



**MODULAR BREAKERS
and
ACCESSORIES**



www.friggeri.com/modulari

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FRIGGERI

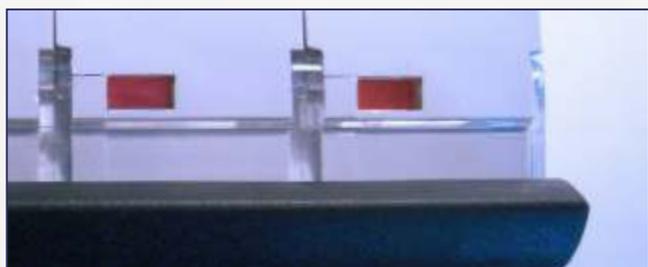
DIN rapid fixing system



Lockable lever by seal



Useful status windows



Transparent label holder



Robust screw terminals



Rapid coupling system



Quality certificates for the range





Construction and features

Shape and design at the state of the art. Elegant in appearance, the cover and the lever on the curved side allow a simple and natural maneuver.

Transparent snap label holder.

Central friction function to indicate the status and preventing the accidental reset.

Very high electrical short circuit capacity.

Endurance up to 6.000 cycles.

Ready for the installation of the tampering prevention seal.

Useful status windows to display the breaker operation and status.

Robust screw terminals and large terminals.

Terminal block designed to connect «U» shape cable lugs.

Din rapid fixing system, stable and with really fast locking tools.

Modular circuit-breakers up to 125A and accessories for low voltage installations

Elettroapparecchiature Friggeri distribute the new range of modular circuit breakers born to be assembled on a DIN35 rail projected for electric system control and protection. The offer is renewed and expanded with new devices characterized by innovative technical solutions, wich allow easy handling and greater functionality.

The full range is composed by:

- Circuit breakers from 6 to 125A capacity, 10kA breaking capacity and modularity of 1 or 1,5 modules each pole depending on max. current and breaking capacity;
- Breakers with residual current protection;
- Residual current swithes without incorporeted overcurrent protection;
- modular manual swithces;
- accessories as pushbutton, transformers, buzzers, contactors and discharger for DC..

The range of electrical accessories has been designed to be completely coupled to all switches and to offer more integrated functions.



Certified quality

To confirm the quality of the *Elettroapparecchiature Friggeri* modular system there is the cooperation with Jovean and Rogy, one of the world's leading manufacturers specialized in modular equipments.

All the products are compliant with european rules like **CEI EN 60898-1** for MCBs and **CEI EN 61009** for RCDs. All the product have been certified by the major international institutes respecting its imposed strict parameters.



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Modular circuit breakers with «C» curve 10kA



Safe terminals

They assure a simple and rapid installation, thanks to the high torque capability can also be used with electric and pneumatic screwdriver. Suitable cable up to 25 sqmm and connection with «U» shape wire terminal capability.

Extraordinary DIN connection

Rapid and stable mounting on a DIN rail thanks to the fast locking fixing tools.

High breaking capacity

10kA max breaking capacity for all the range models.

Transparent label holder

Useful and for easy identification.

Status window

Useful and made for an immediate identification.

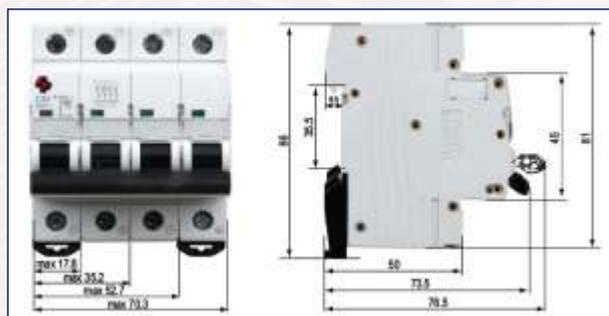
Sealable lever

Ready to be equipped with security seal.

