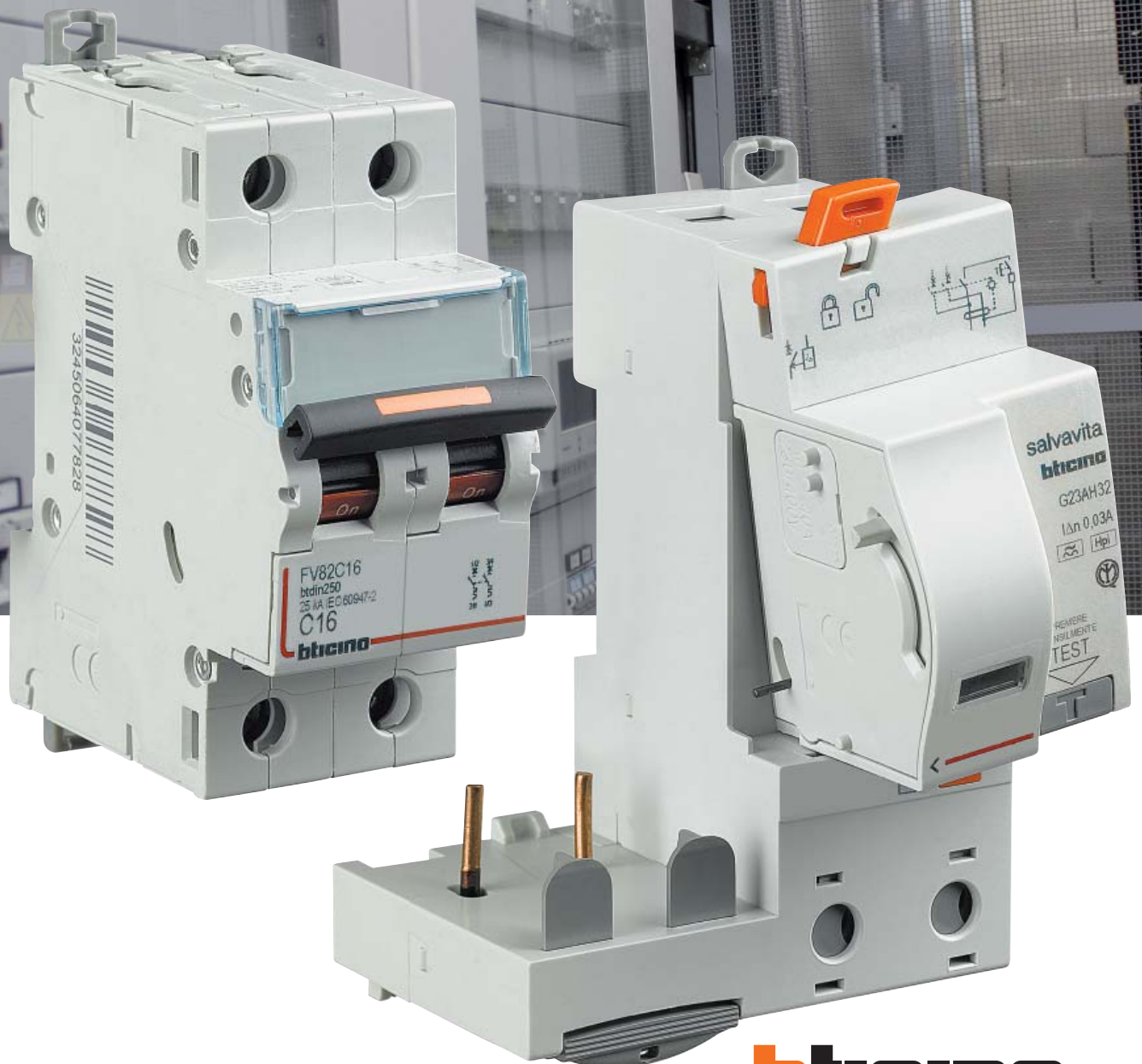


BTDIN

Modular circuit breakers



bticino

BTDIN-RS FOR SWITCHBOARD

Icn= 4500A - thermal magnetic



FC881...



FC810NC



FC820C...

The thermal magnetic BTDN-RS can not be assembled with contacts and releases. They can not be coupled with earth leakage modules. It is not permitted the use with TIFAST systems with plug-in terminals.

		Item code		
		1P+N		2P
Curve		C	C	C
N° of modules		1	2	2
Vn (Vac)		230	230	400
In (A)	6	FC881C6		
	10	FC881C10	FC810NC10	FC820C10
	16	FC881C16	FC810NC16	FC820C16
	20	FC881C20	FC810NC20	FC820C20
	25	FC881C25	FC810NC25	FC820C25
	32	FC881C32	FC810NC32	FC820C32
40	FC881C40	FC810NC40	FC820C40	

GENERAL FEATURES

Contemporary opening and closing on all poles
Upper/lower power supply
Suitability for insulation

THERMAL MAGNETIC FEATURES

Reference standards	IEC EN 60898-1		
	1P+N	2	2P
N° of poles	1	2	2
N° of modules	1	2	2
Magnetic curve	C	C	C
Rated current In (A) a 30°C	6÷40	10÷40	10÷40
Rated breaking capacity Icn (kA)	4.5	4.5	4.5
Service breaking capacity Ics (kA)	4.5	4.5	4.5
Rated voltage Ue (Vac)	230	230	400
Maximum operating voltage Umax (Vac)	250	250	440
Rated insulating voltage Ui (Vac)	500		
Rated frequency (Hz)	50-60		
Operating temperature (°C)	-25÷60		
Max No. of electrical/mechanical operations	10000/20000		
IP index (terminals/other zones)	IP20/IP40		
Limitation class (IEC EN 60898)	3		
Maximum section of flexible/rigid cable(mm²)	16/25 (In ≤ 25 A) 25/35 (In > 25 A)		
Resistance to vibrations	IEC 60068-2-35		
Tropical influence	IEC60068-2-11 - IEC60068-2-30		
Resistance to abnormal heat and to fire (°C)	650 - 960		

BREAKING CAPACITY IN ALTERNATING CURRENT

	IEC EN 60898-1		IEC EN 60947-2	
	Icn (kA)		Icu (kA)	
Vn (Vac)	230	400	230	400
In (A)	1P+N	2P	1P+N	2P
	6÷40	4.5	6	6
Ics (kA)				
6÷40	4.5	4.5	6	6

1P+N



2P



POWER CONSUMPTION FOR POLE (W)

In (A)	Phase pole*	Neutral
6	1.1	0.2
10	1.8	0.3
16	2.2	0.8
20	2.4	1.4
25	3	2
32	3.2	1.4
40	4	2

(*)multiply by the number of poles of the circuit breaker

POWER CONSUMPTION FOR MCB'S 1P+N IN 1 MODULE (W)

Poles	N° of modules	6	10	16	20	25	32	40
1P+N (for pole)	1	2.5	3	3.4	3.7	4.2	3.7	4.7

DOWNGRADING IN TEMPERATURE

In (A)	-25	-5	10	20	30	40	50	60
6	7.3	6.7	6.4	6.2	6	5.8	5.6	5.4
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8
40	50	47	44	42	40	38	36	34

BTDIN-RS FOR SWITCHBOARDS

Earth leakage circuit breakers



GC881...

The thermal magnetic BTDN-RS can not be assembled with contacts and releases. They can not be coupled with earth leakage modules. It is not permitted the use with TIFAST systems with plug-in terminals.

Item code	EARTH LEAKAGE THERMAL MAGNETIC MCB'S			
1P+N	Curve C - Type AC - IEC EN 61009-1			
230 Vac	In (A)	I Δ n (A)	Icn (kA)	N° of modules
GC8813AC10	10			
GC8813AC16	16			
GC8813AC20	20	0.03	4.5	2
GC8813AC25	25			
GC8813AC32	32			



GC8230AC...

Item code	EARTH LEAKAGE THERMAL MAGNETIC MCB'S			
2P	Curve C - Type AC - IEC EN 61009-1			
230 Vac	In (A)	I Δ n (A)	Icn (kA)	N° of modules
GC8230AC10	10			
GC8230AC16	16			
GC8230AC20	20	0.03	4.5	4
GC8230AC25	25			
GC8230AC32	32			



GC723AC25

Item code	EARTH LEAKAGE CIRCUIT BREAKERS			
2P	IEC EN 61008-1			
230 Vac	In (A)	I Δ n (A)	Type	N° of modules
GC723AC25	25	0.03	AC	2

GENERAL FEATURES

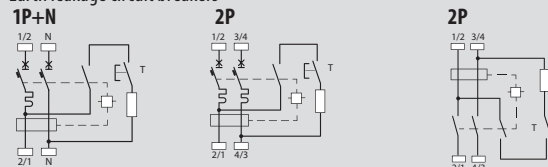
Contemporary opening and closing on all poles
Upper/lower power supply
Suitability for insulation
Usable with SALVAVITA STOP&GO

FEATURES

	RCBO		RCD
	Reference standards	IEC EN 61009-1	
N° of poles	1P+N	2P	2P
N° of modules	2	4	2
Earth leakage characteristic	AC	AC	AC
Magnetic curve	C	C	-
Rated current In (A) a 30°C	10÷32	10÷32	25
Earth leakage rated current I Δ n (A)	0.03	0.03	0.03
Rated breaking capacity Icn (kA)	4.5	4.5	-
Ultimate breaking capacity for IEC EN 60947-2	6	6	-
Earth leakage breaking capacity I Δ m (kA)	3	3	1.5
Rated voltage Ue (Vac)	230	230	230
Maximum operating voltage Umax (Vac)	250	250	250
Rated insulating voltage Ui (Vac)	500	500	500
Minimum operating voltage for test pushbutton (Vac)	180	170	180
Rated frequency (Hz)	50-60 for 1P+N - 50 for 2P		50-60
Operating temperature (°C)	-25÷60		
Max No. of electrical/mechanical operations	10000/20000		
IP index (terminals/other zones)	IP20/IP40		
Limitation class (IEC EN 60898)	3		-
Maximum section of flexible/rigid cable(mm ²)	16/25 (In ≤ 25 A) 25/35 (In > 25 A)		
Resistance to vibrations	IEC 60068-2-35		
Tropical influence	IEC60068-2-11 - IEC60068-2-30		
Resistance to abnormal heat and to fire (°C)	650 - 960		
Total power consumption (W)	See table		4

EARTH LEAKAGE THERMAL MAGNETIC MCB'S

Earth leakage circuit breakers



POWER CONSUMPTION FOR POLE (W)

In (A)	Phase pole*	Neutral	Earth leakage module
6	1.1	0.2	0.04
10	1.8	0.2	0.1
16	2.2	0.8	0.26
20	2.4	1.4	0.41
25	3	2	0.64
32	3.2	1.4	1.06

(*) multiply by the number of poles of the circuit breaker

DOWNGRADING IN TEMPERATURE

In (A)	-25	-5	10	20	30	40	50	60
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8

CONDITIONED BREAKING CAPACITY Inc (KA) FOR EARTH LEAKAGE CIRCUIT BREAKERS

Fuses upstream	In (A)	25	32	40	50	63	80	100
		100	100	80	50	30	10	6
BTDIN upstream	25	BTDIN45	BTDIN60	BTDIN100	BTDIN250	BTDIN160	BTDIN250 (80÷125A)	
	4.5	6	10	10	6	6		

BTDIN45

Icn= 4500A - thermal magnetic



FA81C...



FA881...



FA81NC...

	Item code			
	1P	1P+N		
Curve	C	B	C	C
N° of modules	1	1	1	2
Vn (Vac)	230/400	230	230	230
In (A)	0.5	FA881B05	FA881C05	
	1	FA881B1	FA881C1	
	2	FA881B2	FA881C2	
	3	FA881B3	FA881C3	
	4	FA881B4	FA881C4	
	6	FA81C6	FA881B6	FA881C6
	10	FA81C10	FA881B10	FA881C10
	13		FA881C13	
	16	FA81C16	FA881B16	FA881C16
	20	FA81C20	FA881B20	FA881C20
	25	FA81C25	FA881B25	FA881C25
	32	FA81C32	FA881B32	FA881C32
	40		FA881B40	FA881C40
	50			FA81NC50
	63			FA81NC63



FA82C...



FA83C...



FA84C...

	Item code		
	2P	3P	4P
Curve	C	C	C
N° of modules	2	3	4
Vn (Vac)	400	400	400
	6	FA82C6	FA83C6
	10	FA82C10	FA83C10
	16	FA82C16	FA83C16
	20	FA82C20	FA83C20
	25	FA82C25	FA83C25
	32	FA82C32	FA83C32
	40	FA82C40	FA83C40
	50	FA82C50	FA83C50
	63	FA82C63	FA83C63

Contemporary opening and closing on all poles
 Upper/lower power supply
 Suitability for insulation
 Integrated name plate holder
 Accessibility with:
 - Contacts and releases (max. 3). For circuit breakers 1P and 1P + N in one module we recommend the installation of a single electric auxiliary
 - SALVAVITA STOP&GO (for 2P and 1P+N in 2 modules)
 - Motor operators (for 2P-3P-4P and 1P+N in 2 modules)

FEATURES

Reference standards	IEC EN 60898-1				
N° of poles	1P	1P+N	2P	3P	4P
N° of modules	1	1	2	3	4
Magnetic curve	C	B-C	C	C	
Rated current In (A) a 30°C	6÷32	0.5÷40	6÷63	6÷63	
Rated breaking capacity Icn (kA)	4.5				
Rated voltage Ue (Vac)	230/400	230	400		
Maximum operating voltage Umax (Vac)	250/440	250	440		
Rated insulating voltage Ui (Vac)	500				
Rated frequency (Hz)	50-60				
Operating temperature (°C)	-25÷60				
Max No. of electrical/mechanical operations	10000/20000				
IP index (terminals/other zones)	IP20/IP40				
Limitation class (IEC EN 60898)	3				
Max. section of flexible/rigid cable(mm²)	25/35	10/16	25/35		
Resistance to vibrations	IEC 60068-2-35				
Tropical influence	IEC60068-2-11 - IEC60068-2-30				
Resistance to abnormal heat and to fire (°C)	650 - 960				

BREAKING CAPACITY IN ALTERNATING CURRENT

Vn (Vac)	IEC EN 60898-1				IEC EN 60947-2			
	Icn (kA)				Icu (kA)			
	230		400/440		230		400/440	
In (A)	1P	1P+N 2P÷4P	1P	2P÷4P	1P	1P+N 2P÷4P	1P	1P+N 2P÷4P
0.5÷32	4.5	4.5	4.5	4.5	6	6	6	6
40÷63	-	4.5	-	4.5	-	6	-	6
	Ics (kA)							
0.5÷32	4.5	4.5	4.5	4.5	6	6	6	6
40÷63	-	4.5	-	4.5	-	6	-	6

POWER CONSUMPTION FOR POLE (W)

In (A)	Phase pole*	Neutral
6	1.1	0.2
10	1.8	0.3
16	2	0.8
20	2.2	1.4
25	2.7	2
32	3.2	1.4
40	4	2
50	4.5	3.2
63	5.5	4.8

(*)multiply by the number of poles of the circuit breaker

POWER CONSUMPTION FOR MCB'S 1P+N IN 1 MODULE (W)

Poles	0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63
1P+N (1 module)	2.2	2.4	2.4	2.1	2.1	2.5	3	3.2	3.4	3.7	4.2	3.7	4.7	-	-

DOWNGRADING IN TEMPERATURE

In (A)	-25	-5	10	20	30	40	50	60
0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4
1	1.2	1.1	1.1	1	1	0.9	0.9	0.9
2	2.4	2.2	2.1	2	2	1.9	1.8	1.8
3	3.6	3.3	3.2	3.1	3	2.9	2.7	2.6
4	4.9	4.5	4.3	4.1	4	3.9	3.7	3.6
6	7.3	6.7	6.4	6.2	6	5.8	5.6	5.4
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8
40	50	47	44	42	40	38	36	34
50	62.5	58.8	55	52.5	50	47.5	45	42.5
63	78.1	74.7	69.9	66.1	63	59.8	56.1	52.9

BTDIN60

lcn= 6000A - thermal magnetic



FN81...



FN881...



FN83...



FN84...

Curve	1P			1P+N	
	B	C	D	B	C
N° of modules	1	1	1	1	1
Vn (Vac)	230/400	230/400	230/400	230	230
In (A)	0,5	FN81C05			
	1	FN81C1			
	2	FN81C2			
	3	FN81C3			
	4	FN81C4			
	6	FN81B6	FN81C6	FN81D6	FN881B6 FN881C6
	10	FN81B10	FN81C10	FN81D10	FN881B10 FN881C10
	16	FN81B16	FN81C16	FN81D16	FN881B16 FN881C16
	20	FN81B20	FN81C20	FN81D20	FN881B20 FN881C20
	25	FN81B25	FN81C25	FN81D25	FN881B25 FN881C25
	32	FN81B32	FN81C32	FN81D32	FN881C32
	40		FN81C40	FN81D40	FN881C40
	50		FN81C50	FN81D50	
	63		FN81C63	FN81D63	

Curve	3P			4P			
	B	C	D	B	C	D	
N° of modules	3	3	3	4	4	4	
Vn (Vac)	400	400	400	400	400	400	
In (A)	6	FN83B6	FN83C6	FN83D6	FN84B6	FN84C6	FN84D6
	10	FN83B10	FN83C10	FN83D10	FN84B10	FN84C10	FN84D10
	16	FN83B16	FN83C16	FN83D16	FN84B16	FN84C16	FN84D16
	20	FN83B20	FN83C20	FN83D20	FN84B20	FN84C20	FN84D20
	25	FN83B25	FN83C25	FN83D25	FN84B25	FN84C25	FN84D25
	32	FN83B32	FN83C32	FN83D32	FN84B32	FN84C32	FN84D32
	40	FN83B40	FN83C40	FN83D40	FN84B40	FN84C40	FN84D40
	50	FN83B50	FN83C50	FN83D50	FN84B50	FN84C50	FN84D50
	63	FN83B63	FN83C63	FN83D63	FN84B63	FN84C63	FN84D63



FN81NC...



FN82...

