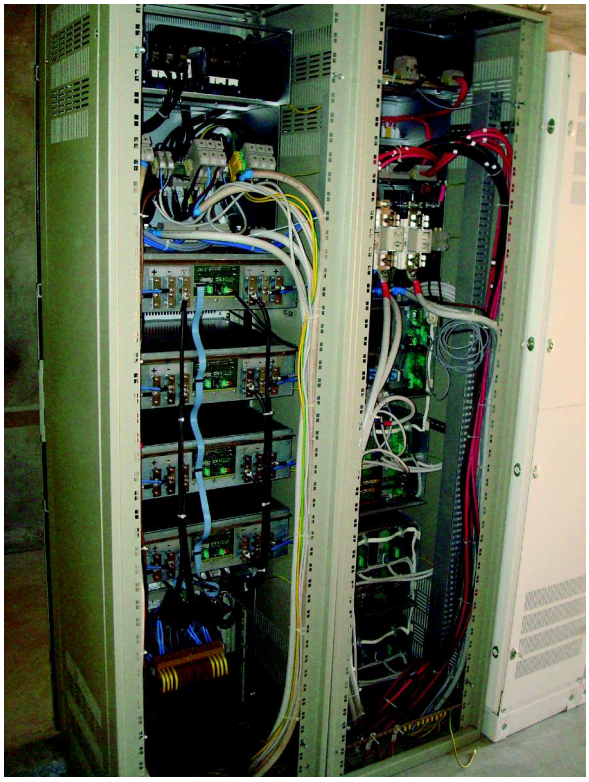
IPT - Offgrid Three Phase Photovoltaic Inverter

Code	Sign	Continue power pump	Mechanical power pump	Max. current pump	Photovoltaic field Nominal power	Photovoltaic field Max. current
20D004000	**IPT4K**	4 kW	2÷4 HP 1,4÷3 kW	9,4 A	4,2 kW	7 A
20D005500	**IPT5K5**	5,5 kW	2,7÷5,5 HP 1,9÷3,8 kW	12,5 A	5,8 kW	11 A
20D007500	**IPT7K5**	7,5 kW	3,7÷7,5 HP 2,6÷5,3 kW	16 A	8 kW	15 A
20D011000	**PT11K**	11 kW	5,5÷11 HP 3,8÷7,7 kW	24 A	12 kW	22 A
20D015000	**IPT15K**	15 kW	7,5÷15 HP 5,5÷11 kW	31 A	16 kW	29 A
20D018500	**IPT18K5**	18,5 kW	9,2÷18,5 HP 6,5÷13 kW	38 A	20 kW	37 A
20D022000	**IPT22K**	22 kW	11÷22 HP 8÷16 kW	45 A	24 kW	43 A
20D030000	**IPT30K**	30 kW	15÷30 HP 10,5÷21 kW	60 A	32 kW	59 A

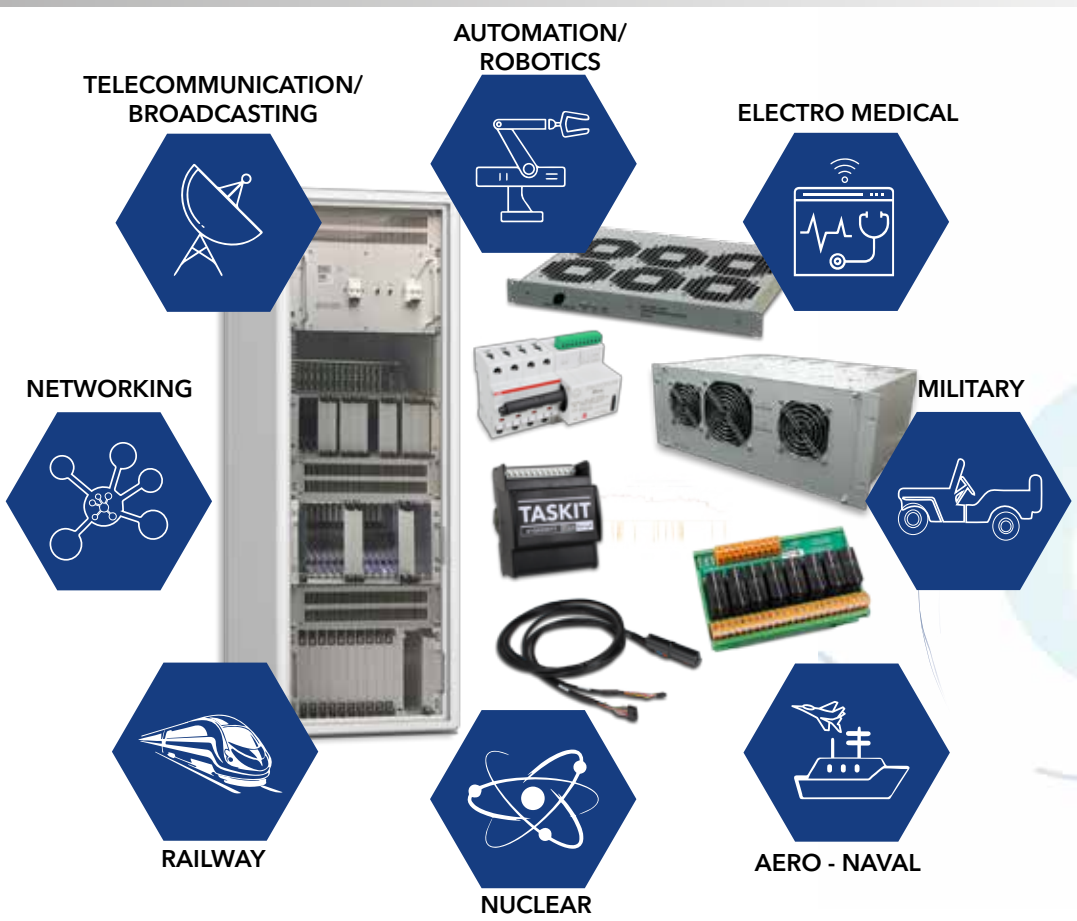
Electronics and cabling connections
protected by environmental agents and humidity.
Conformal Coating Type 1 - Indoor Unconditioned
Pollution Grade 3 - EN 62109-1

Examples of Offgrid Installations

Installation at the Haiti Hospital Structure



MARKET SECTORS



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