Rated voltage
220/400V
Breaking capacity
10kA
Electrical insulation
6,2kV
Rated frequency
50/60Hz
Estimated life
10.000 cycles
Terminal capability
up to 25mmq
Max torque
2.0Nm
Fixing DIN rail
standard 35mm



Module dimensions



In(A)	Poles	Mod	Model no.	Pcs packing	Cod.(EAN13)	
6	1	1	FR-MG106/10	12	8033971757422	1
10	1	1	FR-MG110/10	12	8033971757439	2
16	1	1	FR-MG116/10	12	8033971757446	3
20	1	1	FR-MG120/10	12	8033971757453	4
25	1	1	FR-MG125/10	12	8033971757460	5
32	1	1	FR-MG132/10	12	8033971757477	6
40	1	1	FR-MG140/10	12	8033971757484	7
50	1	1	FR-MG150/10	12	8033971757491	8
63	1	1	FR-MG163/10	12	8033971757507	9
6	2	2	FR-MG206/10	6	8033971757514	10
10	2	2	FR-MG210/10	6	8033971757538	11
16	2	2	FR-MG216/10	6	8033971212686	12
20	2	2	FR-MG220/10	6	8033971757545	13
25	2	2	FR-MG225/10	6	8033971757552	14
32	2	2	FR-MG232/10	6	8033971212693	15
40	2	2	FR-MG240/10	6	8033971757569	16
50	2	2	FR-MG250/10	6	8033971757576	17
63	2	2	FR-MG263/10	6	8033971212709	18
6	3	3	FR-MG306/10	4	8033971757583	19
10	3	3	FR-MG310/10	4	8033971757590	20
16	3	3	FR-MG316/10	4	8033971212716	21
20	3	3	FR-MG320/10	4	8033971757606	22
25	3	3	FR-MG325/10	4	8033971757613	23
32	3	3	FR-MG332/10	4	8033971212723	24
40	3	3	FR-MG340/10	4	8033971757620	25
50	3	3	FR-MG350/10	4	8033971757637	26
63	3	3	FR-MG363/10	4	8033971212730	27
6	4	4	FR-MG406/10	3	8033971757644	28
10	4	4	FR-MG410/10	3	8033971757651	29
16	4	4	FR-MG416/10	3	8033971212747	30
20	4	4	FR-MG420/10	3	8033971757668	31
25	4	4	FR-MG425/10	3	8033971757675	32
32	4	4	FR-MG432/10	3	8033971212754	33
40	4	4	FR-MG440/10	3	8033971757682	34
50	4	4	FR-MG450/10	3	8033971757699	35
63	4	4	FR-MG463/10	3	8033971212761	36

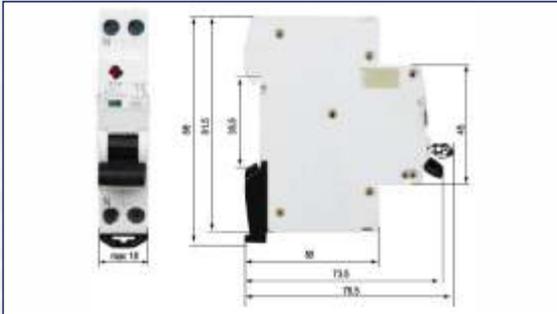
Compliant with IEC/EN 60898-1 rules.



Modular circuit breakers 1+N «C» curve 4,5kA

The breakers of the compact serie has a mounting system on a DIN rail rapid and stable thanks to the fast locking tool.
The neutral pole on the left is highlighted by a printing, terminals are robust and capacious, the connection is optimized by the good quality terminals.
The lever, practical and with ergonomic design, is ready for the security seal.
Transparent label holder, useful for an easy identification.
These devices can be coupled with the relases and all the available accessories.