Curve	1P+N		2P	
	C	B	C	D
N° of modules	2	2	2	2
Vn (Vac)	230	400	400	400
In (A)	0,5	FN81NC05	FN82C05	
	1	FN81NC1	FN82C1	
	2	FN81NC2	FN82C2	
	3	FN81NC3	FN82C3	
	4	FN81NC4	FN82C4	
	6	FN81NC6	FN82B6	FN82C6 FN82D6
	10	FN81NC10	FN82B10	FN82C10 FN82D10
	16	FN81NC16	FN82B16	FN82C16 FN82D16
	20	FN81NC20	FN82B20	FN82C20 FN82D20
	25	FN81NC25	FN82B25	FN82C25 FN82D25
	32	FN81NC32	FN82B32	FN82C32 FN82D32
	40	FN81NC40	FN82B40	FN82C40 FN82D40
	50	FN81NC50	FN82B50	FN82C50 FN82D50
	63	FN81NC63	FN82B63	FN82C63 FN82D63

Contemporary opening and closing on all poles

Upper/lower power supply

Suitability for insulation

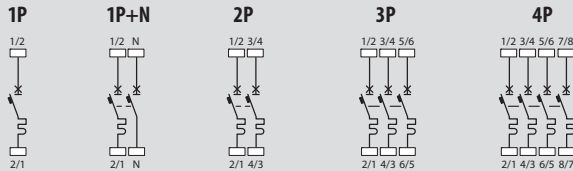
Integrated name plate holder

Accessorability with:

- Contacts and releases (max. 3). For circuit breakers 1P and 1P + N in one module we recommend the installation of a single electric auxiliary
- SALVAVITA STOP&GO (for 2P and 1P+N in 2 modules)
- Motor operators (for 2P-3P-4P and 1P+N in 2 modules)

FAETURES

Reference standards	IEC EN 60898-1				
N° of poles	1P	1P+N	2P	3P	4P
N° of modules	1	1	2	3	4
Magnetic curve	B-C-D	B-C	C	B-C-D	
Rated current In (A) a 30°C	0.5÷63	6÷40	0.5÷63	6÷63	
Rated breaking capacity Icn (kA)	6				
Rated voltage Ue (Vac)	230/400	230	400		
Maximum operating voltage Umax (Vac)	250/440	250	440		
Rated insulating voltage Ui (Vac)	500				
Rated frequency (Hz)	50-60				
Operating temperature (°C)	-25÷60				
Max No. of electrical/mechanical operations	10000/20000				
IP index (terminals/other zones)	IP20/IP40				
Limitation class	3				
Maximum section of flexible/rigid cable(mm²)	25/35	10/16	25/35		
Resistance to vibrations	IEC 60068-2-35				
Tropical influence	IEC60068-2-11 - IEC60068-2-30				
Resistance to abnormal heat and to fire (°C)	650 - 960				



BREAKING CAPACITY IN ALTERNATING CURRENT

Vn (Vac)	IEC EN 60898-1				IEC EN 60947-2			
	Icn (kA)				Icu (kA)			
	230		400/440		230		400/440	
In (A)	1P	1P+N 2P÷4P	1P	2P÷4P	1P 1P+N	2P÷4P	1P	1P+N 2P÷4P
0.5÷40	6	6	6	6	10	20	10	10
50÷63	-	6	-	6	10 (1P+N)	20	-	10
	Ics (kA)							
0.5÷40	6	6	6	6	7.5	15	7.5	7.5
50÷63	-	6	-	6	7.5 (1P+N)	15	-	7.5

POWER CONSUMPTION FOR POLE (W)

In (A)	Phase pole*	Neutral
0.5	1.7	0.1
1	2	0.1
2	2	0.1
3	2	0.1
4	2	0.1
6	1.1	0.2
10	1.8	0.3
16	2	0.8
20	2.2	1.4
25	2.7	2
32	3.2	1.4
40	4	2
50	4.5	3.2
63	5.5	4.8

(*multiply by the number of poles of the circuit breaker

POWER CONSUMPTION FOR MCB'S 1P+N IN 1 MODULE (W)

Poles	0.5	1	2	3	4	6	10	13	16	20	25	32	40	50	63
1P+N (1 module)	2.2	2.4	2.4	2.1	2.1	2.5	3	3.2	3.4	3.7	4.2	3.7	4.7	-	-

DOWNGRADING IN TEMPERATURE

In (A)	-25	-5	10	20	30	40	50	60
0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4
1	1.2	1.1	1.1	1	1	0.9	0.9	0.9
2	2.4	2.2	2.1	2	2	1.9	1.8	1.8
3	3.6	3.3	3.2	3.1	3	2.9	2.7	2.6
4	4.9	4.5	4.3	4.1	4	3.9	3.7	3.6
6	7.3	6.7	6.4	6.2	6	5.8	5.6	5.4
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8
40	50	47	44	42	40	38	36	34
50	62.5	58.8	55	52.5	50	47.5	45	42.5
63	78.1	74.7	69.9	66.1	63	59.8	56.1	52.9

BTDIN100

Icn= 10000A - thermal magnetic



FH81...



FH81NC...



FH82...

	Item code					
	1P		1P+N	2P		
Curve	C	D	C	C	D	
N° of modules	1	1	2	2	2	
Vn (Vac)	230/400	230/400	230	400	400	
In (A)	6	FH81C6 FH81D6	FH81NC6	FH82C6 FH82D6		
	10	FH81C10 FH81D10	FH81NC10	FH82C10 FH82D10		
	16	FH81C16 FH81D16	FH81NC16	FH82C16 FH82D16		
	20	FH81C20 FH81D20	FH81NC20	FH82C20 FH82D20		
	25	FH81C25 FH81D25	FH81NC25	FH82C25 FH82D25		
	32	FH81C32 FH81D32	FH81NC32	FH82C32 FH82D32		
	40	FH81C40 FH81D40	FH81NC40	FH82C40 FH82D40		
	50	FH81C50 FH81D50	FH81NC50	FH82C50 FH82D50		
	63	FH81C63 FH81D63	FH81NC63	FH82C63 FH82D63		



FH83...



FH84...

	Item code							
	3P				4P			
Curve	C	D	C	D	C	D	C	D
N° of modules	3	3	4	4	4	4	4	4
Vn (Vac)	400	400	400	400	400	400	400	400
In (A)	6	FH83C6 FH83D6	FH84C6 FH84D6					
	10	FH83C10 FH83D10	FH84C10 FH84D10					
	16	FH83C16 FH83D16	FH84C16 FH84D16					
	20	FH83C20 FH83D20	FH84C20 FH84D20					
	25	FH83C25 FH83D25	FH84C25 FH84D25					
	32	FH83C32 FH83D32	FH84C32 FH84D32					
	40	FH83C40 FH83D40	FH84C40 FH84D40					
	50	FH83C50 FH83D50	FH84C50 FH84D50					
	63	FH83C63 FH83D63	FH84C63 FH84D63					

Contemporary opening and closing on all poles

Upper/lower power supply

Suitability for insulation

Integrated name plate holder

Accessibility with:

- Contacts and releases (max. 3). For circuit breakers 1P and 1P + N in one module we recommend the installation of a single electric auxiliary - SALVAVITA STOP&GO (for 2P and 1P+N in 2 modules)

- Motor operators (for 2P-3P-4P and 1P+N in 2 modules)

FAETURES

Reference standards	IEC EN 60898-1				
	1P	1P+N	2P	3P	4P
N° of poles	1	2	2	3	4
N° of modules	1	2	2	3	4
Magnetic curve	C-D	C	C-D-K-Z	C-D	C-D-K-Z
Rated current In (A) a 30°C	6÷63				
Rated breaking capacity Icn (kA)	10				
Rated voltage Ue (Vac)	230/400	230	400		
Maximum operating voltage Umax (Vac)	250/440	250	440		
Rated insulating voltage Ui (Vac)	500				
Rated frequency (Hz)	50-60				
Operating temperature (°C)	-25÷60				
Max No. of electrical/mechanical operations	10000/20000				
IP index (terminals/other zones)	IP20/IP40				
Limitation class (IEC EN 60898)	3				
Maximum section of flexible/rigid cable(mm²)	25/35				
Resistance to vibrations	IEC 60068-2-35				
Tropical influence	IEC60068-2-11 - IEC60068-2-30				
Resistance to abnormal heat and to fire (°C)	650 - 960				

BREAKING CAPACITY IN ALTERNATING CURRENT

Vn (Vac)	IEC EN 60898-1			IEC EN 60947-2			
	Icn (kA)			Icu (kA)			
	1P+N	1P÷4P	1P÷4P	1P	2P÷4P	1P	2P÷4P
230							
400/440							
230							
400/440							
In (A)	1P+N	1P÷4P	1P÷4P	1P	2P÷4P	1P	2P÷4P
6÷20	10	12.5	10	15	20	10	12.5
25÷63	10	12.5	10	10	20	10	12.5
Ics (kA)							
6÷20	7.5	9	7.5	12.5	15	7.5	9
25÷63	7.5	9	7.5	7.5	15	7.5	9

POWER CONSUMPTION FOR POLE (W)

In (A)	Phase pole*		Neutral
6	1.1		0.2
10	1.8		0.3
16	2		0.8
20	2.2		1.4
25	2.7		2
32	3.2		1.4
40	4		2
50	4.5		3.2
63	5.5		4.8

(*)multiply by the number of poles of the circuit breaker

DOWNGRADING IN TEMPERATURE

In (A)	-25	-5	10	20	30	40	50	60
6	7.3	6.7	6.4	6.2	6	5.8	5.6	5.4
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8
40	50	47	44	42	40	38	36	34
50	62.5	58.8	55	52.5	50	47.5	45	42.5
63	78.1	74.7	69.9	66.1	63	59.8	56.1	52.9

BTDIN100

Icn= 10000A - thermal magnetic special version



FH82...



FH84...

	Item code			
	2P		4P	
Curve	Z (2.4÷3.6 In)	K (10÷14 In)	Z (2.4÷3.6 In)	K (10÷14 In)
N° of modules	2	2	4	4
Vn (Vac)	400	400	400	400
In (A)	1			
	2			
	3			
	4			
	6			
	8			
	10			
	16			
	20			
	25			
	32			
	40			
	FH82Z1	FH82K1	FH84Z1	FH84K1
	FH82Z2	FH82K2	FH84Z2	FH84K2
	FH82Z3	FH82K3	FH84Z3	FH84K3
	FH82Z4	FH82K4	FH84Z4	FH84K4
	FH82Z6	FH82K6	FH84Z6	FH84K6
	FH82Z8	FH82K8	FH84Z8	FH84K8
	FH82Z10	FH82K10	FH84Z10	FH84K10
	FH82Z16	FH82K16	FH84Z16	FH84K16
	FH82Z20	FH82K20	FH84Z20	FH84K20
	FH82Z25	FH82K25	FH84Z25	FH84K25
	FH82Z32	FH82K32	FH84Z32	FH84K32
	FH82Z40	FH82K40	FH84Z40	FH84K40

NOTE : FOR AVAILABILITY OF EQUIPMENT IN CURVE K AND Z . CONTACT YOUR LOCAL SALES OFFICE

Contemporary opening and closing on all poles

Upper/lower power supply

Suitability for insulation

Integrated name plate holder

Accessoryability with:

- Contacts and releases (max. 3). For circuit breakers 1P and 1P + N in one module we recommend the installation of a single electric auxiliary
- SALVAVITA STOP&GO (for 2P and 1P+N in 2 modules)
- Motor operators (for 2P-3P-4P and 1P+N in 2 modules)

FAETURES

Reference standards	IEC EN 60947-2	
	2P	4P
N° of poles	2	4
N° of modules	2	4
Magnetic curve	K-Z	K-Z
Rated current In (A) a 30°C	1÷40 (vedere tabell codici Item code)	
Rated breaking capacity Icn (kA)	10	
Rated voltage Ue (Vac)	400	400
Maximum operating voltage Umax (Vac)	250	250
Rated insulating voltage Ui (Vac)	500	
Rated frequency (Hz)	50-60	
Operating temperature (°C)	-25÷60	
Max No. of electrical/mechanical operations	10000/20000	
IP index (terminals/other zones)	IP20/IP40	
Maximum section of flexible/rigid cable(mm²)	25/35	
Resistance to vibrations	IEC 60068-2-35	
Tropical influence	IEC60068-2-11 - IEC60068-2-30	
Resistance to abnormal heat and to fire (°C)	650 - 960	

2P



4P



POWER CONSUMPTION FOR POLE (W)

Poles	1	2	3	4	6	10	13	16	20	25	32	40
1P÷4P	2.1	2.1	2.4	2.5	1.1	1.1	1.3	1.5	1.7	2.4	3.1	4
1P+N (*)	2.1	2.1	2.4	2.5	1.2	1.4	1.8	2.2	2.7	4	4.3	5.9

* Total power consumption

BTDIN160

Icu= 16kA - thermal magnetic



FT81...



FT81NC...



FT82...

	Item code					
	1P		1P+N		2P	
Curve	C	D	C	C	D	
N° of modules	1	1	2	2	2	
Vn (Vac)	230/400	230/400	230	400	400	
In (A)	6		FT81NC6	FT82C6		
	10	FT81C10	FT81NC10	FT82C10		
	16	FT81C16	FT81NC16	FT82C16		
	20	FT81C20	FT81NC20	FT82C20		
	25	FT81C25	FT81NC25	FT82C25		
	32	FT81C32	FT81NC32	FT82C32		
	40	FT81C40	FT81NC40	FT82C40		
	50	FT81C50	FT81NC50	FT82C50		
	63	FT81C63	FT81NC63	FT82C63		
N° of modules	1.5			3		
In (A)	80	FT81C80 FT81D80		FT82C80 FT82D80		
	100	FT81C100 FT81D100		FT82C100 FT82D100		
	125	FT81C125 FT81D125		FT82C125 FT82D125		



FT83...



FT84...

	Item code			
	3P		4P	
Curve	C	D	C	D
N° of modules	3	3	4	4
Vn (Vac)	400	400	400	400
In (A)	10	FT83C10	FT84C10	
	16	FT83C16	FT84C16	
	20	FT83C20	FT84C20	
	25	FT83C25	FT84C25	
	32	FT83C32	FT84C32	
	40	FT83C40	FT84C40	
	50	FT83C50	FT84C50	
	63	FT83C63	FT84C63	
N° of modules	4.5		6	
In (A)	80	FT83C80 FT83D80	FT84C80 FT84D80	
	100	FT83C100 FT83D100	FT84C100 FT84D100	
	125	FT83C125 FT83D125	FT84C125 FT84D125	

Contemporary opening and closing on all poles

Upper/lower power supply

Suitability for insulation

Integrated name plate holder

Accessoryability with:

- Contacts and releases (max. 3). For circuit breakers 1P and 1P + N in one module we recommend the installation of a single electric auxiliary

- SALVAVITA STOP&GO (for 2P and 1P+N in 2 modules)

- Motor operators (for 2P-3P-4P and 1P+N in 2 modules)

FAETURES

Reference standards	IEC EN 60947-2				
N° of poles	1P	1P+N	2P	3P	4P
N° of modules	1	2	2	3	4
Magnetic curve	C-D	C	C-D	C-D	C-D
Rated current In (A) a 30°C	6÷125				
Ultimate breaking capacity Icu (kA)	16				
Rated voltage Ue (Vac)	230/400	230	400		
Maximum operating voltage Umax (Vac)	250/440	250	440		
Rated insulating voltage Ui (Vac)	500				
Rated frequency (Hz)	50-60				
Operating temperature (°C)	-25÷60				
Max No. of electrical/mechanical operations	10000/20000				
IP index (terminals/other zones)	IP20/IP40				
Maximum section of flexible/rigid cable(mm²)	25/35 (50/70 Mcb's with 1.5 modules per pole)				
Resistance to vibrations	IEC 60068-2-35				
Tropical influence	IEC60068-2-11 - IEC60068-2-30				
Resistance to abnormal heat and to fire (°C)	650 - 960				

NOTE : Items with modularity 1.5 per pole modules can not be equipped with SALVAVITA Stop&Go

NOTE: Curve D available only for Mcb's from 80 to 125 A

BREAKING CAPACITY IN ALTERNATING CURRENT

	IEC EN 60898-1		IEC EN 60947-2	
	Icn (kA)		Icu (kA)	
Vn (Vac)	230	400/440	230	400/440
In (A)	1P÷4P	1P÷4P	1P÷4P	1P÷4P
6÷80	16	12.5	25	16
100÷125	16	12.5	20	16
	Ics (kA)			
6÷63	12	9	19	12
80	16	12.5	25	16
100÷125	16	12.5	20	16

POWER CONSUMPTION FOR POLE (W)

In (A)	Phase pole*	Neutral (solo per 1+N)
6	1.1	0.2
10	1.8	0.3
16	2	0.8
20	2.2	1.4
25	2.7	2
32	3.2	1.4
40	4	2
50	4.5	3.2
63	5.5	4.8
80	8.8	
100	10	
125	15.6	

(*)multiply by the number of poles of the circuit breaker

DOWNGRADING IN TEMPERATURE

In (A)	-25	-10	-5	0	10	20	30	40	50	60	70
6	7.3	-	6.7	-	6.4	6.2	6	6	5.6	5.4	-
10	12.2	-	11.2	-	10.7	10.3	10	10	9.3	9	-
16	19.7	-	18.4	-	17.3	16.6	16	16	14.7	14.1	-
20	24.6	-	22.8	-	21.6	20.8	20	20	18.4	17.6	-
25	31.2	-	29	-	27.2	26	25	25	22.7	21.7	-
32	40	-	36.9	-	34.9	33.3	32	32	29.1	27.8	-
40	50	-	47	-	44	42	40	40	36	34	-
50	62.5	-	58.8	-	55	52.5	50	50	45	42.5	-
63	78.1	-	74.7	-	69.9	66.1	63	63	56.1	52.9	-
80	102	97	-	94	91	88	80	80	76	72	69
100	128	122	-	118	114	110	100	100	95	90	86
125	160	152	-	147	142	137	125	125	119	113	108

BTDIN250
Icu= 25kA - thermal magnetic



FV81...



FV82...



FV82...



FV83...



FV84...

	Item code			
	1P	2P	3P	4P
Curve	C	C	C	C
N° of modules	1	2	3	4
Vn (Vac)	230/400	400	400	400
In (A)	6	FV81C6	FV82C6	
	10	FV81C10	FV82C10	FV83C10
	16	FV81C16	FV82C16	FV83C16
	20	FV81C20	FV82C20	FV83C20
	25	FV81C25	FV82C25	FV83C25
	32		FV82C32	
N° of modules	1.5	3	4.5	6
In (A)	32	FV81C32		FV83C32
	40	FV81C40	FV82C40	FV83C40
	50	FV81C50	FV82C50	FV83C50
	63	FV81C63	FV82C63	FV83C63
	80	FV81C80	FV82C80	FV83C80
	100	FV81C100	FV82C100	FV83C100
	125	FV81C125	FV82C125	FV83C125
				FV84C125

NOTE : Items with modularity 1.5 per pole modules can not be equipped with SALVAVITA Stop&Go

Contemporary opening and closing on all poles
Upper/lower power supply
Suitability for insulation
Integrated name plate holder
Accessibility with:
- Contacts and releases (max. 3). For circuit breakers 1P and 1P + N in one module we recommend the installation of a single electric auxiliary
- SALVAVITA STOP&GO (for 2P and 1P+N in 2 modules)
- Motor operators

FAETURES

	BTDIN250			
Reference standards	IEC EN 60947-2			
N° of poles	1P	2P	3P	4P
N° of modules(*)	1 (1.5)	2 (3)	3 (4.5)	4 (6)
Magnetic curve	C			
Rated current In (A) a 30°C	6÷125			
Ultimate breaking capacity Icu (kA) (*)	25			
Rated voltage Ue (Vac)	230/400	400		
Maximum operating voltage Umax (Vac)	250/440	440		
Rated insulating voltage Ui (Vac)	500			
Rated frequency (Hz)	50-60			
Operating temperature (°C)	-25÷60			
Max No. of electrical/mechanical operations	10000/20000			
IP index (terminals/other zones)	IP20/IP40			
Maximum section of flexible/rigid cable(mm²)	25/35 (50/70 Mcb's with 1.5 modules per pole)			
Resistance to vibrations	IEC 60068-2-35			
Tropical influence	IEC60068-2-11 - IEC60068-2-30			
Resistance to abnormal heat and to fire (°C)	650 - 960			

(*) For the modularity and the breaking capacity see the item code tables

BREAKING CAPACITY IN ALTERNATING CURRENT

	IEC EN 60898-1		IEC EN 60947-2			
	Icn (kA)		Icu (kA)			
Vn (Vac)	230	400/440	230		400/440	
In (A)	1P÷4P	1P÷4P	1P	2P÷4P	1P	2P÷4P
6÷25	20	15	25	36	20	25
32÷63	20	15	50	50	25	25
80	20	15	36	36	25	25
100÷125	20	15	25	25	25	25
	Ics (kA)					
6÷25	15	11	19	27	15	19
32÷63	15	11	38	38	19	19
80	15	11	27	27	19	19
100÷125	15	11	19	19	19	19

POWER CONSUMPTION FOR POLE (W)

In (A)	W
25	2.7
32	3.7
40	4
50	4.3
63	6.5
80	7
100	9.5
125	13

DOWNGRADING IN TEMPERATURE

In (A)	-25	-10	-5	0	10	20	30	40	50	60	70
6	7.3	-	6.7	-	6.4	6.2	6	6	5.6	5.4	-
10	12.2	-	11.2	-	10.7	10.3	10	10	9.3	9	-
16	19.7	-	18.4	-	17.3	16.6	16	16	14.7	14.1	-
20	24.6	-	22.8	-	21.6	20.8	20	20	18.4	17.6	-
25	31.2	-	29	-	27.2	26	25	25	22.7	21.7	-
32	40	-	36.9	-	34.9	33.3	32	32	29.1	27.8	-
40	50	-	47	-	44	42	40	40	36	34	-
50	62.5	-	58.8	-	55	52.5	50	50	45	42.5	-
63	78.1	-	74.7	-	69.9	66.1	63	63	56.1	52.9	-

BTDIN250SM

Icu= 25kA - solo magnetici



FV82SM...