Module dimensions



In(A)	Poles	Mod.	Model no.	Pcs packing	Cod.(EAN13)	
6	1+N	1	FR-MG1N06/45	12	8033971757897	37
10	1+N	1	FR-MG1N10/45	12	8033971757903	38
16	1+N	1	FR-MG1N16/45	12	8033971219838	39
20	1+N	1	FR-MG1N20/45	12	8033971757910	40
25	1+N	1	FR-MG1N25/45	12	8033971757927	41
32	1+N	1	FR-MG1N32/45	12	8033971757934	42

Modular circuit breakers 125A line «C» curve 10kA



In(A)	Poles	Mod.	Model no.	Pcs packing	Cod.(EAN13)	
80	1	1,5	FR-MG1080/10	12	8033971758139	43
100	1	1,5	FR-MG1100/10	12	8033971758177	44
80	2	3	FR-MG2080/10	6	8033971758146	45
100	2	3	FR-MG2100/10	6	8033971758184	46
80	3	4,5	FR-MG3080/10	4	8033971758153	47
100	3	4,5	FR-MG3100/10	4	8033971758191	48
80	4	6	FR-MG4080/10	3	8033971758160	49
100	4	6	FR-MG4100/10	3	8033971758207	50

Safe terminals

They assure a simple and rapid installation, thanks to the high torque capability can also be used with electric and pneumatic screwdriver.
Suitable cable up to 35 sqmm and connection with «U» shape wire terminal capability.

Extraordinary DIN connection

Rapid and stable mounting on a DIN rail thanks to the fast locking fixing tools.

Transparent label holder

Useful and for easy identification.

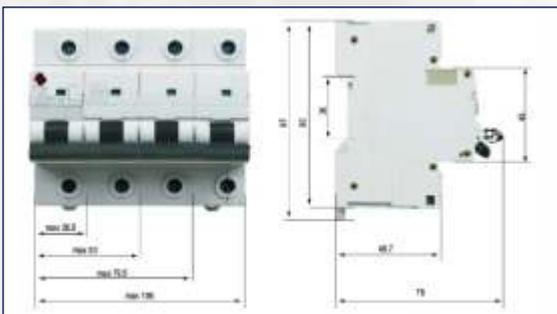
Accessories

These devices can be coupled with the releases and all the accessories.

Range uniformity

This line, with pleasing aesthetic and ergonomic, is identical to the switches of the line with less rated current.

Module dimensions



Compliant with IEC/EN 60898-1 rules.

Modular residual current circuit breakers



These breakers have the same ergonomic and aesthetically pleasing line of overcurrent circuit breakers. Can be coupled with all the accessories (releases, aux contacts, ecc.) Rapid and stable DIN rail assembly with the rapid locking system.

The connection terminals assure a simple, safe and rapid installation, thanks to its high torque capability can also be tightened with electric and pneumatic screwdriver. Suitable cable up to 25 sqmm and connection with «U» shape terminal capability. Transparent label holder, useful and made for an immediate identification.

Rated voltage
Residual classes
Breaking capacity
Rated frequency
Estimated endurance
Terminal capacity
Max terminal torque
Rated insulation class

220/400V
A, AC, G, S
10kA
50/60Hz
4.000 cycles
up to 25mmq
2.0Nm
IP20

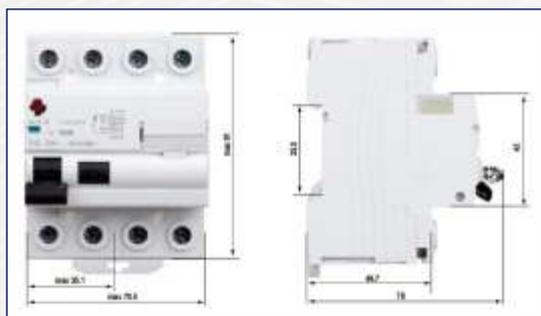
Poles	In (A)	Idiff (mA)	CL	Model	Pcs packing	Cod.(EAN13)	
2	25	30	AC	FR-DP225/30	1	8033971757705	51
2	25	300	AC	FR-DP225/300	1	8033971757712	52
2	25	30	A	FR-DP225/30A	1	8033971757729	53
2	25	300	A	FR-DP225/300A	1	8033971757736	54
2	40	30	AC	FR-DP240/30	1	8033971219753	55
2	40	300	AC	FR-DP240/300	1	8033971219760	56
2	40	30	A	FR-DP240/30A	1	8033971757743	57
2	40	300	A	FR-DP240/300A	1	8033971757750	58
2	63	30	AC	FR-DP263/30	1	8033971757767	59
2	63	300	AC	FR-DP263/300	1	8033971757774	60
2	63	30	A	FR-DP263/30A	1	8033971757781	61
2	63	300	A	FR-DP263/300A	1	8033971757798	62
4	25	30	AC	FR-DP425/30	1	8033971219777	63
4	25	300	AC	FR-DP425/300	1	8033971757804	64
4	25	30	A	FR-DP425/30A	1	8033971757811	65
4	40	30	AC	FR-DP440/30	1	8033971757828	66
4	40	300	AC	FR-DP440/300	1	8033971757835	67
4	40	30	A	FR-DP440/30A	1	8033971757842	68
4	63	30	AC	FR-DP463/30	1	8033971757880	69
4	63	300	AC	FR-DP463/300	1	8033971757859	70
4	63	30	A	FR-DP463/30A	1	8033971219784	71
4	63	300	A	FR-DP463/300A	1	8033971219791	72