FV83SM...

	Item code			
	2P		3P	
Curve	12-14In		12-14In	
N° of modules	2		3	
Vn (Vac)	400		400	
In/Im (A)	1.6	20	FV82SM20	FV83SM20
	2.5	32	FV82SM32	FV83SM32
	6	50	FV82SM50	FV83SM50
	6.3	80	FV82SM80	FV83SM80
	10	125	FV82SM125	FV83SM125
	12.5	160	FV82SM160	
	16	200	FV82SM200	
	25	320	FV82SM320	
N° of modules	3		4.5	
In/Im (A)	12.5	160		FV83SM160
	16	200		FV83SM200
	25	320		FV83SM320
	40	500	FV82SM500	FV83SM500
	63	800	FV82SM800	FV83SM800

Contemporary opening and closing on all poles
Upper/lower power supply
Suitability for insulation
Integrated name plate holder
Accessoriability with contacts and releases (max. 3)
Motor operators

FAETURES

	BTDIN250SM	
Reference standards	IEC EN 60947-2	
N° of poles	2P	3P
N° of modules (*)	2 (3)	3 (4.5)
Magnetic curve	12÷14In	
Rated current In (A) a 30°C	1.6÷63	
Ultimate breaking capacity Icu (kA) (*)	25	
Rated voltage Ue (Vac)	400	400
Maximum operating voltage Umax (Vac)	440	440
Rated insulating voltage Ui (Vac)	500	
Rated frequency (Hz)	50-60	
Operating temperature (°C)	-25÷60	
Max No. of electrical/mechanical operations	10000/20000	
IP index (terminals/other zones)	IP20/IP40	
Maximum section of flexible/rigid cable(mm²)	25/35 (50/70 Mcb's with 1.5 modules per pole)	
Resistance to vibrations	IEC 60068-2-35	
Tropical influence	IEC60068-2-11 - IEC60068-2-30	
Resistance to abnormal heat and to fire (°C)	650 - 960	

(*) For the modularity and the breaking capacity see the item code tables

2P



3P



POWER CONSUMPTION FOR POLE (W)

Poles	6	10	13	16	20	25	32	40	50	63
1P÷4P	1.1	1.1	1.3	1.5	1.7	2.4	3.1	4	4.5	5.5
1P÷4P(*)	-	-	-	-	-	2.8	4.3	4.6	4.32	6.05

(*) 1.5 modules per pole

BTDIN500
Icu= 50kA - thermal magnetic



FX82C...



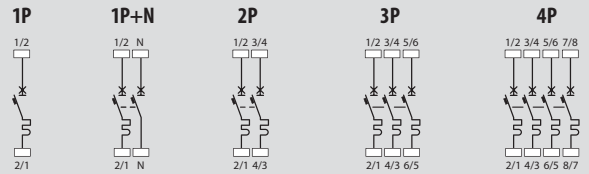
FX84C....

	Item code			
	1P	2P	3P	4P
Curve	C	C	C	C
N° of modules	1.5	3	4.5	6
Vn (Vac)	230/400	400	400	400
In (A)	10	16	20	25
	FX81C10	FX82C10		
	FX81C16	FX82C16		
	FX81C20	FX82C20		
	FX81C25	FX82C25	FX83C25	FX84C25
	FX81C32	FX82C32	FX83C32	FX84C32
	FX81C40	FX82C40	FX83C40	FX84C40
	FX81C50	FX82C50	FX83C50	FX84C50
	FX81C63	FX82C63	FX83C63	FX84C63

Contemporary opening and closing on all poles
Upper/lower power supply
Suitability for insulation
Integrated name plate holder
Accessoryability with contacts and releases (max. 3)

FEATURES

Reference standards	IEC EN 60947-2			
	1P	2P	3P	4P
N° of poles	1.5	3	4.5	6
N° of modules	1.5	3	4.5	6
Magnetic curve	C			
Rated current In (A) a 30°C	10÷63		25÷63	
Ultimate breaking capacity Icu (kA)	50			
Rated voltage Ue (Vac)	230/400	400		
Maximum operating voltage Umax (Vac)	250/440	440		
Rated insulating voltage Ui (Vac)	500			
Rated frequency (Hz)	50-60			
Operating temperature (°C)	-25÷60			
Max No. of electrical/mechanical operations	10000/20000			
IP index (terminals/other zones)	IP20/IP40			
Maximum section of flexible/rigid cable(mm²)	50/70			
Resistance to vibrations	IEC 60068-2-35			
Tropical influence	IEC60068-2-11 - IEC60068-2-30			
Resistance to abnormal heat and to fire (°C)	650 - 960			



BREAKING CAPACITY IN ALTERNATING CURRENT

Vn (Vac)	IEC EN 60898-1			IEC EN 60947-2		
	Icn (kA)			Icu (kA)		
	230	400/440		230	400/440	
In (A)	1P	2P÷4P	1P÷4P	1P	2P÷4P	1P÷4P
10÷63	25	36	25	50	70	50
	Ics (kA)					
10÷63	12.5	18	12.5	38	52	38

POWER CONSUMPTION FOR POLE (W)

Poles	25	32	40	50	63
1P÷4P	2.8	4.3	4.6	4.32	6.05

DOWNGRADING IN TEMPERATURE

In (A)	-25	-10	-5	0	10	20	30	40	50	60	70
10	12.2	-	11.2	-	10.7	10.3	10	10	9.3	9	-
16	19.7	-	18.4	-	17.3	16.6	16	16	14.7	14.1	-
20	24.6	-	22.8	-	21.6	20.8	20	20	18.4	17.6	-
25	31.2	-	29	-	27.2	26	25	25	22.7	21.7	-
32	40	-	36.9	-	34.9	33.3	32	32	29.1	27.8	-
40	50	-	47	-	44	42	40	40	36	34	-
50	62.5	-	58.8	-	55	52.5	50	50	45	42.5	-
63	78.1	-	74.7	-	69.9	66.1	63	63	56.1	52.9	-

BTDIN45

Icn= 4500A - EARTH LEAKAGE THERMAL MAGNETIC MCB'S



GA881...

Item code		EARTH LEAKAGE THERMAL MAGNETIC MCB'S					
1P+N		IEC EN 61009-1 - Curve C					
Type A	Type AC	In (A)	IΔn (A)	Vn (Vac)	Icn (kA)	N° of modules	
GA8812A2		2					
GA8812A4		4					
GA8812A6	GA8812AC6	6	0.01	230	4.5	2	
GA8812A10	GA8812AC10	10					
GA8812A16	GA8812AC16	16					

GA8813A2	GA8813AC2	2					
	GA8813AC3	3					
GA8813A4	GA8813AC4	4					
GA8813A6	GA8813AC6	6					
GA8813A10	GA8813AC10	10					
GA8813A13	GA8813AC13	13	0.03	230	4.5	2	
GA8813A16	GA8813AC16	16					
GA8813A20	GA8813AC20	20					
GA8813A25	GA8813AC25	25					
GA8813A32	GA8813AC32	32					
GA8813A40	GA8813AC40	40					



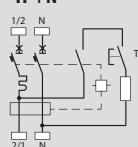
GA884...

Item code		EARTH LEAKAGE THERMAL MAGNETIC MCB'S					
4P		IEC EN 61009-1 - Curve C					
Type A	Type AC	In (A)	IΔn (A)	Vn (Vac)	Icn (kA)	N° of modules	
GA8843A6	GA8843AC6	6					
GA8843A10	GA8843AC10	10					
GA8843A16	GA8843AC16	16					
GA8843A20	GA8843AC20	20	0.03	400	4.5	4	
GA8843A25	GA8843AC25	25					
GA8843A32	GA8843AC32	32					

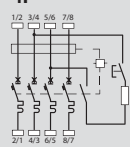
FEATURES

Reference standards	IEC EN 61009-1	
N° of poles	1P+N	4P
N° of modules	2	4
Earth leakage characteristic	A - AC	
Magnetic curve	C	
Rated current In (A) a 30°C	2÷40	6÷32
Earth leakage rated current IΔn (A)	0.01 - 0.03	0.03
Rated breaking capacity Icn (kA)	4.5	
Earth leakage breaking capacity IΔm (kA)	3	
Rated voltage Ue (Vac)	230	400
Maximum operating voltage Umax (Vac)	440	
Rated insulating voltage Ui (Vac)	500	
Minimum operating voltage for test pushbutton (Vac)	180	320
Rated frequency (Hz)	50-60	
Operating temperature (°C)	-25÷60	
Max No. of electrical/mechanical operations	10000/20000	
IP index (terminals/other zones)	IP20/IP40	
Limitation class (IEC EN 60898)	3	
Maximum section of flexible/rigid cable(mm²)	25/35	
Resistance to vibrations	IEC 60068-2-35	
Tropical influence	IEC60068-2-11 - IEC60068-2-30	
Resistance to abnormal heat and to fire (°C)	650 - 960	

1P+N



4P



BREAKING CAPACITY IN ALTERNATING CURRENT

Vn (Vac)	IEC EN 60898-1				IEC EN 60947-2			
	Icn (kA)				Icu (kA)			
	230	400/440	230	400/440				
In (A)	1P	1P+N 2P÷4P	1P	2P÷4P	1P	1P+N 2P÷4P	1P	1P+N 2P÷4P
0.5÷32	4.5	4.5	4.5	4.5	6	6	6	6
40÷63	-	4.5	-	4.5	-	6	-	6
	Ics (kA)							
0.5÷32	4.5	4.5	4.5	4.5	6	6	6	6
40÷63	-	4.5	-	4.5	-	6	-	6

TOTAL POWER CONSUMPTION (W)

Poles	2	3	4	6	10	13	16	20	25	32	40	50	63
1P+N	2.4	2.1	2.6	2.5	3	-	3.4	3.7	4.2	4.7	-	-	-
2P				1.23	1.45	1.68	1.92	3.1	4.6	5.3	6.7	8.9	11.7
4P	-	-	-	6	4.8	-	9	9.3	11	13	-	-	-

DOWNGRADING IN TEMPERATURE

In (A)	-25	-5	10	20	30	40	50	60
0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4
1	1.2	1.1	1.1	1	1	0.9	0.9	0.9
2	2.4	2.2	2.1	2	2	1.9	1.8	1.8
3	3.6	3.3	3.2	3.1	3	2.9	2.7	2.6
4	4.9	4.5	4.3	4.1	4	3.9	3.7	3.6
6	7.3	6.7	6.4	6.2	6	5.8	5.6	5.4
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8
40	50	47	44	42	40	38	36	34
50	62.5	58.8	55	52.5	50	47.5	45	42.5
63	78.1	74.7	69.9	66.1	63	59.8	56.1	52.9

BTDIN60

I_{cn} = 6000A - EARTH LEAKAGE THERMAL MAGNETIC MCB'S



GN881...



GN884...

EARTH LEAKAGE THERMAL MAGNETIC MCB'S

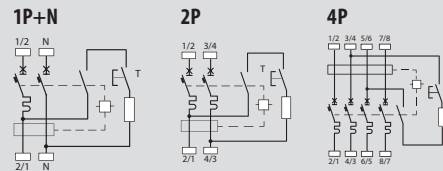
1P+N		IEC EN 61009-1 - Curve C				
Type A	Type AC	I _n (A)	I _{Δn} (A)	V _n (Vac)	I _{cn} (kA)	N° of modules
GN8813A2	GN8813AC2	2				
GN8813A3	GN8813AC3	3				
GN8813A4	GN8813AC4	4				
GN8813A6	GN8813AC6	6				
GN8813A10	GN8813AC10	10				
GN8813A16	GN8813AC16	16				
GN8813A20	GN8813AC20	20	0.03	230	6	2
GN8813A25	GN8813AC25	25				
GN8813A32	GN8813AC32	32				
GN8813A40	GN8813AC40	40				
	GN8814AC6	6				
GN8814A10	GN8814AC10	10				
GN8814A16	GN8814AC16	16				
GN8814A20	GN8814AC20	20				
GN8814A25	GN8814AC25	25	0.3	230	6	2
GN8814A32	GN8814AC32	32				
GN8814A40	GN8814AC40	40				

2P		IEC EN 61009-1 - Curve C				
Type AC	I _n (A)	I _{Δn} (A)	V _n (Vac)	I _{cn} (kA)	N° of modules	
GN823AC6	6					
GN823AC10	10					
GN823AC16	16					
GN823AC20	20					
GN823AC25	25	0.03	230	6	4	
GN823AC32	32					
GN823AC40	40					
GN823AC50	50					
GN823AC63	63					

4P		IEC EN 61009-1 - Curve C				
Type A	Type AC	I _n (A)	I _{Δn} (A)	V _n (Vac)	I _{cn} (kA)	N° of modules
GN8843A6	GN8843AC6	6				
GN8843A10	GN8843AC10	10				
GN8843A16	GN8843AC16	16				
GN8843A20	GN8843AC20	20	0.03	400	6	4
GN8843A25	GN8843AC25	25				
GN8843A32	GN8843AC32	32				
GN8844A6	GN8844AC6	6				
GN8844A10	GN8844AC10	10				
GN8844A16	GN8844AC16	16				
GN8844A20	GN8844AC20	20	0.3	400	6	4
GN8844A25	GN8844AC25	25				
GN8844A32	GN8844AC32	32				

FEATURES

Reference standards	IEC EN 61009-1		
N° of poles	1P+N	2P	4P
N° of modules	2	4	4
Earth leakage characteristic	A-AC	A	A-AC
Magnetic curve	C		
Rated current I _n (A) a 30°C	0.5÷40	6÷63	6÷32
Earth leakage rated current I _{Δn} (A)	0.03 - 0.3	0.03	0.03 - 0.3
Rated breaking capacity I _{cn} (kA)	6		
Earth leakage breaking capacity I _{Δm} (kA)	3	6	3
Rated voltage U _e (Vac)	230	230/400	400
Maximum operating voltage U _{max} (Vac)	440		
Rated insulating voltage U _i (Vac)	500		
Minimum operating voltage for test pushbutton (Vac)	180 (I _{Δn} =30mA) 120 (I _{Δn} =300mA)	170	320 (I _{Δn} =30mA) 220 (I _{Δn} =300mA)
Rated frequency (Hz)	50-60 (50 per versione 2P)		
Operating temperature (°C)	-25÷60		
Max No. of electrical/mechanical operations	10000/20000		
IP index (terminals/other zones)	IP20/IP40		
Limitation class (IEC EN 60898)	3		
Maximum section of flexible/rigid cable(mm ²)	25/35		
Resistance to vibrations	IEC 60068-2-35		
Tropical influence	IEC60068-2-11 - IEC60068-2-30		
Resistance to abnormal heat and to fire (°C)	650 - 960		



BREAKING CAPACITY IN ALTERNATING CURRENT

V _n (Vac)	IEC EN 60898-1				IEC EN 60947-2			
	I _{cn} (kA)				I _{cu} (kA)			
I _n (A)	230	400/440	230	400/440	1P	2P÷4P	1P	2P÷4P
0.5÷40	6	6	6	6	10	20	10	10
50÷63	-	6	-	6	10 (1P+N)	20	-	10
	I_{cs} (kA)							
0.5÷40	6	6	6	6	7.5	15	7.5	7.5
50÷63	-	6	-	6	7.5 (1P+N)	15	-	7.5

TOTAL POWER CONSUMPTION (W)

Poles	2	3	4	6	10	13	16	20	25	32	40	50	63
1P+N	2.4	2.1	2.6	2.5	3	-	3.4	3.7	4.2	4.7	-	-	-
2P				1.23	1.45	1.68	1.92	3.1	4.6	5.3	6.7	8.9	11.7
4P	-	-	-	6	4.8	-	9	9.3	11	13	-	-	-

DOWNGRADING IN TEMPERATURE

I _n (A)	-25	-5	10	20	30	40	50	60
0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4
1	1.2	1.1	1.1	1	1	0.9	0.9	0.9
2	2.4	2.2	2.1	2	2	1.9	1.8	1.8
3	3.6	3.3	3.2	3.1	3	2.9	2.7	2.6
4	4.9	4.5	4.3	4.1	4	3.9	3.7	3.6
6	7.3	6.7	6.4	6.2	6	5.8	5.6	5.4
10	12.2	11.2	10.7	10.3	10	9.7	9.3	9
16	19.7	18.4	17.3	16.6	16	15.3	14.7	14.1
20	24.6	22.8	21.6	20.8	20	19.2	18.4	17.6
25	31.2	29	27.2	26	25	24	22.7	21.7
32	40	36.9	34.9	33.3	32	30.7	29.1	27.8
40	50	47	44	42	40	38	36	34
50	62.5	58.8	55	52.5	50	47.5	45	42.5
63	78.1	74.7	69.9	66.1	63	59.8	56.1	52.9

EARTH LEAKAGE MODULES

for BT DIN45/60/100/160/250



G23... G24... G25... G26...

The earth leakage modules can be associated with the BT DIN45/60/100/160 circuit breakers with rated current up to 63A and to the BT DIN250 circuit breakers up to 25A. The A type AH (HPI) earth leakage devices performs high disturbance resistance. The AH (HPI) earth leakage devices are capable of supporting 8/20µs current pulses of up to 3 kA, the A-S devices are capable of supporting up to 5kA (8/20µs)

EARTH LEAKAGE MODULES							
2P				IEC EN 61009-1			
Type A	Type A Hpi	Type AC	Type A-S	In (A)	IΔn (A)	Vn (Vac)	N° of modules
G23A32	G23AH32	G23AC32		≤32	0.03		
G23A63	G23AH63	G23AC63		≤63			
G24A32		G24AC32	G24AS32	≤32	0.3		
G24A63		G24AC63	G24AS63	≤63			
G25A32		G25AC32		≤32	0.5	230	2
G25A63		G25AC63		≤63			
			G26AS32	≤32	1		
			G26AS63	≤63			

3P							
IEC EN 61009-1							
Type A	Type A Hpi	Type AC		In (A)	IΔn (A)	Vn (Vac)	N° of modules
G33A63	G33AH63	G33AC63		≤63	0.03		
G34A63		G34AC63		≤63	0.3	400	3
G35A63		G35AC63		≤63	0.5		



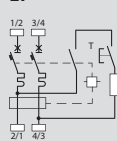
G43... G44... G45... G46...