Modular residual current circuit breakers 100A line

This line, with pleasing aesthetic and ergonomic, is identical to the switches of the line with less rated current to installation uniformity. Reproduce the same quality and technical requirements of the line with lower currents. The connection terminals assure a simple, safe and rapid installation, thanks to its high torque capability can also be tightened with electric and pneumatic screwdriver. These devices can be coupled with the relases and all the available accessories.

Module dimensions



Rated voltage
Residual classes
Breaking capacity
Rated frequency
Estimated endurance
Terminal capacity
Max terminal torque

220/400V
AC
10kA
50/60Hz
4.000 cicli
25 mmq
2.0Nm

Poles	In (A)	Idiff (mA)	CL	Model	Pcs packing	Cod.(EAN13)	
4	100	30	AC	FR-DP4100/30	1	8033971757873	73
4	100	300	AC	FR-DP4100/300	1	8033971757866	74

Compliant with IEC/EN 61008-1 rules.

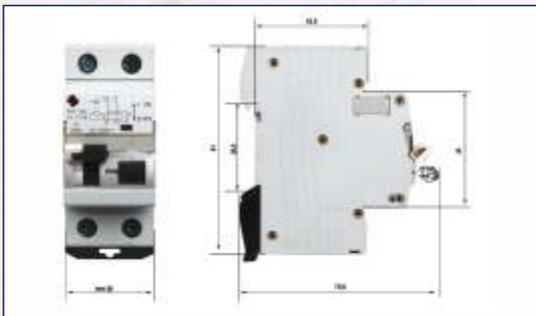
Residual current breakers with overcurrent protection «C» curve



These breakers have the same ergonomic and aesthetically pleasing line of overcurrent circuit breakers. Can be coupled with all the accessories (releases, aux contacts). Rapid and stable DIN rail assembly with the rapid locking system.

Poles	In (A)	Idiff (mA)	CL	Model	Pcs packing	Cod.(EAN13)	
1+N	6	30	AC	FR-MD1N06/30	1	8033971757941	75
1+N	10	30	AC	FR-MD1N10/30	1	8033971757958	76
1+N	16	30	AC	FR-MD1N16/30	1	8033971757965	77
1+N	20	30	AC	FR-MD1N20/30	1	8033971757972	78
1+N	25	30	AC	FR-MD1N25/30	1	8033971757989	79
1+N	32	30	AC	FR-MD1N32/30	1	8033971757996	80
1+N	40	30	AC	FR-MD1N40/30	1	8033971758009	81

Module dimensions



The lever is splitted up in two parts to highlights the different type of intervention (residual or overcurrent). Transparent label holder, useful and made for state identification.