4P							
IEC EN 61009-1							
Type A	Type A Hpi	Type AC	Type A-S	In (A)	IΔn (A)	Vn (Vac)	N° of modules
G43A32	G43AH32	G43AC32		≤32	0.03		2
G43A63	G43AH63	G43AC63		≤63			3
G44A32		G44AC32	G44AS32	≤32	0.3		2
G44A63		G44AC63	G44AS63	≤63			3
G45A32		G45AC32		≤32	0.5	400	2
G45A63		G45AC63		≤63			3
			G46AS32	≤32	1		2
			G46AS63	≤63			3

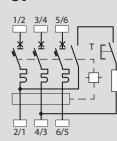
FEATURES

Reference standards	IEC EN 61009-1							
	2P		3P		4P			
N° of poles	2		3		4			
N° of modules	2		3		4			
Earth leakage characteristic	A (HPI)	AC	A-S	A (HPI)	AC	A (HPI)	AC	A-S
Magnetic curve	-		-		-			
Rated current In (A) a 30°C	0.5÷32		0.5÷32		0.5÷32			
	0.5÷63		0.5÷63		0.5÷63			
Earth leakage rated current IΔn (A)	0.03	0.1	0.03	0.03	0.03	0.1		
	0.3	0.3	0.3	0.3	0.3	0.3		
	0.5	1	0.5	0.5	0.5	1		
	-	-	-	-	-	-		
Earth leakage tripping time Δt (ms)	fisso							
Earth leakage breaking capacity IΔm (kA)	See table							
Rated voltage Ue (Vac)	230 (2P) - 400 (3P-4P)							
Maximum operating voltage Umax (Vac)	440							
Rated insulating voltage Ui (Vac)	500							
Minimum operating voltage for test pushbutton (Vac)	170 (2P)		250 (3P-4P) - IΔn = 30 mA		170 (3P-4P) - IΔn = 300-500 mA - 1A			
Rated frequency (Hz)	50							
Operating temperature (°C)	-25÷60							
Max No. of electrical/mechanical operations	10000/20000							
IP index (terminals/other zones)	IP20/IP40							
Maximum section of flexible/rigid cable(mm²)	25/35							
Resistance to vibrations	IEC 60068-2-35							
Tropical influence	IEC60068-2-11 - IEC60068-2-30							
Resistance to abnormal heat and to fire (°C)	650 - 960							

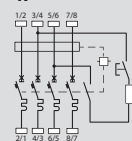
2P



3P



4P



POWER CONSUMPTION FOR POLE (W)

Poles	6	10	16	20	25	32	40	50	63	80	100	125
2P	0.04	0.1	0.26	0.41	0.64	1.6	0.68	1.07	1.7	1.43	2.23	3.48
3P-4P	0.07	0.19	0.5	0.78	1.2	2	0.88	1.37	2.17	1.57	2.45	3.83

EARTH LEAKAGE BREAKING CAPACITY IΔm PER EARTH LEAKAGE MODULES

	In (A)	Icn (kA)	Ics (%Icn)	IΔm (kA)
BT DIN45	6÷63	4.5	100	3
BT DIN60	0.5÷63	6	100	6
BT DIN100	6÷63	10	75	6
BT DIN250	6÷20	25	50	15
	25	20	50	12
	32-40	15	50	9
	50-63	12.5	50	7.5

EARTH LEAKAGE MODULES

for BT DIN250/500 (up to 63A)

1.5 modules per pole



G23X... G24X... G26X...

The earth leakage modules can be associated with the BT DIN500 circuit breakers and with BT DIN with rated current from 32 to 63A in 1.5 modules per pole. The A type AH (HPI) earth leakage devices performs high disturbance resistance. The AH (HPI) earth leakage devices are capable of supporting 8/20µs current pulses of up to 3 kA, the A-S devices are capable of supporting up to 5kA (8/20µs)(8/20µs)

Item code		EARTH LEAKAGE MODULES				
2P		IEC EN 60947-2				
Type A	Type A - Hpi	Type AC	In (A)	IΔn (A)	Vn (Vac)	N° of modules
G23XA63	G23XAH63	G23XAC63	≤63	0.03	400	2
G24XA63		G24XAC63	≤63	0.3		

2P		SETTING EARTH LEAKAGE MODULE			
		IEC EN 60947-2			
		IΔn (A) = 0.3-0.5-1			
		Δt (ms) = 0-60-150			
Type A - Hpi	In (A)	IΔn (A)	Vn (Vac)	N° of modules	
G27XAH63	≤63	0.3-0.5-1	400	4	



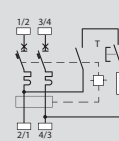
Item code		EARTH LEAKAGE MODULES				
4P		IEC EN 60947-2				
Type A	Type A - Hpi	Type AC	In (A)	IΔn (A)	Vn (Vac)	N° of modules
G43XA63	G43XAH63	G43XAC63	≤63	0.03	400	3
G44XA63	G44XAH63	G44XAC63	≤63	0.3		

4P		SETTING EARTH LEAKAGE MODULE			
		IEC EN 60947-2			
		IΔn (A) = 0.3-0.5-1			
		Δt (ms) = 0-60-150			
Type A - Hpi	In (A)	IΔn (A)	Vn (Vac)	N° of modules	
G47XAH63	≤63	0.3-0.5-1	400	6	

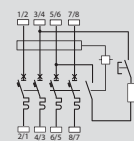
FEATURES

Reference standards	IEC EN 60947-2					
N° of poles	2P			4P		
N° of modules	2 (4 for settable version)			4 (6 for settable version)		
Earth leakage characteristic	A	A - Hpi	AC	A	A - Hpi	AC
Rated current In (A) a 30°C	≤63					
Earth leakage rated current IΔn (A)	0.03 - 0.3	0.03	0.03 - 0.3	0.03 - 0.3		
Setting of earth leakage current IΔn (A) (only for settable version)	(0.3 - 0.5 - 1)			(0.3 - 0.5 - 1)		
Earth leakage tripping time Δt (ms) (only for settable version)	(0-60-150)					
Earth leakage breaking capacity IΔm (kA)	See table					
Rated voltage Ue (Vac)	400					
Maximum operating voltage Umax (Vac)	440					
Rated insulating voltage Ui (Vac)	500					
Minimum operating voltage for test pushbutton (Vac)	170					
Rated frequency (Hz)	50					
Operating temperature (°C)	-25÷60					
Max No. of electrical/mechanical operations	10000/20000					
IP index (terminals/other zones)	IP20/IP40					
Maximum section of flexible/rigid cable(mm²)	50/70					
Resistance to vibrations	IEC 60068-2-35					
Tropical influence	IEC60068-2-11 - IEC60068-2-30					
Resistance to abnormal heat and to fire (°C)	650 - 960					

2P



4P



EARTH LEAKAGE BREAKING CAPACITY IΔm PER EARTH LEAKAGE MODULES

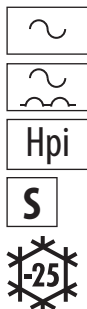
	In (A)	Icn (kA)	Ics (%Icn)	IΔm (kA)
BT DIN45	6÷63	4.5	100	3
BT DIN60	0.5÷63	6	100	6
BT DIN100	6÷63	10	75	6
BT DIN250	6÷20	25	50	15
	25	20	50	12
	32-40	15	50	9
	50-63	12.5	50	7.5

POWER CONSUMPTION FOR POLE (W)

Poles	6	10	16	20	25	32	40	50	63	80	100	125
2P	0.04	0.1	0.26	0.41	0.64	1.6	0.68	1.07	1.7	1.43	2.23	3.48
3P-4P	0.07	0.19	0.5	0.78	1.2	2	0.88	1.37	2.17	1.57	2.45	3.83

EARTH LEAKAGE MODULES

for BT DIN160/250 (from 80 to 125A)



G24X... G26X...

The earth leakage modules can be associated with the BT DIN160/250 with rated current from 80 to 125A. The A type AH (HPI) earth leakage devices performs high disturbance resistance. The AH (HPI) earth leakage devices are capable of supporting 8/20µs current pulses of up to 3 kA, the A-S devices are capable of supporting up to 5kA (8/20µs)

Item code		EARTH LEAKAGE MODULES			
2P		IEC EN 60947-2			
Type A - Hpi	Type AC	In (A)	IΔn (A)	Vn (Vac)	N° of modules
G23XAH125	G23XAC125	≤125	0.03	400	4

2P		SETTING EARTH LEAKAGE MODULE			
2P		IEC EN 60947-2			
		IΔn (A) = 0.3-0.5-1			
		Δt (ms) = 0-60-150			
Type A - Hpi		In (A)	IΔn (A)	Vn (Vac)	N° of modules
G27XAH125		≤125	0.3-0.5-1	400	4



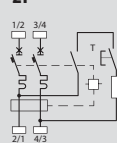
Item code		EARTH LEAKAGE MODULES			
4P		IEC EN 60947-2			
Type A - Hpi	Type AC	In (A)	IΔn (A)	Vn (Vac)	N° of modules
G43XAH125	G43XAC125	≤125	0.03	400	6
	G44XAC125	≤125	0.3		

4P		SETTING EARTH LEAKAGE MODULE			
4P		IEC EN 60947-2			
		IΔn (A) = 0.3-0.5-1			
		Δt (ms) = 0-60-150			
Type A - Hpi		In (A)	IΔn (A)	Vn (Vac)	N° of modules
G47XAH125		≤125	0.3-0.5-1	400	6

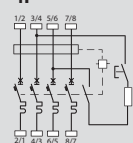
FEATURES

Reference standards	IEC EN 60947-2			
N° of poles	2P		4P	
N° of modules	4		6	
Earth leakage characteristic	A - Hpi	AC	A - Hpi	AC
Rated current In (A) a 30°C	≤125		≤125	
Earth leakage rated current IΔn (A)	0.03		0.03 - 0.3	
Setting of earth leakage current IΔn (A) (only for settable version)	(0.3 - 0.5 - 1)		(0.3 - 0.5 - 1)	
Earth leakage tripping time Δt (ms) (only for settable version)	(0-60-150)			
Earth leakage breaking capacity IΔm (kA)	See table			
Rated voltage Ue (Vac)	400			
Maximum operating voltage Umax (Vac)	440			
Rated insulating voltage Ui (Vac)	500			
Minimum operating voltage for test pushbutton (Vac)	170			
Rated frequency (Hz)	50			
Operating temperature (°C)	-25 ÷ 60			
Max No. of electrical operations	10000			
Max No. of mechanical operations	20000			
IP index (terminals/other zones)	IP20/IP40			
Maximum section of flexible/rigid cable(mm²)	50/70			
Resistance to vibrations	IEC 60068-2-35			
Tropical influence	IEC60068-2-11 - IEC60068-2-30			
Resistance to abnormal heat and to fire (°C)	650 - 960			

2P



4P



EARTH LEAKAGE BREAKING CAPACITY IΔm PER EARTH LEAKAGE MODULES

	In (A)	Icn (kA)	Ics (%Icn)	IΔm (kA)
BT DIN45	6÷63	4.5	100	3
BT DIN60	0.5÷63	6	100	6
BT DIN100	6÷63	10	75	6
BT DIN250	6÷20	25	50	15
	25	20	50	12
	32-40	15	50	9
	50-63	12.5	50	7.5

TOTAL POWER CONSUMPTION (W)

Poles	6	10	16	20	25	32	40	50	63	80	100	125
2P	0.04	0.1	0.26	0.41	0.64	1.06	0.68	1.07	1.7	1.43	2.23	3.48
3P-4P	0.07	0.19	0.5	0.78	1.2	2	0.88	1.37	2.17	1.57	2.45	3.83

EARTH LEAKAGE MODULES

with integrated measuring function



G47...

EARTH LEAKAGE MODULES for applications such as main circuit breakers in panelboards and cabinets MAS400 (In ≤ 125 A to 25kA), or as circuit breakers for direct or derivate departures (eg. Motors), for electrical groups up to 50kA in MAS4000 enclosures.

- Earth leakage module with ENERGY COUNTER integrated
- Earth leakage module with MEASURING integrated functions

EARTH LEAKAGE MODULES WITH ENERGY COUNTER INTEGRATED

Item code					
4P IEC EN 60947-2					
Type A - Hpi	In (A)	IΔn (A)	Δt (s)	Vn (Vac)	N° of modules
G47XM63	≤63	0.03 - 0.3 - 1	0 - 0.3 - 1 - 3	400	7.5
G47XM125	≤125	0.03 - 0.3 - 1	0 - 0.3 - 1 - 3	400	7.5

EARTH LEAKAGE MODULES WITH MEASURING FUNCTIONS INTEGRATED

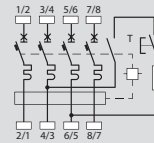
4P IEC EN 60947-2					
Type A - Hpi	In (A)	IΔn (A)	Δt (s)	Vn (Vac)	N° of modules
G47XCM63	≤63	0.03 - 0.3 - 1	0 - 0.3 - 1 - 3	400	7.5
G47XCM125	≤125	0.03 - 0.3 - 1	0 - 0.3 - 1 - 3	400	7.5

INTERFACE FOR ELECTRONIC CIRCUIT BREAKERS

M7COM	Interface for BT DIN with measuring functions and electronic MEGATIKER M1 160 and M2 250. Converts the data available on the electronic board of the circuit breaker in data on MODBUS protocol. Detect switch features, the history of the trippings and the last shot details. Communication network with MODBUS protocol over RS - 485 physical layer . Vn = 24 Vac/d.c. - 1 DIN module
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FEATURES

Reference standards	IEC EN 60947-2
N° of poles	4P
N° of modules	7.5
Earth leakage characteristic	A - Hpi
Rated current In (A) a 30°C	≤63 - ≤125
Setting of earth leakage current IΔn (A)	regolabile (0.03 - 0.3 - 1)
Earth leakage tripping time Δt (s)	regolabile (0-0.3 -1 - 3)
Rated voltage Ue (Vac)	400
Maximum operating voltage Umax (Vac)	440
Rated insulating voltage Ui (Vac)	500
Minimum operating voltage for test pushbutton (Vac)	170
Rated frequency (Hz)	50
Operating temperature (°C)	-25÷60
Max No. of electrical operations	10000
Max No. of mechanical operations	20000
IP index (terminals/other zones)	IP20/IP40
Maximum section of flexible/rigid cable(mm²)	50/70
Resistance to vibrations	IEC 60068-2-35
Tropical influence	IEC60068-2-11 - IEC60068-2-30
Resistance to abnormal heat and to fire (°C)	650 - 960



MEASURE

Art. G47XM63. G47XM125	Art. G47XCM63. G47XCM125
Energy counter	Measure functions
<ul style="list-style-type: none"> - Current (IL1- IL2-IL3-IN) - Instantaneous value of the earth leakage current (IΔn) - Instantaneous active power (Ptot W) - Active energy - Last historical trippings 	<ul style="list-style-type: none"> - Current (IL1- IL2-IL3-IN) - Instantaneous value of the earth leakage current (IΔn) - Voltage (V1N-V2N-V3N) - Frequency (Hz) - Instantaneous active power (Ptot W) - Instantaneous reactive power (Qtot W) - Power factor - Active energy - Reactive energy - THD - Last historical trippings

EARTH LEAKAGE CIRCUIT BREAKERS

with IN and OUT upside



G72...

IEC EN 61008-1
IN/OUT connection upside
Possibility of connection with combs

Item code		TWO-POLES - 230 Vac		
		I Δ n = 0.03A		
Type A	Type AC	In (A)	I Δ n (A)	N° of modules
G723A25H	G723AC25H	25	0.03	2
G723A40H	G723AC40H	40	0.03	2

CABLING COMBS

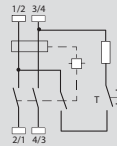
	N° of modules
FP5/1P	5
FP7/1P	7
FP11/1P	11
FP57/1P	57

COVER ELEMENTS FOR COMBS

FP00/1P

FEATURES

Reference standards	IEC EN 61008-1	
N° of poles	2P	
N° of modules	2	
Earth leakage characteristic	A	AC
Rated current In (A) a 30°C	25 - 40	
Earth leakage rated current I Δ n (A)	0.03	
Earth leakage breaking capacity I Δ m (kA)	500	
Rated voltage Ue (Vac)	230	
Maximum operating voltage Umax (Vac)	250	
Rated insulating voltage Ui (Vac)	500	
Minimum operating voltage for test pushbutton (Vac)	180	
Rated frequency (Hz)	50-60	
Operating temperature (°C)	-25÷60	
Max No. of electrical operations	10000	
Max No. of mechanical operations	20000	
IP index (terminals/other zones)	IP20/IP40	
Maximum section of flexible/rigid cable(mm ²)	50/70	
Resistance to vibrations	IEC 60068-2-35	
Tropical influence	IEC60068-2-11 - IEC60068-2-30	
Resistance to abnormal heat and to fire (°C)	650 - 960	



CONDITIONED BREAKING CAPACITY INC (KA)

RCD downstream	In (A)	MCB upstream			
		BTDIN45	BTDIN60	BTDIN100/250	BTDIN160/250 (80÷125A)
2P	25÷40	4.5	6	10	6

Diff. a valle	In (A)	Fuses upstream			
		25	32	40	80
2P	25	100	100	80	80
	40	—	—	80	80

TOTAL POWER CONSUMPTION (W)

Poles	16	25	40	63	80
2P	2.5	4	5.75	6.5	7.75

EARTH LEAKAGE CIRCUIT BREAKERS

Residual current device



G72...



G74...