Rated voltage	240V
Residual class	A, AC
Breaking capacity	10kA
Rated frequency	50/60Hz
Estimated endurance	4.000 cycles
Terminal capacity	up to 25mmq
Breaking time	instantaneous (<0,1s)
Insulation class	IP20

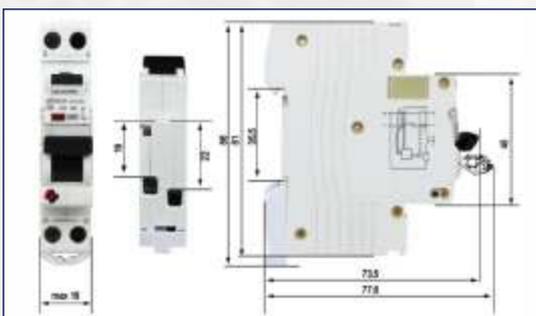
Electronic residual current breakers with overcurrent protection «C» curve on a single module



Compact series for a space safe installations. Can be coupled with all the accessories (releases, aux contact, ecc.). Rapid and stable DIN rail assembly with locking system. Easy intervention breaker state thanks to the useful state window.

Poles	In (A)	Idiff (mA)	CL	Model	Pcs Packing	Cod.(EAN13)	
1+N	6	30	AC	FR-MD1N06/30E	12	8033971758214	82
1+N	10	30	AC	FR-MD1N10/30E	12	8033971758221	83
1+N	16	30	AC	FR-MD1N16/30E	12	8033971758238	84
1+N	20	30	AC	FR-MD1N20/30E	12	8033971758245	85
1+N	25	30	AC	FR-MD1N25/30E	12	8033971758252	86
1+N	32	30	AC	FR-MD1N32/30E	12	8033971758269	87

Module dimensions



Rated voltage	240V
Residual class	A, AC
Breaking capacity	4,5kA
Rated frequency	50Hz
Estimated endurance	4.000 cycles
Terminal capacity	up to 16mmq
Breaking time	instantaneous (<0,1s)
Insulation class	IP20

Compliant with IEC/EN 61008-1 e IEC/EN 60898-1 rules.

Modular switches

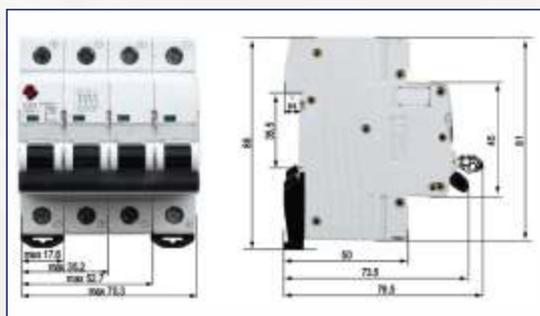


In(A)	Poles	Mod.	Model	Pcs packing	Cod.(EAN13)	
40	1	1	FR-SZ140	12	8033971758016	88
63	1	1	FR-SZ163	12	8033971758054	89
40	2	2	FR-SZ240	6	8033971758023	90
63	2	2	FR-SZ263	6	8033971758061	91
40	3	3	FR-SZ340	4	8033971758030	92
63	3	3	FR-SZ363	4	8033971758078	93
40	4	4	FR-SZ440	3	8033971758047	94
63	4	4	FR-SZ463	3	8033971758085	95

Available in 1, 2, 3 e 4 poles configurations, modular and perfect coupling with all the available accessories of the serie (releases, aux contacts, ecc.).

These breakers have the same ergonomic and aesthetically pleasing line of overcurrent circuit breakers. Transparent label holder, useful and made for state identification. The lever is ready for the security seal.

Module dimensions



Rated voltage	230/400V
Breaking capacity	6kA
Rated frequency	50/60Hz
Estimated endurance	10.000 cycles
Terminal capacity	up to 25mmq
Fixing tool	DIN rail 35mm

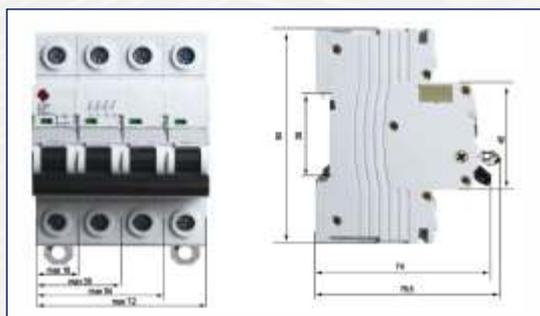
Modular switches 125A line



This serie has the same specifications as the previous but it reach the 125A max current capacity. Available in 1, 2, 3 e 4 poles configurations, modular and perfect coupling with all the available accessories of the serie (releases, aux contacts, ecc.).