IEC EN 61008-1

Item code		TWO-POLES - 230 Vac		
Type A	Type AC	In (A)	IΔn (A)	N° of modules
G722A16	G722AC16	16	0.01	2

Type A	Type A Hpi	Type AC	In (A)	IΔn (A)	N° of modules
G723A25	G723AH25	G723AC25	25		
G723A40	G723AH40	G723AC40	40	0.03	2
G723A63	G723AH63	G723AC63	63		

Type A	Type A-S	Type AC	In (A)	IΔn (A)	N° of modules
	G721AS25	G721AC25	25		
G721A40	G721AS40	G721AC40	40	0.1	2
G721A63	G721AS63	G721AC63	63		

Type A	Type A-S	Type AC	In (A)	IΔn (A)	N° of modules
G724A25	G724AS25	G724AC25	25		
G724A40	G724AS40	G724AC40	40	0.3	2
G724A63	G724AS63	G724AC63	63		
G724A80	G724AS80	G724AC80	80		

Type A	Type A-S	Type AC	In (A)	IΔn (A)	N° of modules
G725A25	G725AS25	G725AC25	25		
G725A40	G725AS40	G725AC40	40	0.5	2
G725A63	G725AS63	G725AC63	63		
G725A80	G725AS80	G725AC80	80		

Item code		FOUR-POLES - 400 Vac			
Type A	Type A Hpi	Type AC	In (A)	IΔn (A)	N° of modules
G743A25	G743AH25	G743AC25	25		
G743A40	G743AH40	G743AC40	40	0.03	4
G743A63	G743AH63	G743AC63	63		

Type A	Type A-S	Type AC	In (A)	IΔn (A)	N° of modules
G741A25	G741AS25	G741AC25	25		
G741A40	G741AS40	G741AC40	40	0.1	4
G741A63	G741AS63	G741AC63	63		

Type A	Type A-S	Type AC	In (A)	IΔn (A)	N° of modules
G744A25	G744AS25	G744AC25	25		
G744A40	G744AS40	G744AC40	40	0.3	4
G744A63	G744AS63	G744AC63	63		
G744A80	G744AS80	G744AC80	80		

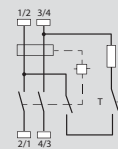
Type A	Type A-S	Type AC	In (A)	IΔn (A)	N° of modules
G745A25	G745AS25	G745AC25	25		
G745A40	G745AS40	G745AC40	40	0.5	4
G745A63	G745AS63	G745AC63	63		
G745A80	G745AS80	G745AC80	80		

NOTE: The A type AH (HPI) earth leakage devices performs high disturbance resistance. The AH (HPI) earth leakage devices are capable of supporting 8/20μs current pulses of up to 3 kA, the A-S devices are capable of supporting up to 5kA (8/20μs)

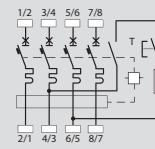
FEATURES

Reference standards	IEC EN 61008-1		
N° of poles	2P		4P
N° of modules	2		4
Earth leakage characteristic	A-Hpi	AC	A-S
Rated current In (A) a 30°C	16 - 25 - 40 - 63 - 80		25 - 40 - 63 - 80
Earth leakage rated current IΔn (A)	0.01 - 0.03 - 0.3 - 0.5	0.3 - 0.5	0.03 - 0.3 - 0.5 0.3 - 0.5
Earth leakage breaking capacity IΔm (A)	1000		
Rated voltage Ue (Vac)	400		
Maximum operating voltage Umax (Vac)	440		
Rated insulating voltage Ui (Vac)	500		
Minimum operating voltage for test pushbutton (Vac)	180 per IΔn = 30mA 120 per altre IΔn	320 per IΔn = 30mA 220 per altre IΔn	
Rated frequency (Hz)	50-60		
Operating temperature (°C)	-25÷60		
Max No. of electrical operations	10000		
Max No. of mechanical operations	20000		
IP index (terminals/other zones)	IP20/IP40		
Maximum section of flexible/rigid cable(mm²)	25/35		
Resistance to vibrations	IEC 60068-2-35		
Tropical influence	IEC60068-2-11 - IEC60068-2-30		
Resistance to abnormal heat and to fire (°C)	650 - 960		

2P



4P



EARTH LEAKAGE BREAKING CAPACITY IΔm

In (A)	2P		4P	
	Im (A)	IΔm (A)	Im (A)	IΔm (A)
16	500	1000	-	-
25	500	1000	500	1000
40	500	1000	500	1000
63	630	1000	630	1000
80	800	1000	800	1000

CONDITIONED BREAKING CAPACITY INC (KA)

RCD downstream	In (A)	MCB upstream			
		BTDIN45	BTDIN60	BTDIN100/250	BTDIN160/250 (80÷125A)
2P	16÷40	4.5	6	10	6
	63	—	6	10	6
	80	—	6	—	6
4P	25÷63	4.5	6	10	6
	80	—	—	10	6

RCD downstream Fuses gG upstream

RCD downstream	In (A)	Fuses gG upstream							
		16	25	32	40	50	63	80	100
2P	16	100	100	100	80	50	30	10	6
	25	—	100	100	80	50	30	10	6
	40	—	—	—	80	50	30	10	6
	63	—	—	—	—	—	30	10	6
	80	—	—	—	—	—	—	10	6
4P	25	—	10	10	10	10	10	10	—
	40	—	—	—	10	10	10	10	—
	63	—	—	—	—	—	10	10	—
	80	—	—	—	—	—	—	—	—

TOTAL POWER CONSUMPTION (W)

Poles	16	25	40	63	80
2P	2.5	4	5.75	6.5	7.75
4P	-	2.5	4	6.33	9.5

EARTH LEAKAGE CIRCUIT BREAKERS

Residual current device - Type B



Item code	TYPE B - TWO-POLES		
Rated voltage 400Vac			
2P	In (A)	IΔn (A)	N° of modules
411842	40	0.03	4
411843	63		
411844	40	0.3	4
411845	63		

TYPE B - FOUR-POLES			
Rated voltage 400Vac			
4P	In (A)	IΔn (A)	N° of modules
411846	40	0.03	4
411847	63		
411848	40	0.3	4
411849	63		

ACCESSORIES

406259	Auxiliary contact 1NO/NC for RCD Type B - 230Vac
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Note: All products are available with LEGRAND brand

FEATURES

Reference standards	IEC EN 62423	
N° of poles	2P	4P
N° of modules	4	4
Earth leakage characteristic	B (alternating sinusoidal residual current up to 1000Hz)	
Rated current In (A) a 30°C	40 - 63	
Earth leakage rated current IΔn (A)	0.03 - 0.3	
Conditioning differential short circuit current IΔc (kA)	10	
Earth leakage breaking capacity IΔm (kA)	500 (per In= 40A) - 630 (per In= 63A)	
Rated voltage Ue (Vac)	230	230/400
Maximum operating voltage Umax (Vac)	255	440
Rated insulating voltage Ui (Vac)	500	
Rated pulse withstand voltage Uimp (kV)	4	
Minimum operating voltage for test pushbutton (Vac)	100	185
Rated frequency (Hz)	50	
Operating temperature (°C)	-25 ÷ 40	
Max No. of electrical operations	2000	
Max No. of mechanical operations	5000	
IP index (terminals/other zones)	IP20/IP40	
Maximum section of flexible/rigid cable(mm²)	35/50	
Resistance to vibrations	IEC 60068-2-35	
Tropical influence	IEC60068-2-11 - IEC60068-2-30	
Resistance to abnormal heat and to fire (°C)	650 - 960	
Power consumption (W)	2.9 (per In= 40A) - 7.2 (per In= 63A)	

CONDITIONED BREAKING CAPACITY INC (KA) WITH FUSES

In (A)	gG and aM			
	≤50	63	80	≥100
40/63	100	50	15	10

CONDITIONED BREAKING CAPACITY INC (KA) WITH MCB'S

Diff. a valle	Interrutthours magnetotermico a monte								
	BTDIN45		BTDIN60		BTDIN100/250		BTDIN160/250		
	1P+N	2÷4P	1P+N	2÷4P	1P+N	2÷4P	1÷4P		
In (A)	≤40	≤32	≤50	≤63	≤20	≤125	≤125	≤80	≤63
40A	6	10	10	16	16	25	36	50	70
63A	-	6	-	10	-	16	25	36	50

EARTH LEAKAGE RELAY WITH SEPARATE TOROIDS



G701N



G701Q

Separated toroids earth leakage relays control the opening of one or more circuit breakers, by means of releases when a fault current towards the earth exceeds the set threshold.

A mechanical interlock prevents from setting any type of time delay, when the earth leakage current value is set to 0.03A.

Item code	EARTH LEAKAGE RELAY		
	Earth leakage relay A type with current and tripping time adjustment, 1 NO/NC output contact		
	$I_{\Delta n}$ (A)	Δt (s)	N° of modules
G701N	0.03÷30	0÷5	2

Item code	PANEL EARTH LEAKAGE RELAY		
	Earth leakage relay with current and tripping time adjustment, 1 NO/NC output contact, 1 NO/NC signalling pre-alarm contact 50% $I_{\Delta n}$		
	$I_{\Delta n}$ (A)	Δt (s)	LxA (mm)
G701Q	0.03÷30	0÷5	72x72



G701T/...

Item code	TOROIDS FOR EARTH LEAKAGE RELAY		
	\varnothing toroid (mm)	$I_{\Delta n}$ (A)	I_n (A)
G701T/35N	35	0.03	200
G701T/80N	80	0.03	400
G701T/110N	110	0.1	600
G701T/140N	140	0.3	1200
G701T/210N	210	0.3	1800
G701T/150A*	150	0.5	1200
G701T/300A*	300	1	2000

* Open type

TECHNICAL DATA OF EARTH LEAKAGE RELAYS

Operation frequency	47-63Hz (fn 50Hz)
Earth leakage rated current $I_{\Delta n}$ (A)	selectable with 7 positions 3 ranges x1-x10-x100
Tripping time t (s)	selectable with 7 positions (0-0.15-0.25-0.5-1-2.5-5)
Green LED "ON"	device powered
Red LED "TRIP"	tripping + relay switching
Red LED "TRIP" flashing	interruption of relay-toroid connections + relay switching
Temperature range	-5-50°C
Protection index	IP50 (front cover), IP20 (terminals and housing)
Suitable for use in tropical climates	yes

FEATURES TOROIDI

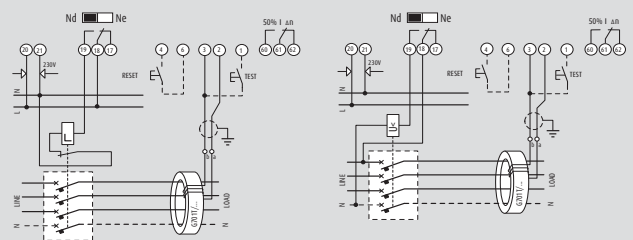
Standards	IEC EN 62947-2 annex B-M
Toroid diameter (mm)	35-300
Maximum rated current I_n (A)	200-2000
Earth leakage rated current $I_{\Delta n}$ (A)	0.03-30
Insulation resistance (Mohm)	≥ 10
Primary/secondary turns ratio	1/700
Short circuit thermal current I_{th} for 1s (kA)	20
Dynamic current I_{dn} for 0.05s (kA)	40
Temperature range (°C)	-10-55
Max. section of wire which can be connected (mm ²)	2.5

WIRING DIAGRAMS

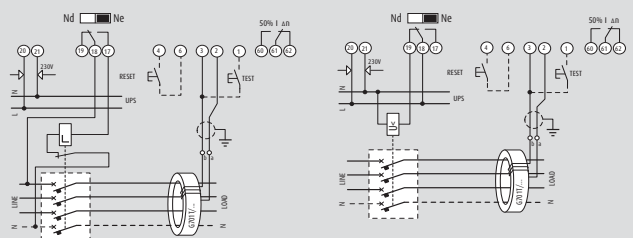
The presence of the bridge define the type of operation of the earth leakage relay:

- with the bridge ON, the device operates in Conditioned Safety (standard) mode, causing the opening of the circuit breakers only in the presence of ground fault current
- with the bridge OFF, the device operates in Unconditioned Safety (positive) mode, and the opening of the circuit breaker is subjected either to the presence of ground fault current, or to the lack of power supply to the earth leakage relay.

Positive safety (Nd)



Standard safety (Ne)



CONTACTS AND RELEASES



Item code	AUXILIARY AND ALARM CONTACTS		
	Contact	Type	N° of modules
F80CA	1NO/NC	AUX	1
F80CA05	1NO/NC	AUX	0.5
F80CR	2NO/NC	AUX + AUX o ALL	1
F80CR05	1NO/NC	ALL	0.5
F80RC	1NO/NC	AUX o ALL	1
F80RC05	1NO/NC	AUX o ALL	0.5

SHUNT TRIPS		
	Vn (V)	N° of modules
F80ST1	12÷48 a.c./d.c.	1
F80ST2	110÷415 a.c. 110÷125 d.c.	1

UNDervOLTAGE RELEASES		
	Vn (V)	N° of modules
F80SV1	24÷48 a.c./d.c.	1
F80SV2	230 a.c.	1

EMERGENCY RELEASES		
	Vn (V)	N° of modules
F80SVE1	24 a.c.	1
F80SVE2	230 a.c.	1
F80B	buffer battery module	0.5

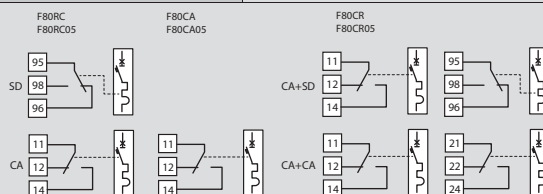
MAXIMUM VOLTAGE RELEASE		
	Vn (V)	N° of modules
F80SVP	230 a.c.	1



ACCESSORIES FOR BT DIN	
F80CV	screw caps
F80SEP	insulating shields
F80BL	padlockable lever lock
F80/05D	spacer module (0.5 modules)

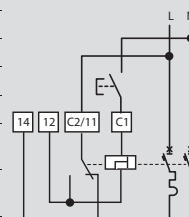
FEATURES OF AUXILIARY AND ALARM CONTACTS

Standards	IEC EN 60947-5-1
Rated voltage Vn	24÷240 Vdc 240÷400 Vac
Utilization category	AC12
Contact output (A)	4 (24 Vdc) - 1 (60 Vdc) - 0.5 (230 Vdc) 6 (230 Vac) - 3 (400 Vac)
Max. section of flexible cable (mm ²)	1.5



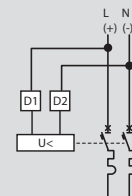
FEATURES OF SHUNT TRIPS (ITEM F80ST...)

Standards	IEC EN 23-105
Rated voltage Vn	12÷48 Vac/dc 110÷125 Vdc
Operating voltage (% Vn)	70÷115
Tripping time (ms)	<20
Max. absorbed power at activation (W)	100 (F80ST1) 110 (F80ST2) 110÷415 Vac 10 (F80ST2) 110÷125 Vdc
Total resistance (ohm)	23 (F80ST1) 1640 (F80ST2)
Current absorbed at min/max voltage (mA)	522/2610 (F80ST1) 69/259 (F80ST2)
Max. section of flexible cable (mm ²)	1.5



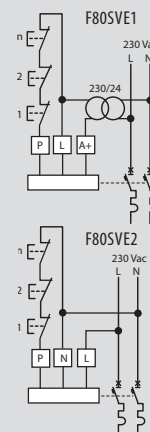
FEATURES OF UNDervOLTAGE RELEASES (ITEM F80SV...)

Standards	IEC EN 23-105
Rated voltage Vn:	24-48 Vdc 230 Vac
Release voltage (%Vn)	55
Reset voltage (%Vn)	> 55
Tripping time (ms)	0÷300
Max. absorbed power at activation (W)	0.2 (F80SV1) 1 (F80SV2)
Max. section of flexible cable (mm ²)	1.5



FEATURES OF EMERGENCY RELEASES (ITEM F80SVE...)

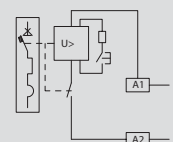
Standards	IEC EN 23-105
Rated voltage Vn (Vac):	24-240
Operating voltage (% Vn)	85÷110
Maxi. number of charge/discharge cycles	50 whit item F80B
Reserve after 150 hours of charge	>60 hour with item F80B
Max. absorbed power at activation (W)	0.2 (F80SVE1) 1 (F80SVE2)
Total resistance (ohm):	1000*
Max. section of flexible cable (mm ²)	1.5



* maximum circuit resistance taking into account the length of the line and the max. number of pushbuttons connected

FEATURES OF MAXIMUM VOLTAGE RELEASES (ITEM F80SVP)

Standards	EN 50550: 2010
Rated voltage Vn	230 Vac
Rated pulse withstand voltage Uimp	5kV
Rated insulating voltage Ui	500 Vac
Max. absorbed power (VA)	0.45
Max. section of flexible cable (mm ²)	1.5



SALVAVITA STOP&GO



F80SG

SALVAVITA STOP&GO is the intelligent BTicino device that is on its own capable of solving the problem of unwanted tripping of earth leakage circuit breakers due to storms, overvoltages, and transitory network disturbances. SALVAVITA STOP&GO can be used together with all the BTICINO earth leakage circuit breakers. This device can be used in TT and TN distribution system.

Item code	SALVAVITA STOP&GO	
	It checks the system insulation and closes back the general circuit breaker that may have tripped for reasons not connected with a fault	
	Vn (V)	N° of modules
F80SG	230 Vac	2

	SALVAVITA STOP&GO BTEST	
	It checks the system insulation and also regularly checks the earth leakage (BTEST). It closes back the general circuit breaker only if no fault is present.	
	Vn (V)	N° of modules
F80SGB	230 Vac	2

	SALVAVITA STOP&GO PLUS	
	It checks the system insulation and closes back the general circuit breaker only if no fault is detected. In case of fault the device monitors the persistence of the fault during the following 24 hour period, and once the fault has been resolved it waits 30 minutes before allowing the circuit breaker to close again	
	Vn (V)	N° of modules
F80SGPN	230 Vac	2

	ACCESSORIES FOR SALVAVITA STOP&GO	
F80SCSN	SCS interface for Salvavita STOP&GO	

FEATURES

Standards	EN50557
N° of modules	2
Rated voltage Vn (Vac)	230
Minimum operating voltage	85% Vn
Maximum operating voltage	110% Vn
Rated frequency (Hz)	50
Maximum No. of operations	4000
Maximum operation frequency (man/h)	120
Maximum activation power (VA)	20
Operating temperature (°C)	-5÷60
Max. section of flexible cable (mm²)	2.5 (or 2x1.5)

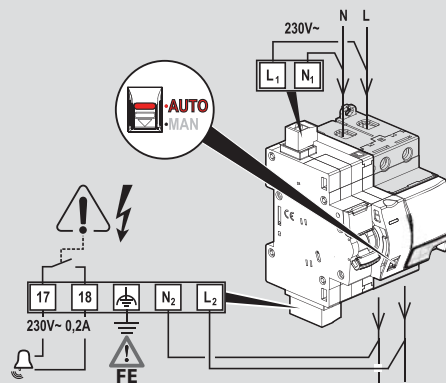
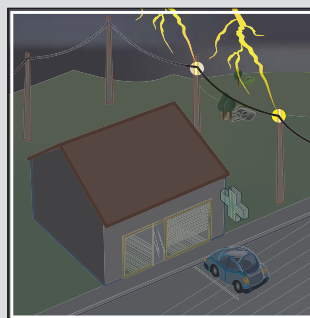


TABLE OF ACCESSORIABILITY

F80SG F80SGPN	FA81N... FA82... FN81N... FN82... FH81N... FH82... FT81N... (<63A) FT82... (<63A) FV82... (<25A)	FA81N... + G2... FA82... + G2... FN81N... + G2... FN82... + G2... FH81N... + G2... FH82... + G2... FT81N... + G2... (<63A) FT82... + G2... (<63A) FV82... + G2... (<25A)	GA8812... GA8813... GN8813... GN8814... GN823... GC8230... GC8813...	GC723...

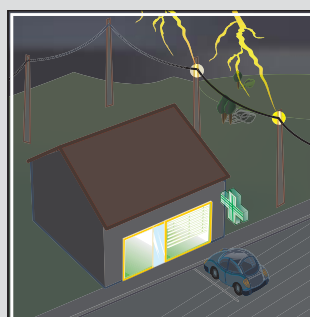
Installation without STOP&GO



Electrical appliances are no longer supplied and the power supply can be interrupted at untimely



Installation with STOP&GO



Electrical devices are powered and power is restored safely



Before resetting the circuit breaker, the SALVAVITA STOP & GO analyzes the status of the plant and in case of non-permanent fault resets the switch signaling the presence of the fault, by using a light and an audible alarm indicator. The BTEST version, periodically and automatically performs the differential test without resorting therehours to the manual verification.

MOTOR OPERATORS



F80MC230



F80MR230

Item code

MOTOR OPERATORS

- Integrated electric and mechanical lock in the open position, to guarantee insulation during maintenance operations.
- Thermal magnetic and earth leakage tripping reset.
- Pushbutton controls.
- Selector controls for held type control.
- Cyclical pushbutton control.
- PLC maintained control
- Installation with circuit breakers up to 63A 4P and with simple earth leakage circuit breakers (excepted for BT DIN with 1.5 modules for each pole)

	Vn (V)	N° of modules
F80MC230	230Vac	1
F80MC24	24/48Vac/dc	1

MOTOR OPERATORS WITH AUTOMATIC RESET

- Motor operator with automatic reset with the possibility of selecting the number of reset attempts (from 1 to 5) and the reset times.
- Pushbutton controls.
- Selector controls for held type control.
- Cyclical pushbutton control.
- PLC maintained control
- Can be fitted with up to 3 electrical auxiliaries
- Signalling contact for rearming block and integrated status contact
- Open position lock

	Vn (V)	N° of modules
F80MR230	230 Vac	2
F80MR24	24/48Vac/d.c.	2

MOTOR OPERATORS (FOR MCB WITH 1.5 POLES PER MODULE)

- Integrated electric and mechanical lock in the open position, to guarantee insulation during maintenance operations.
- Thermal magnetic and earth leakage tripping reset.
- Pushbutton controls.
- Selector controls for held type control.
- Cyclical pushbutton control.
- PLC maintained control
- Installation with circuit breakers 2P, 3P and 4P with 1.5 modules for each pole

	Vn (V)	N° of modules
F80MCH230	230Vac	2

FEATURES

Rated voltage Vn (Vac)	24-230
Minimum operating voltage	85% Vn
Maximum operating voltage	110% Vn
Maximum insulation voltage (kV)	2.5 (per 1 min)
Rated frequency (Hz)	50
Maximum No. of operations	20000
Maximum operation frequency (man/h)	120
Activation delay (s)	< 1
Duration of the control to Vn (ms)	≥ 100
Duration of the control to Vn (VA)	25 (at 230 Vac) 2 (at idle state)
Operating temperature (°C)	-5÷60
Max. section of flexible cable (mm²)	2.5 (or 2x1.5)

WIRING DIAGRAMS

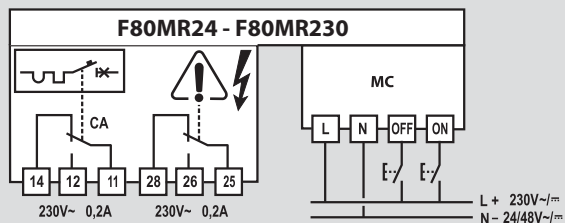
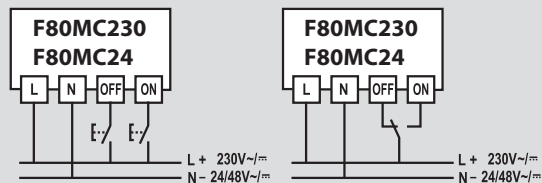
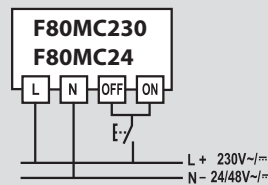


TABLE OF ACCESSORIABILITY

			F80MC230/F80MC24 F80MR230/F80MR24 F80MCH230	
		F80... CA/CR/RC/CA05/ CR05/RC05	F80MC230/F80MC24 F80MR230/F80MR24 F80MCH230	
	F80... CA05/CR05/RC05/ ST1/ST2/SV1/SV2/SVP SVE1+F80B/SVE2+F80B	F80... CA05/CR05/RC05	F80MC24 F80MC230	
	F80... CA05/CR05/RC05/ ST1/ST2/SV1/SV2/SVP SVE1+F80B/SVE2+F80B	F80... CA/CR/RC		
	F80... CA05/CR05/RC05	F80... CA05/CR05/RC05	F80MCH230	
	F80... CA05/CR05/RC05/CA/CR/RC	F80... CA/CR/RC		
	F80... CA05/CR05/RC05	F80... CA05/CR05/RC05	F80MR230 F80MR24	
	F80... CA/CR/RC/CA05/CR05/RC05	F80... CA/CR/RC		

MECHANICAL INTERLOCK AND ROTARY HANDLES



F80KM2

MECHANICAL INTERLOCK FOR BT DIN

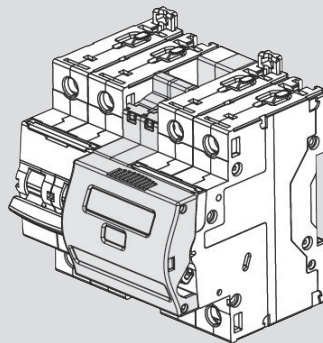
Item code	
F80KM2	For thermal magnetic MCB - 2P
F80KM3	For thermal magnetic MCB - 3P
F80KM4	For thermal magnetic MCB - 4P



ROTARY HANDLE

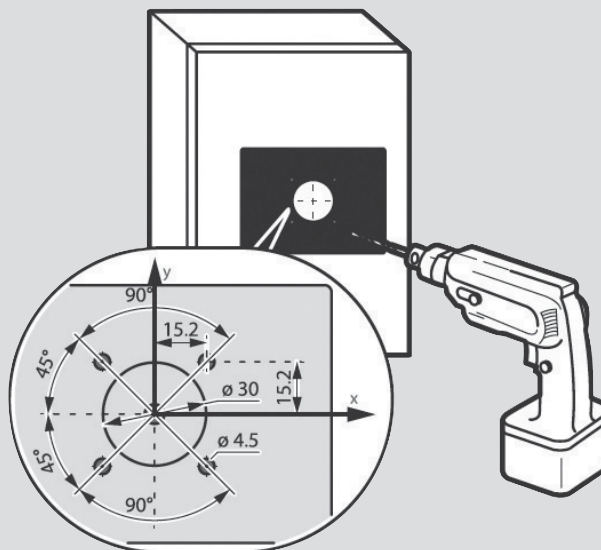
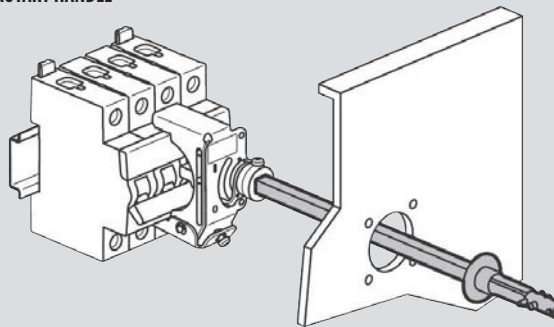
Item code	Colour	Description
F80KMN	black	Vary-depth rotary handle for BT DIN
F80KMR	red	Emergency vary-depth rotary handle for BT DIN

MECHANICAL INTERLOCK



 17,5 mm	 $\begin{matrix} 1 & 3 \\ 2 & 4 \end{matrix}$	F80KM2	 $\begin{matrix} 1 & 3 \\ 2 & 4 \end{matrix}$
 17,5 mm	 $\begin{matrix} 1 & 3 & 5 \\ 2 & 4 & 6 \end{matrix}$	F80KM3	 $\begin{matrix} 1 & 3 & 5 \\ 2 & 4 & 6 \end{matrix}$
 17,5 mm	 $\begin{matrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \end{matrix}$	F80KM4	 $\begin{matrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \end{matrix}$

ROTARY HANDLE



MOTOR PROTECTORS



MS32/...

- Free release control
- Adjustment of thermal release on the three phases
- Magnetic release on the three phases fixed at 12 Ir
- Test and reset pushbutton
- Insulation guaranteed
- Sensitive to lack of phase
- Maximum number of accessories that can be installed: 3

Item code	MOTOR PROTECTORS				
	Poles	Vn (V)	Ir (A)	Im (A)	N° of modules
MS32/016	3P	400	0.1÷0.16	1.92	2.5
MS32/025	3P	400	0.16÷0.25	3	2.5
MS32/040	3P	400	0.25÷0.40	4.8	2.5
MS32/063	3P	400	0.40÷0.63	7.56	2.5
MS32/1	3P	400	0.63÷1	12	2.5
MS32/2	3P	400	1÷1.6	19.2	2.5
MS32/3	3P	400	1.6÷2.5	30	2.5
MS32/4	3P	400	2.5÷4	48	2.5
MS32/6	3P	400	4÷6.5	78	2.5
MS32/10	3P	400	6.3÷10	120	2.5
MS32/14	3P	400	9÷14	168	2.5
MS32/18	3P	400	13÷18	216	2.5
MS32/23	3P	400	17÷23	276	2.5
MS32/25	3P	400	20÷25	300	2.5
MS32/32	3P	400	24÷32	384	2.5



MSAE



MS/41

Item code	ACCESSORIES FOR MOTOR PROTECTORS
MSAE	emergency stop pushbutton
MS/41	IP41 wall mounting protection shield
MS/55	IP65 wall mounting protection shield
MS/BL	padlock block

FEATURES

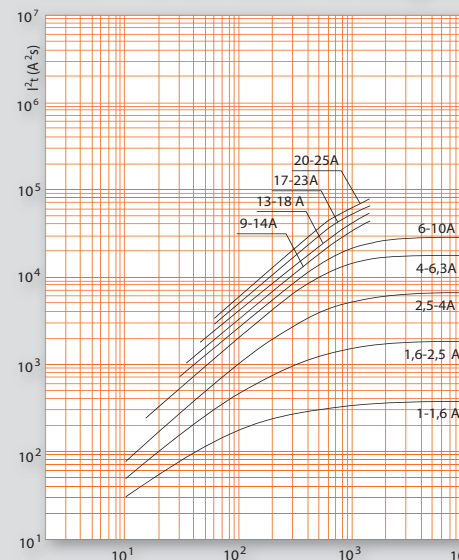
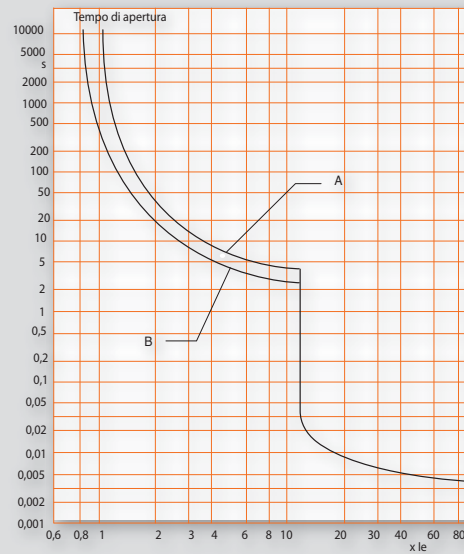
Standards	IEC EN 60947-2
Rated pulse withstand voltage (kV)	6
Rated insulating voltage Ui (Vac)	690
Rated frequency (Hz)	50÷60
Rated current (A)	32
Maximum utilization altitude (m)	3000
Tripping class	10A
Mechanical duration (cycles)	100000
Electrical duration 32A (AC3) (cycles)	100000
Utilization category	A
Protection index	IP40
Protection index with shield	IP41/65
Operating temperature	-20÷70
Max. section of conductors (mm ²)	6

BREAKING CAPACITY

Type	Short-circuit breaking capacity [kA]				Fuses gL or gG per I > Icu	
	230V		400V		230V	400V
	Icu	Ics	Icu	Ics	[A]	[A]
MS32/016÷2	100	100	100	100	•	•
MS32/6÷4	100	100	100	100	•	•
MS32/6	100	100	100	100	•	•
MS32/10	100	100	100	100	•	•
MS32/14	100	100	25	12.5	•	80
MS32/18÷32	100	100	25	12.5	•	100

The fuses should be placed only if the short-circuit current at the installation point exceed the capacity of the breaker itself

CURVE



ACCESSORIES FOR MOTOR PROTECTORS



MSC/...

Item code	AUXILIARY AND ALARM CONTACTS			
	Contact	Type	N° of modules	
MSC/11	1NO/NC	AUX	0.5	
MSC/20	2NO	AUX	0.5	
MSC/S11	1NO/NC	ALL	0.5	



MST/...

Item code	SHUNT TRIPS		
	Vn (Vac)	N° of modules	
MST/110	110	1	
MST/230	230	1	
MST/400	400	1	



MSV/...

Item code	UNDERVOLTAGE RELEASES		
	Vn (Vac)	N° of modules	
MSV/110	110	1	
MSV/230	230	1	
MSV/400	400	1	

FEATURES OF CONTACTS (ITEM MSC..)

Standards	IEC EN 60947-5-1	
Rated voltage Vn	24 ÷ 230 Vdc	
	230 ÷ 400 Vac	
Utilization category	AC15 - DC13	
Contact output (A)	6 (24 Vdc)	
	5 (48 Vdc) - 6 (48 Vac)	
	3 (60 Vdc)	
	1.3 (110 Vdc) - 4.5 (110 Vac)	
	0.5 (230 Vdc) - 3.3 (230 Vac)	
	2.2 (400 Vac)	
Max. section of conductors (mm ²)	2.5	

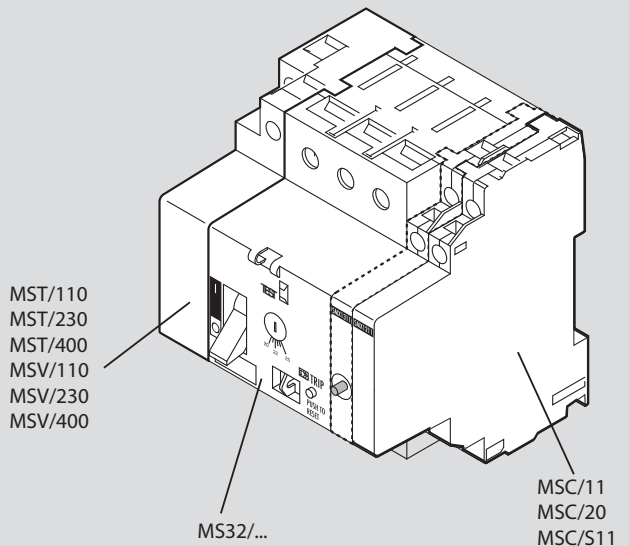
FEATURES OF SHUNT TRIPS (ITEM MST..)

Standards	CEI 23-105	
Rated voltage Vn	110-230-400 Vac	
Operating voltage (% Vn)	70 ÷ 110	
Max. absorbed power at activation (VA/W)	20	
Max. section of conductors (mm ²)	2.5	

FEATURES OF UNDERVOLTAGE RELEASES (ITEM MSV...)

Standards	CEI 23-105	
Rated voltage Vn:	110-230-400 Vac	
Release voltage (%Vn)	35 ÷ 70	
Reset voltage (%Vn)	85 ÷ 110	
Tripping time (ms)	10 ÷ 15	
Max. absorbed power at activation (W)	12/8	
	3.5/1.1 al mantenimento	
Max. section of conductors (mm ²)	2.5	

ACCESSORIABILITY



FUSE CARRIERS



F311



F312



F313

- Double insulation and system insulation ensured.
- In the open position, contact with the powered internal parts is physically prevented.
- Devices that can be accessorised with a fusion completed LED, confirming the activation of the fuses themselves.
- Coupling kit to make 2P-3P-4P versions.
- All fuse carriers can be locked in the open position with the padlockable block.

Item code		FUSE CARRIERS				
Type T 8.5x31.5mm	Type F 10x38mm	Poles	Vn (Vac)	In (A)	N° of modules	
F311		1P	400	20	1	
	F321		500	32		
F311N		1P+N	400	20	1	
	F321N		500	32		
F312		2P	400	20	2	
	F322		500	32		
F313		3P	400	20	3	
	F323		500	32		
F313N		3P+N	400	20	4	
	F323N		500	32		



F300NAC



F300P

Item code	DESCRIPTION	N° of modules
F300S	blown-fuse indicator	
F300L	padlock fuse carrier block in "open" position	
F300P	fuse boxes	1
F300NAC	1NO/NC auxiliary contact	0.5
F300/2P	coupling kit for 2 fuse carriers 1P	2
F300/3P	coupling kit for 3 fuse carriers 1P	3
F300/4P	coupling kit for 4 fuse carriers 1P	4

FEATURES

Standards	IEC EN 60947-3 - IEC269-3-1
Rated pulse withstand voltage (kV)	6 (4kV for items F311N and F321N)
Rated voltage Ue (Vac)	400 (Type T) - 500 (Type F)
Rated insulating voltage Ui (Vac)	500
Rated current In (A) a 30°C	20 (Type T) - 32 (Type F)
Rated frequency (Hz)	50/60
Rated closing and breaking capacity	AC21B
Conditioned short circuit current Icc (kA)	20 (Type T) - 100 (Type F)
Operating temperature (°C)	-10÷40
Maximum No. of mechanical operations	20000
Power consumption for pole (W)	4 (6W for items F311N and F321N)
Protection index (terminals/other zones)	IP20/IP40
Max. section of conductors (mm ²)	25/35 (10/16 for 1P+N)



FUSES - TYPE T

Glass body for domestic series devices					
	In (A)	Ø (mm)	Icu (kA)	Vn (Vac)	cosp
T0/2	2				
T0/4	4				
T0/6	6	6x28	1.5	230÷400	0.2
T0/10	10				
T0/16	16				



Ceramic body with fusion completed indicator					
	In (A)	Ø (mm)	Icu (kA)	Vn (Vac)	cosp
T/4	4				
T/6	6				
T/10	10	8.5x31.5	50	400÷500	0.2
T/16	16				
T/20	20				

	In (A)	Ø (mm)	Icu (kA)	Vn (Vac)	cosp
T1/4	4				
T1/6	6				
T1/10	10	9x36	50	400÷500	0.2
T1/16	16				
T1/20	20				
T1/25	25				



FUSES - TYPE F

Ceramic body with fusion completed indicator					
	In (A)	Ø (mm)	Icu (kA)	Vn (Vac)	cosp
F20	20	10x38	100	400÷500	
F25	25	10x38	100	400÷500	
F32	32	10x38	100	400÷500	

SURGE PROTECTIVE DEVICES Type T1 (class I)



F10MC4



F10T4

Protection against transient overvoltages for 230/400 V± power networks (50/60 Hz). SPDs compliant with EN/IEC 61643-11 standards. Recommended for main distribution boards Class I+II (T1+T2) : SPDs tested and specified according to both T1 and T2 test classes

SPDS FOR GENERAL PROTECTION OF MAIN DISTRIBUTION BOARD (T1+T2)

Item code

SPDs with plug-in modules and status indicators:
 - Green: SPD operational
 - Orange: plug-in modules to be replaced
 Earthing systems: TT, TNC, TNS
 T1+T2 - Iimp 12,5 kA/pole
 For general protection of big installations and protection of small installations with external lightning protection (LPS).
 Up: 1.5 kV - I_{max}: 60 kA/pole - U_c: 320 V±
 Recommended MCB: BTDIN 63 A - C curve

	N° of poles	I tot (10/350µs)	Signalization contact	N° of modules
F10MB1	1P	12.5 kA	-	1
F10MC2	1P+N	25 kA	yes	2
F10MB2	2P	25 kA	-	2
F10MC4	3P+N	50 kA	yes	4
F10MB4	4P	50 kA	-	4

SPDS FOR HIGH RISK LEVEL INSTALLATIONS (T1)

SPDs for big installations with external lightning protection (LPS) and for high risk level installations according to EN/IEC 62305 standards.
 T1 - Iimp 35 kA/pole - 440V± (IT)
 Up: 2.5 kV - U_c: 440 V±
 Earthing systems: TT, TNC, TNS, IT
 Recommended MCCB: MEGATIKER - 80 A