Rated voltage	230/400V
Breaking capacity	6kA
Rated frequency	50/60Hz
Estimated endurance	10.000 cycles
Terminal capacity	up to 35mmq
Fixing tool	DIN rail 35mm

Module dimensions



In(A)	Pol	Mod.	Model	Pcs packing	Cod.(EAN13)	
125	1	1	FR-SZ1125	12	8033971758092	96
125	2	2	FR-SZ2125	6	8033971758108	97
125	3	3	FR-SZ3125	4	8033971758115	98
125	4	4	FR-SZ4125	3	8033971758122	99

Compliant with IEC/EN 60947-3 e IEC/EN 60669-1 rules.

Modular accessories



Auxiliary contact

100

Modules	1
Contact	NO/NC
Max.Voltage (V)	400
I max.(A)	3A
Model	FR-AC-COAU
Cod.(EAN13)	8033971758276

All the breakers (MCB and RCD) can be coupled with the following accessories without using any additional component. Equipped with the transparent label lid to easily identify the function. Made to offer different functional combinations to find the needed result but using a single module in the electrical panel. Installation on a 35mm DIN rail. Installation side on the left of the breaker.

Quantity each package: 10pcs



Undervoltage release

101

Modules	1
Rated volt. (V)	230
Threshold (V)	230 (35~70%)
	-
Model	FR-AC-MN
Cod.(EAN13)	8033971758283



Shunt release

102

Modules	1
Rated volt. (V)	230
Threshold (V)	230 (70~110%)
	-
Model	FR-AC-BL
Cod.(EAN13)	8033971758306



Undervoltage release with auxiliary contact

103

Modules	1
Rated volt. (V)	230
Threshold (V)	230 (35~70%)
Contact	NO+NC 3A
Model	FR-AC-MNX
Cod.(EAN13)	8033971758290



Shunt release with auxiliary contact

104

Modules	1
Rated volt. (V)	230
Threshold (V)	230 (70~110%)
Contact	NO+NC 3A
Model	FR-AC-BLX
Cod.(EAN13)	8033971758313

Surge arrester with cartridge

Protection cartridge rapid replacement without removing the base from the DIN rail.

Window indicating the status of the cartridge for rapid detection:

Green = normal working, *Red* = replacement required, *Red+Green* = pay attention

The terminals can also be tightened with electric or pneumatic screwdriver.

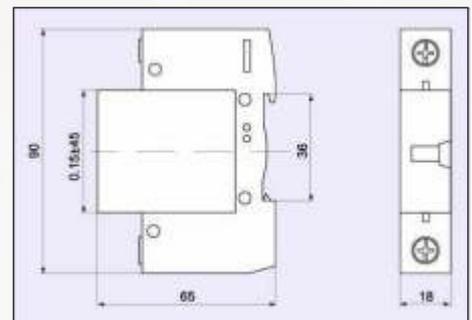
Suitable cable up to 25 sqmm and connection with «U» shape terminal capability.



	105	106
Rated volt. (V)	220	380
Max volt. (V)	320	420
Protection (kV)	1	2,0
Varistor (V)	510 +/-10%	680 +/-10%
Tempo interv. mS	< 25	< 25
Model	FR-AC-SC220	FR-AC-SC380
Cod.(EAN13)	8033971758320	8033971758337

Quantity each package: 12pcs

Module dimensions



System modular accessories



Led signalling lights

V in (V)	P (W)	Color	Model	Pcs packing	Cod.(EAN13)	
230	0,6	Rosso	FR-AC-SR	12	8033971758344	107
230	0,6	Giallo	FR-AC-SG	12	8033971758351	108
230	0,6	Verde	FR-AC-SV	12	8033971758368	109