	N° of poles	I tot (10/350µs)	Signalization contact	N° of modules
F10VX1*	1P	35 kA	yes	2
F10T4	3P+N	100 kA	Si	8

REPLACEMENT PLUG-IN MODULES

F10M	for items F10MB... and F10MC...
F10TS	for item F10T4 and F10T1
F10TNS	Modulo N-PE for item F10T4
F10VXS*	For item F10VX1

SURGE PROTECTIVE DEVICES Type T2 (class II)



F10M



F10TS

Protection against transient overvoltages for 230/400 V± power networks (50/60 Hz). SPDs compliant with EN/IEC 61643-11 standards. Recommended for main distribution boards

SPDS FOR GENERAL PROTECTION OF MAIN DISTRIBUTION BOARD (T2)

Item code

SPDs with plug-in modules and status indicators:
 - Green: SPD operational
 - Red: plug-in modules to be replaced
T2 - I_{max} 60 kA/pole
 SPDs recommended for power installations and small installations without lightning protection system (LPS).
 Up: 1.7 kV - I_n: 20 kA/pole - U_c: 320 V±
 Earthing systems: TT - TNC - TNS
 Recommended MCB : BTDIN 40 A - Curve C

	N° of poles	I tot (10/350µs)	Signalization contact	N° of modules
F10LC2	1P+N	16 kA	yes	2
F10LB2	2P	16 kA	-	2
F10LC4	3P+N	25 kA	yes	4
F10LB4	4P	32 kA	-	4

REPLACEMENT PLUG-IN MODULES

F10L	for items F10LB... and F10LC...
------	---------------------------------

NOTE: 1P+N and 3P+N: L-N and N-PE protection modes (common and differential modes), the N pole being protected by encapsulated spark gaps. Also called sometimes 1+1 and 3+1

SURGE PROTECTIVE DEVICES

Type T2 (class II)



F10HXC4

F10HS4

F10H

Protection against transient overvoltages for 230/400 V± power networks (50/60 Hz). SPDs compliant with EN/IEC 61643-11 standards
Recommended for distribution boards

Item code	T2 ADD-ON SPDS		
	SPDs with plug-in modules and status indicators: - Green: SPD operational - Orange: plug-in modules to be replaced SPDs providing increased safety during their lifetime and maintenance cycles. Prewired MCB connexions for increased reliability and for quick and easy Installation. Earthing systems: TT, TNS T2 - I_{max} 40 kA/pole SPDs recommended for power installations Up: 1.7 kV - I _n : 20 kA/pole - U _c : 320 V± Recommended MCB: BT DIN 25 A - Curve C		
	N° of poles	Signalization contact	N° of modules
F10HXC2	1P+N	yes	4
F10HXC4	3P+N	yes	8
	T2 - I_{max} 20 kA/pole SPDs recommended for small installations Up: 1.2 kV - I _n : 5 kA/pole - U _c : 320 V± Recommended MCB: BT DIN 20 A - Curve C		
F10AXC2	1P+N	yes	4
F10AXC4	3P+N	yes	8

Item code	T2 SPDS		
	SPDs with plug-in modules and status indicators: - Green: SPD operational - Orange: plug-in modules to be replaced T2 - I_{max} 40 kA/pole SPDs recommended for power installations Up: 1.7 kV - I _n : 20 kA/pole - U _c : 320 V± Earthing systems : TT, TNC, TNS Recommended MCB: BT DIN 25 A - Curve C		
	N° of poles	Signalization contact	N° of modules
F10HB1	1P	-	1
F10HC2	1P+N	yes	2
F10HS2	1P+N	-	2
F10HB2	2P	-	2
F10HC4	3P+N	yes	4
F10HS4	3P+N	-	4
F10HB4	4P	-	4
	T2 - I_{max} 40 kA/pole - 440 V± (IT) SPDs recommended for big installations Up: 2.1 kV - I _n : 20 kA/pole - U _c : 440 V± Earthing systems : TT, TNC, TNS, IT Recommended MCB: BT DIN 25 A - Curve C		
F10X1	1P	-	1
	T2 - I_{max} 20 kA/pole SPDs recommended for small installations Up: 1.2 kV - I _n : 5 kA/pole - U _c : 320 V± Earthing systems : TT, TNC, TNS Recommended MCB: BT DIN 20 A - Curve C		
F10AB1	1P	-	1
F10AC2	1P+N	yes	2
F10AS2	1P+N	-	2
F10AB2	2P	-	2
F10AC4	3P+N	yes	4
F10AS4	3P+N	-	4
F10AB4	4P	-	4

REPLACEMENT PLUG-IN MODULES	
F10L	For items F10LB... and F10LC...
F10H	For items F10HB... - F10HC... - F10HS... - F10HX...
F10HN	Module N-PE for items F10HB... - F10HC... - F10HS...
F10XS	For items F10X1
F10A	For items F10AB... - F10AC... - F10AS... - F10AX...
F10AN	Module N-PE for items F10AB... - F10AC... - F10AS...

NOTE: 1P+N and 3P+N: L-N and N-PE protection modes (common and differential modes), the N pole being protected by encapsulated spark gaps. Also called sometimes 1+1 and 3+1

SURGE PROTECTIVE DEVICES

Type T2 (class II)



F10AP2



F10APS



F10A/S

SPDs with integrated protection against overload currents and short-circuit currents
 SPDs compliant with EN/IEC 61643-11 standards
 For 230/400 VA power networks (50/60 Hz)

Item code	PROTECTION FOR CONSUMER UNITS
	For residential and small commercial installations With plug-in modules and status indicators: - Green: SPD operational - Red: plug-in module need to be replaced Self-protected SPD T2 - I_{max} 12 kA/pole For installations with low risk level (in urban areas, underground power supplies, etc.) In: 10 kA/pole - U _c : 275 VA Earthing systems: TT, TNS SPDs with Y connection (both incoming and outgoing terminals at the top of the SPDs) providing better protection against overvoltages

	N° of poles	Signalization contact	N° of modules
F10AP2	1P+N	I _{cc} ≤ 6 kA	2

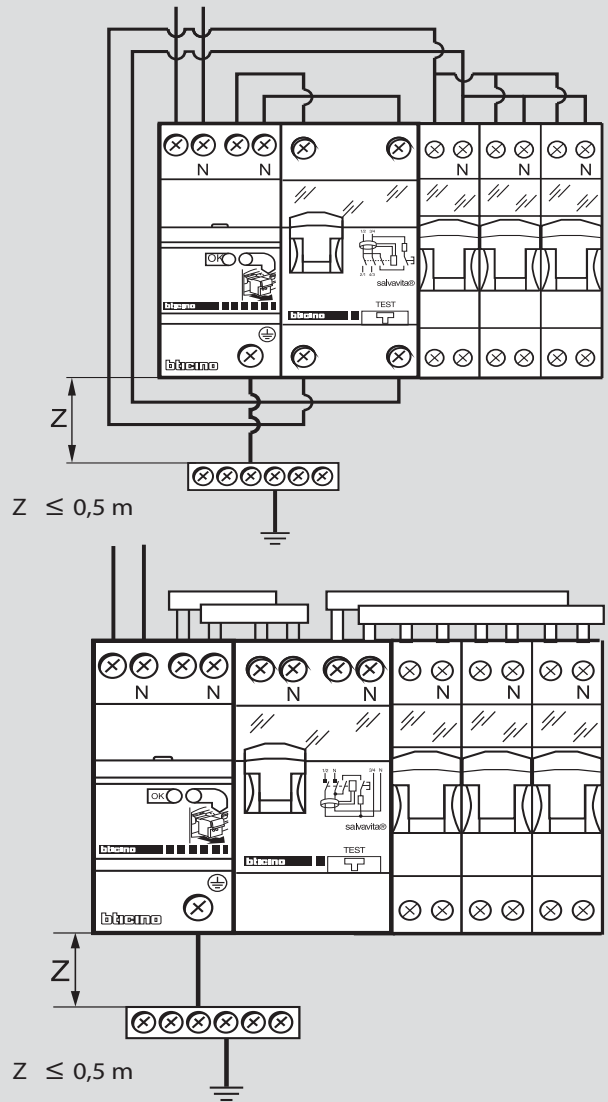
REPLACEMENT PLUG-IN MODULES	
F10APS	For item F10AP2 self-protected SPD

REPLACEMENT PLUG-IN MODULES FOR PREVIOUS RANGE	
F10NA/S	For item F10NA/2
F10A/S	For items F10A/1 - F10A/2 - F10A/4
F10H/S	For items F10H/1 - F10H/2 - F10H/4
F10L/S	For items F10L/1 - F10L/2 - F10L/4

FEATURES

Standards	EN 61643-11 - IEC 61643-1
Maximum voltage U _c (Vac)	275
Rated voltage U _o (Vac)	230
Protection level U _p (kV)	1 (at 5kA) - 1.2 (at 10kA)
Maximum discharge current I _{max} (kA) (8/20μs)	10
Rated discharge current I _n (kA) (8/20μs)	12
Maximum short-circuit current (kA)	6
Operating temperature (°C)	-10÷40
Protection index	IP20
Signalling	light
Tripping device	integrated
DIN modules	2
Max. section of conductors (mm ²)	4/6

WIRING DIAGRAMS



NOTE: 1P+N and 3P+N: L-N and N-PE protection modes (common and differential modes), the N pole being protected by encapsulated spark gaps. Also called sometimes 1+1 and 3+1

SURGE PROTECTIVE DEVICES

Protection against the transient overvoltage

SPD DEL QUADRO

230/400 V± power network (50/60 Hz) - Degree of protection IP 20

Operating temperature: from - 25 to + 70°C / Storage temperature: from - 40 to + 70°C

1P+N (3P+N) SPDs: L-N and N-PE protection, also called 1+1 (3+1 resp.) or CT2 type protection depending on installation standards.

Item code	Type	Poles	Earthing system	Max. voltage (Uc)	Protection mode	Rated current In/pole (8/20)	Max. discharge current			Protection level		Max. short-circuit current Isc (Iscrr)	Protective device to be used ¹	Signalling contact	
							I _{max} /pole (8/20μs)	I _{imp} /pole (10/350μs)	I total (10/350μs)	Up (L-N/L-PE/N-PE)	Up to 5 kA				
F10VX1	T1/35 kA	1P	TT, TNC, TNS, IT	440 V±	CT1	35 kA	35 kA	35 kA	35 kA	2.5 kV		50 kA	MEGATIKER M1 160 80 A	Yes	
F10T4	T1/25 kA	3P+N	TT, TNS	350 V±	CT2	25/100 kA	50 kA	25/100 kA	100 kA	1.5/2.5/1.5 kV				Yes	
F10MB1	T1+T2/12.5 kA	1P	TT, TNC, TNS	320 V±	CT1	25 kA	60 kA	12.5 kA	12.5 kA	from 1.5 kV a 12.5 kA from 1.9 kV at 25 kA	1 kV	50 kA	BTDIN 63 A Curve C	No	
F10MB2	T1+T2/12.5 kA	2P	TT, TNS	320 V±	CT1	25 kA	60 kA	12.5 kA	25 kA					No	
F10MB4	T1+T2/12.5 kA	4P	TT, TNS	320 V±	CT1	25 kA	60 kA	12.5 kA	50 kA					No	
F10MC2	T1+T2/12.5 kA	1P+N	TT, TNS	320 V±	CT2	25/25 kA	60 kA	12.5/25 kA	25 kA	from 1.5/1.6/1.5 kV a 12.5 kA from 1.9/2.1/1.5 kV at 25 kA	1 kV	50 kA	BTDIN 63 A Curve C	Yes	
F10MC4	T1+T2/12.5 kA	3P+N	TT, TNS	320 V±	CT2	25/50 kA	60 kA	12.5/50 kA	50 kA					Yes	
F10LB2	T2/60kA	2P	TT, TNS	320 V±	CT1	20 kA	60 kA	8 kA ⁽²⁾	16 kA	from 1.2 kV at 8 kA from 1.7 kV at 20 kA	1 kV	50 kA	BTDIN 40 A Curve C	No	
F10LB4	T2/60kA	4P	TT, TNS	320 V±	CT1	20 kA	60 kA	8 kA ⁽²⁾	32 kA					No	
F10LC2	T2/60kA	1P+N	TT, TNS	320 V±	CT2	20 kA	60 kA	8 kA ⁽²⁾	16 kA	from 1.2/1.5/1.5 kV at 8 kA from 1.7/2/1.5 kV at 20 kA	1 kV	50 kA	BTDIN 40 A Curve C	Yes	
F10LC4	T2/60kA	3P+N	TT, TNS	320 V±	CT2	20 kA	60 kA	8 kA ⁽²⁾	25 kA					Yes	
F10HB1	T2/40 kA	1P	TT, TNS	320 V±	CT1	20 kA	40 kA			from 1.5 kV at 15 kA from 1.7 kV at 20 kA	1 kV	50 kA	BTDIN 25 A Curve C	No	
F10HB2	T2/40 kA	2P	TT, TNS	320 V±	CT1	20 kA	40 kA							50 kA	No
F10HB4	T2/40 kA	4P	TT, TNS	320 V±	CT1	20 kA	40 kA							50 kA	No
F10HS2										from 1.5/1.6/1.4 kV at 15 kA from 1.7/2/1.4 kV at 20 kA	1 kV	50 kA	BTDIN 25 A Curve C	No	
F10HC2	T2/40 kA	1P+N	TT, TNS	320 V±	CT2	20 kA	40 kA							50 kA	Yes
F10HXC2														25 kA	Yes
F10HS4										from 1.5/1.6/1.4 kV at 15 kA from 1.7/2/1.4 kV at 20 kA	1 kV	50 kA	BTDIN 25 A Curve C	No	
F10HC4	T2/40 kA	3P+N	TT, TNS	320 V±	CT2	20 kA	40 kA							50 kA	Yes
F10HXC4														25 kA	Yes
F10X1	T2/40 kA	1P	TT, TNC, TNS, IT	440 V±	CT1	20 kA	40 kA			from 1.8 kV at 15 kA from 2.1 kV at 20 kA	1.3 kV	50 kA	BTDIN 25 A Curve C	No	
F10AB1	T2/20 kA	1P	TT, TNS	320 V±	CT1	10 kA	20 kA			from 1.2 kV at 5 kA from 1.4 kV at 10 kA	1.2 kV	25 kA	BTDIN 20 A Curve C	No	
F10AB2	T2/20 kA	2P	TT, TNS	320 V±	CT1	10 kA	20 kA							No	
F10AB4	T2/20 kA	4P	TT, TNS	320 V±	CT1	10 kA	20 kA							No	
F10AS2										from 1.2/1.4/1.4 kV at 5 kA from 1.4/1.4/1.4 kV at 10 kA	1.2 kV	25 kA	BTDIN 20 A Curve C	No	
F10AC2	T2/20 kA	1P+N	TT, TNS	320 V±	CT2	10/20 kA	20 kA							Yes	
F10AXC2														Yes	
F10AS4										from 1.2/1.4/1.4 kV at 5 kA from 1.4/1.4/1.4 kV at 10 kA	1.2 kV	25 kA	BTDIN 20 A Curve C	No	
F10AC4	T2/20 kA	3P+N	TT, TNS	320 V±	CT2	10/20 kA	20 kA							Yes	
F10AXC4														Yes	
F10AP2	T2+T3/12 kA	1P+N	TT, TNS	275 V±	CT2	10/10 kA	12 kA			from 1.1/1.2/1.2 kV at 10 kA	1 kV	6 kA	integrated	No	

CT1: L(N)-PE protection modes.

CT2: L-N and N-PE protection modes.

1: MEGATIKER (with T1 SPDs), BTDIN or similar type circuit breakers (with T2 and T1+T2 SPDs). For fuse protection or values other than those indicated in the table: please consult BTICINO

2: SPD T2 with I_{max} 60kA classified also SPD T1+T2 with I_{imp} 8kA

LOAD MANAGEMENT MODULE



F80GC

FEATURES

Rated voltage (Vac)	195÷264
Rated current (A)	25 A
Relay contact output	250Vac / 16 A
Maximum power (kW)	6
Operating temperature	-10÷55°C

PROGRAMMABLE VALUES

Operating mode	Mod	F1 or F2
Tripping threshold	Set	0...6.50 kW with resolution 0.01kW
Activation time	t.on	0...999 sec.
Inhibition time	t.of	0...999 sec.
Buzzer signalling time	t.be	0...(t.on + t.of) sec. (0=signal inhibition, max. value: 999 sec)
Tripping delay time	del	0...999 sec.

DISPLAY

Active power (kW) - Voltage (V) - Current (A)

Item code	LOAD MANAGEMENT MODULE
	Device for the management of electric loads that gives the possibility of controlling the power engaged, activating, in case of overload, an internal acoustic signal (buzzer) and, if set accordingly, automatic disconnection of non priority loads.
	Vn (V) N° of modules
F80GC	195÷264 Vac 2

CHANGEOVER SWITCHES AND TWO-WAY SWITCHES



F61N32D

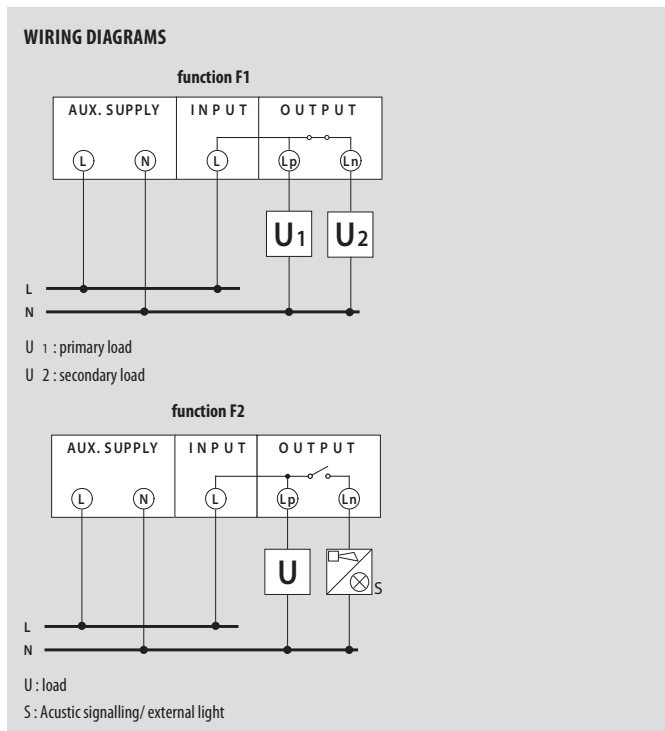


F62N32D

FEATURES

Standards: IEC EN 60947-3 - IEC EN 60669-1
Rated pulse withstand voltage (kV): 4
Rated voltage Ue (Vac): 230/400
Rated insulating voltage Ui (Vac): 250/400
Rated current In (A) a 30°C: 32
Rated frequency (Hz): 50/60
Rated closing and breaking capacity: AC22
Operating temperature (°C): -10÷40
Maximum No. of mechanical operations: 30000
Power consumption for pole (W): 1.5
Protection index (terminals/other zones): IP20/IP40
Maximum section of flexible/rigid cable (mm²): 10/16

Item code	TWO-WAYS SWITCHES			
	In (A)	Vn (Vac)	Contact	N° of modules
F61N32D	32	230/400	1NO/NC	1
F62N32D	32	230/400	1NO/NC	2



F61N32C



F62N32NAC

CHANGEOVER SWITCHES				
	In (A)	Vn (Vac)	Contact	N° of modules
F61N32C	32	230/400	1NO	1
F62N32C	32	230/400	2NO with central zero	2
F62N32NAC	32	230/400	1NO+1NC with central zero	1

DISCONNECTORS (ACCESSORIABLES)



F72A...