Rated life >30.000 hours

Suitable cable up to 16 sqmm



DIN rail pushbutton

Vn (V)	I max(A)	Contact	Color	Model	Pcs packing	Cod.(EAN13)	
250	3	NC	Red	FR-AC-PR	12	8033971758375	110
250	3	NO	Green	FR-AC-PV	12	8033971758382	111

Suitable cable up to 16 sqmm



DIN rail buzzer

V in(V)	F(Hz)	Emission	Model	Pcs packing	Cod.(EAN13)	
230	50/60	Frontal	FR-AC-RO220	12	8033971758399	112

Suitable cable up to 10 sqmm Output power >80dB

Working type: electro-mechanical

35mm DIN rail mounting, socket locking with toolless snap hook.



DIN rail 2 poles contactor

Poles	I max(A)	Coil (V)	Model	Pcs packing	Cod.(EAN13)	
2	25	230V 50Hz	FR-AC-C02	12	8033971758405	113

Max power 1,2kW continuous / 4kW impulsive

Contacts max voltage 500V

Contact type NO, operating time <0.05s,

Rated mechanical life 3x10⁶ cycles, electrical 1x10⁶ cycles

DIN rail overall 1 module



DIN rail 4 poles contactor

Poles	I max(A)	Coil (V)	Model	Pcs packing	Cod.(EAN13)	
4	25	230V 50Hz	FR-AC-C04	6	8033971758412	114

Max power 3,6kW continuous / 6,5kW impulsive

Contacts max voltage 500V

Contact type NO, operating time <0.05s,

Rated mechanical life 3x10⁶ cycles, electrical 1x10⁶ cycles

DIN rail overall 2 modules

Timer, programmers and measuring instruments



Electromechanical staircase timer

V in (V)	F (Hz)	Contact	P(W)	Range(min)	Model	Pcs packing	Cod.(EAN13)	
230	50	NO	2300	1~7(30sec)	FR-AC-TLS	1	8033971758443	115

4 wires with floor lighting connection, 3 wires connection without floor lighting, downstream insertable, no power consumption at rest, corrente di riposo, toggle switch for permanent light. Simple setting up by wheel and possibility to read directly the delay with a wheel absolute scale. DIN rail overall 1 module.



Electromechanical daily timer

V in (V)	F (Hz)	Contact	P(W)	Range(min)	Model	Pcs packing	Cod.(EAN13)	
230	50	NO	1000	15/step	FR-AC-ORG	1	8033971758429	116

Analogic with daily program, 1 channel, daily setting up, without battery, 96 switching segments, synchronous electric network, minimum interval: 15 minuts, 3 positions manual switch: permanent ON / AUTO / permanent. OFF. DIN rail overall 1 module.



Weekly programmable digital timer

V in (V)	F (Hz)	Contact	P(W)	Range(min)	Model	Pcs packing	Cod.(EAN13)	
230	50	NO/NC	1000	1/step	FR-AC-ORS	1	8033971758436	117

LCD Display, weekly program, 1 channel, backup battery and working event without network supply with max autonomy 15 days, driven by quartz, working temperature range -10~40°C, On/Off manual switch. Screw terminals protected against accidental contact.



DIN rail digital voltmeter and ammeter

Function	Digit	Range	Display	Model	Pcs packing	Cod.(EAN13)	
Voltmetro	3,5	2~600 V	LED rosso	FR-AC-VOGT	1	8033971758474	118
Amperom	3,5	5~2.000 A	LED rosso	FR-AC-AMGT	1	8033971758450	119

3 e 1/2 digit LED display, 35mm DIN rail overall 2 modules. Screw terminals. Internal range selector by DIP switches.



DIN rail single phase energy meter

Digit	Voltage (V)	Freq.(Hz)	Type	Model	Pcs packing	Cod.(EAN13)	
6	240	50	Elettromec	FR-AC-CAN	1	8033971758467	120

Irreversible electromechanical handling, Accuracy Class 1, Working voltage: 120~240V, rated current 5A, rated insulation 2kV. Frontal pulse Led (1W/pulse), scale up to 99999,9kWh. DIN rail overall 2 modules.

ELETTROAPPARECCHIATURE
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