- AC22 and AC23 utilization category
- Integrated name plate holder
- Contemporary opening and closing on all poles
- Upper/lower power supply
- Suitability for insulation
- Accessoryability with contacts and releases (max 3)

Item code	DISCONNECTORS		
	In (A)	Vn (Vac)	N° of modules
2P			
F72A16	16		
F72A32	32	400	2
F72A63	63		



F73A...

3P	In (A)	Vn (Vac)	N° of modules
F73A100	100	400	4.5
F73A125	125		4.5



F74A...

4P	In (A)	Vn (Vac)	N° of modules
F74A32	32		4
F74A63	63	400	4
F74A100	100		6
F74A125	125		6

FEATURES			
Reference standards	IEC EN 60947-3 - IEC EN 60669-1		
N° of poles	2P	3P	4P
Rated current In (A) a 30°C	16-32-63	63-100-125	16-32-63-100-125
Short-time withstand current Icw (kA) per 1s	20 In		
Rated voltage Ue (Vac)	400		
Rated insulating voltage Ui (Vac)	500		
Rated pulse withstand voltage Uimp (Vac)	6		
Rated frequency (Hz)	50÷60		
Operating temperature (°C)	-25÷60		
Utilization category	AC23 (In≤100 A) - AC22 (In=125 A)		
Max No. of mechanical operations	30000		
IP index (terminals/other zones)	IP20/IP40		
Maximum section of flexible/rigid cable(mm²)	50/70		
Resistance to vibrations	IEC 60068-2-35		
Tropical influence	IEC60068-2-11 - IEC60068-2-30		
Resistance to abnormal heat and to fire (°C)	650 - 960		

CONDITIONED SHORT CIRCUIT CURRENT ICC (A)

Thermal magnetic MCB	Disconnectors		
	serie F72A÷F74A...		
In (A)	16	32	63
BTDIN45	4500	4500	4500
BTDIN60	6000	4500	4500
BTDIN100	6000	4500	4500
BTDIN250	6000	4500	4500

POWER CONSUMPTION FOR EACH POLE (W)

In (A)	F72A÷F74A
16	0.38
32	1.2
63	4
100	8
125	12

DISCONNECTORS STANDARD



F71NL...



F72N...

Reference standards IEC EN 60669-1

AC22 utilization categories

L version with 230 Vac wired non replaceable lamp for luminous signalling.

Item code DISCONNECTORS

1P	In (A)	Vn (Vac)	N° of modules	
F71N16	16	230/400	1	with signalization light integrated
F71N32	32			
F71N63	63			
F71NL16	16			
F71NL32	32			

2P	In (A)	Vn (Vac)	N° of modules	
F72N16	16	400	1	with signalization light integrated
F72N32	32		2	
F72N63	63		2	
F72NL16	16		1	
F72NL32	32		1	



F73N...



F74N...

3P	In (A)	Vn (Vac)	N° of modules
F73N16	16	400	2
F73N32	32		3
F73N63	63		3

4P	In (A)	Vn (Vac)	N° of modules
F74N16	16	400	2
F74N32	32		2
F74N63	63		4
F74N100	100		4

FEATURES

Reference standards	IEC EN 60947-3 - IEC EN 60669-1							
	1P	2P		3P		4P		
N° of poles	1P	2P	3P	4P	1P	2P	3P	4P
N° of modules	1	1	2	2	3	2	2	4
Rated current In (A) a 30°C	16	16	63	16	63	16	63	63
	32	32	-	32	-	32	100	100
	63	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Short-time withstand current Icw (kA) per 1s	500 ⁽¹⁾	500	750 ⁽²⁾	500	750 ⁽²⁾	500	750 ⁽²⁾	750 ⁽²⁾
	750 ⁽²⁾	-	1200 ⁽³⁾	-	1200 ⁽³⁾	-	1200 ⁽³⁾	1200 ⁽³⁾
	1200 ⁽³⁾	-	-	-	-	-	-	-
Rated voltage Ue (Vac)	230	400	400	400	400	400	400	400
Rated insulating voltage Ui (Vac)	400	400	500	400	500	400	500	500
Rated pulse withstand voltage Uimp (Vac)	4							
Rated frequency (Hz)	50÷60							
Operating temperature (°C)	-10÷40							
Utilization category	AC22							
Max No. of mechanical operations	30000 (In≤32A) - 5000 (In>63A)							
IP index (terminals/other zones)	IP20/IP40							
Maximum section of flexible/rigid cable(mm²)	10/16 (In≤32A) - 25/35 (In=63A) - 50/70 (In>100A)							
Mechanical features								
Resistance to vibrations	IEC 60068-2-35							
Tropical influence	IEC60068-2-11 - IEC60068-2-30							
Resistenza al calhours anormale ed al fuoco (°C)	650 - 960							
General features								
Integrated name plate holder	yes							
Contemporary opening and closing on all poles	yes							
Upper/lower power supply	yes							
Suitability for insulation	yes							

(1) In<32A

(2) In=63A

(3) In<100A

CONDITIONED SHORT CIRCUIT CURRENT ICC (A)

Thermal magnetic MCB	Disconnectors series F71N÷ F74N...				
	16	32	63	100	125
In (A)	16	32	63	100	125
BTDIN45	4500	4500	3000	3000	3000
BTDIN60	6000	4500	3000	3000	3000
BTDIN100	6000	4500	3000	3000	3000
BTDIN250	6000	4500	3000	3000	3000

POWER CONSUMPTION FOR EACH POLE (W)

In (A)	F71N÷F74N
16	1.5
32	2.5
63	3.2
100	7
125	10

PULSE OPERATED LATCHING RELAY



FP1A...



FP2A...

Item code	PULSE OPERATED LATCHING RELAY			
	Vn (Vac)	In (A)	Contact	N° of modules
FP1A1N24	24	16	1NO	1
FP1A2N24			2NO	1
FP2A4N24			4NO	2
FP1A1N230	230	16	1NO	1
FP1A2N230			2NO	1
FP2A4N230			4NO	2



FM1ACH



FM2CN230



FM3CP

Item code	ACCESSORIES	
		N° of modules
FM1AC	Contact 1NO+1NC for relay in 1 module	0.5
FM1ACH	Contact 1NO+1NC for relay in 2 modules	0.5
FM2CN24	24Vac held control	0.5
FM2CN230	230Vac held control	0.5
FM3CP	Impedance compensator	1

FEATURES

Standards	IEC EN 60669-2-2
Rated pulse withstand voltage (kV)	4
Rated voltage Vn (Vac) (coil)	24 or 230
Rated insulating voltage Ui (Vac)	250
Rated current In (A) a 30°C	16
Conditioned short circuit current (kA)	3
Rated frequency (Hz)	50/60
Operating temperature (°C)	-25 ÷ 40
Maximum No. of mechanical operations	1000000
Power consumption for pole (W)	3.2
Protection index (terminals/other zones)	IP20/IP40
Maximum section of flexible/rigid cable (mm ²)	6 or 2x2.5
Front manual control	yes

CONSUMPTION OF THE COIL

Coil rated voltage (Vac)	230	
Current (A)	16	
Type of contact	1NO+1NC 2NO	3NO
Holding current (mA)	6	15
Pulse current (mA)	55	150

DOWNGRADING OF THE RATED CURRENT BASED ON THE TEMPERATURE

Rated current Ie = 16 A	40 °C	50 °C	60 °C
	16 A	14 A	12 A

Filament lamps

Unit power	Tungsten filament and halogen 230 VA							
	40W	60W	75W	100W	150W	200W	500W	1000W
16 A	45	30	24	19	13	10	4	2

TBT halogen lamps

Unit power	With ferromagnetic ballast						With electronic ballast					
	20W	35W	50W	75W	100W	150W	20W	35W	50W	75W	100W	150W
16 A	32	20	15	12	9	6	60	40	28	18	14	9

Fluorourescent tubes with ferromagnetic ballast

Unit power	Simple compensated in parallel					Double compensated in series				
	18W	20W	36W	58W	115W	2x20W	2x36W	2x40W	2x58W	2x140W
16 A	24	24	16	11	5	30	24	22	15	6
	Quadruple compensated in series					Compact with integrated starter				
	4 x 18W					7W 10W 18W 26W				
	16					50 40 28 19				

Fluorourescent tubes with electronic ballast

Unit power	Simple				Double			Triple compensate in series		Quadruple compensate in series	
	18W	30W	36W	58W	2x18W	2x36W	2x58W	3x14W	3x18W	4x14W	4x18W
16 A	72	42	36	22	36	20	12	34	26	26	20

Fluorourescent compact with integrated electronic power supply

Unit power	7W	11W	15W	20W	23W
16 A	120	80	64	50	43

Discharge lamps with compensation

Unit power	Metal halide						Sodium vapor at low pressure					
	35W	70W	100W	150W	250W	400W	18W	35W	55W	90W	135W	180W
16 A	10	6	5	3	2	1	12	6	5	3	2	2

Unit power	Sodium vapor at high pressure					Mercury vapor at high pressure				
	70W	150W	250W	400W	1000W	50W	80W	125W	250W	400W
16 A	8	7	5	3	1	11	8	6	3	2

Unit power	Mixed at high pressure			
	100W	160W	250W	400W
16 A	9	6	4	2

MONOSTABLE RELAYS



FM1A...



FM2A...

Item code	MONOSTABLE RELAYS			
	Vn (Vac)	In (A)	Contact	N° of modules
FM1AC1N24M	24	16	1NO+1NC	1
FM2AC2N24M			2NO+2NC	2
FM2A4N24M			4 NO	2
FM1AC1N230M	230	16	1NO+1NC	1
FM2AC2N230M			2NO+2NC	2
FM2A4N230M			4 NO	2



F80/05D



FM1ACH



FM3CP

Item code	ACCESSORIES	
		N° of modules
FM1AC	Contact 1NO+1NC for relay in 1 module	0.5
FM1ACH	Contact 1NO+1NC for relay in 2 modules	0.5
F80/05D	Distancing module	0.5
F1AC	Contact 1NO+1NC in 1/2 modules for contactors from 40 and 63 A	0.5

FEATURES

Standards	IEC EN 61095
Rated pulse withstand voltage (kV)	4
Rated voltage Vn (Vac) (coil)	24 or 230
Rated insulating voltage Ui (Vac)	500
Rated current In (A) a 30°C	16
Conditioned short circuit current (kA)	3
Rated frequency (Hz)	50/60
Operating temperature (°C)	-5÷40
Maximum No. of mechanical operations	1000000
Power consumption for pole (W)	0.8
Protection index (terminals/other zones)	IP20/IP40
Maximum section of flexible/rigid cable (mm²)	6 or 2x2.5
Front manual control	yes

CONSUMPTION OF THE COIL

Coil rated voltage(Vac)	24	230	
Current (A)		16	
Type of contact	1NO+1NC 2NO	1NO+1NC 2 NO - 2 NC	2NO+2NC 4 NO - 4 NC
Holding current (mA)	200	20	20
Pulse current (mA)	970	90	200

DOWNGRADING OF THE RATED CURRENT BASED ON THE TEMPERATURE

Rated current Ie = 16 A	40 °C	50 °C	60 °C
	16 A	14 A	12 A

• Filament lamps

Unit power	Tungsten filament and halogen 230 VA							
	40W	60W	75W	100W	150W	200W	500W	1000W
16 A	45	30	24	19	13	10	4	2

• TBT halogen lamps

Unit power	With ferromagnetic ballast						With electronic ballast					
	20W	35W	50W	75W	100W	150W	20W	35W	50W	75W	100W	150W
16 A	32	20	15	12	9	6	60	40	28	18	14	9

• Fluoroursscent tubes with ferromagnetic ballast

Unit power	Simple compensated in parallel					Double compensated in series				
	18W	20W	36W	58W	115W	2x20W	2x36W	2x40W	2x58W	2x140W
16 A	24	24	16	11	5	30	24	22	15	6
	Quadruple compensated in series					Compact with integrated starter				
	4 x 18W 16					7W	10W	18W	26W	
						50	40	28	19	

• Fluoroursscent tubes with electronic ballast

Unit power	Simple		Double		Triple compensate in series		Quadruple compensated in series				
	18W	30W	36W	58W	2x18W	2x36W	2x58W	3x14W	3x18W	4x14W	4x18W
16 A	72	42	36	22	36	20	12	34	26	26	20

Fluoroursscent compact with integrated electronic power supply

Unit power	7W	11W	15W	20W	23W
16 A	120	80	64	50	43

• Discharge lamps with compensation

Unit power	Metal halide						Sodium vapor at low pressure					
	35W	70W	100W	150W	250W	400W	18W	35W	55W	90W	135W	180W
16 A	10	6	5	3	2	1	12	6	5	3	2	2

Unit power	Sodium vapor at high pressure					Mercury vapor at high pressure				
	70W	150W	250W	400W	1000W	50W	80W	125W	250W	400W
16 A	8	7	5	3	1	11	8	6	3	2

Unit power	Mixed at high pressure			
	100W	160W	250W	400W
16 A	9	6	4	2

CONTACTORS



FT1A2N24



FT2A3N230



FT1A2N24S

FEATURES

Standards: IEC EN 61095

Rated pulse withstand voltage (kV): 4

Rated voltage V_n (Vac) (coil): 24 or 230

Rated insulating voltage U_i (Vac): 500

Rated current I_n (A) at 30°C: 25-40-63 (for contactors 25 A the rated current

in AC7b and AC3 is 10 A - 2.2 kW for 2 contacts and 10 A - 4 kW for 4 contacts)

Conditioned short circuit current (kA): 3

Rated frequency (Hz): 50/60

Operating temperature (°C): -25 ÷ 40

Maximum No. of mechanical operations: 1000000

Power consumption for pole (W): 1.5

Protection index (terminals/other zones): IP20/IP40

Item code

CONTACTORS

$I_n = 25A$ (in AC1 and AC7A)

	V_n (Vac)	I_n (A)	Contact	N° of modules
FT1AC1N24	24		1NO+1NC	1
FT1A2N24			2 NO	1
FT2A4N24			4 NO	2
FT1AC1N230			1NO+1NC	1
FT1A2N230	230	25	2 NO	1
FT2A3N230			3 NO	2
FT2A4N230			4 NO	2
FT2AC2N230			2NO+2NC	2
FT1C2N230			2NC	1
FT2C4N230			4 NC	2

CONTACTORS WITH PUSHBUTTON

	V_n (Vac)	I_n (A)	Contact	N° of modules
FT1A2N24M	24		2 NO	1
FT1A1N230M			1NO	1
FT1A2N230M	230	25	2 NO	1
FT2A4N230M			4 NO	2
$I_n = 40-63A$				
FC2A4/24N	24	40	2 NO	2
FC4A4/24N			4 NO	3
FC4A6/24N			4 NO	3
FC2A4/230N	230	40	2 NO	2
FC3A4/230N			3 NO	3
FC4A4/230N			4 NO	3
FC4A6/230N			4 NO	3

SILENT CONTACTORS

	V_n (Vac)	I_n (A)	Contact	N° of modules
FT1A1N24S	24		1NO	1
FT1A2N24S			2 NO	1
FT1A1N230S			1NO	1
FT1A2N230S			2 NO	2

Warning

When several battery contactors are positioned side by side, it is recommended that distancing modules item F80/05D every 2 contactors are also installed.

CONSUMPTION OF THE COIL

Coil rated voltage (Vac)	24				230			
Current (A)	25		40-63		25 (*)		40-63	
Type of contact	1NO+1NC 2NO	4NO	2NO	4NO	1NO+1NC 2NO 2NC	2NO+2NC 4NO 4NC	2NO 2NC	3NO 4NO 4NC
Holding current (mA)	200	300	250	270	6	20	20	15 30
Pulse current (mA)	970	3000	1750	1500	55	90	200	150 200

(*) silent contacts

DOWNGRADING OF THE RATED CURRENT BASED ON THE TEMPERATURE

Rated current	40 °C	50 °C	60 °C
$I_e = 25 A$	25 A	22 A	20 A
$I_e = 40 A$	40 A	36 A	32 A
$I_e = 63 A$	63 A	57 A	50 A

MAX. CONNECTION SECTIONS IN mm²

Type of cable	$I_e \leq 25 A$	$I_e = 40 e 63 A$
Rigid/ Flexible	6 or 2 x 2.5	25 or 2 x 10
Flexible with simple tip	6	16
Flexible with double tip	2 x 4	2 x 16

Filament lamps

Unit power	Tungsten filament and halogen 230 VA							
	40W	60W	75W	100W	150W	200W	500W	1000W
25 A	60	48	38	30	20	15	6	3
40 A	96	77	61	48	32	24	10	5
63 A	154	123	97	77	51	38	15	8

TBT halogen lamps

Unit power	With ferromagnetic ballast						With electronic ballast					
	20W	35W	50W	75W	100W	150W	20W	35W	50W	75W	100W	150W
25 A	52	30	24	16	12	8	80	50	40	26	20	13
40 A	68	39	31	21	16	10	112	70	56	36	28	18
63 A	88	51	41	27	20	14	157	98	78	51	39	25

Fluorourescent tubes with ferromagnetic ballast

Unit power	Simple compensated in parallel						Double compensated in series			
	18W	20W	36W	58W	115W	2x20W	2x36W	2x40W	2x58W	2x140W
25 A	33	30	25	17	9	45	38	35	24	10
40 A	43	39	33	22	12	68	57	53	36	15
63 A	56	51	42	29	15	101	86	79	54	23

Unit power	Quadruple compensated in series		Compact with integrated starter			
	4 x 18W		7W	10W	18W	26W
25 A	24		60	50	42	28
40 A	36		78	65	55	36
63 A	54		101	85	71	47

Fluorourescent tubes with electronic ballast

Unit power	Simple				Double			Triple compensate in series	Quadruple compensated in series		
	18W	30W	36W	58W	2x18W	2x36W	2x58W	3x14W	3x18W	4x14W	4x18W
25 A	110	68	58	36	56	30	19	46	38	37	28
40 A	165	102	87	54	84	45	29	62	51	52	39
63 A	248	153	131	81	126	68	43	84	69	73	55

Unit power	Fluorourescent compact with integrated electronic power supply				
	7W	11W	15W	20W	23W
25 A	200	125	90	70	60
40 A	280	175	126	98	84
63 A	392	245	176	137	118

Discharge lamps with compensation

Potenza lampada	Metal halide						Sodium vapor at low pressure					
	35W	70W	100W	150W	250W	400W	18W	35W	55W	90W	135W	180W
25 A	15	9	7	5	3	2	20	10	7	5	3	3
40 A	23	14	11	8	5	3	30	15	11	8	5	5
63 A	34	20	16	11	7	5	45	23	16	11	7	7

Potenza lampada	Sodium vapor at high pressure					Mercury vapor at high pressure				
	70W	150W	250W	400W	1000W	50W	80W	125W	250W	400W
25 A	10	9	6	4	2	15	10	8	4	3
40 A	15	14	9	6	3	21	14	11	6	4
63 A	23	20	14	9	5	29	20	16	8	6

Potenza lampada	Mixed at high pressure			
	100W	160W	250W	400W
25 A	11	7	5	3
40 A	14	9	7	4
63 A	19	12	8	5

PUSBUTTONS AND SWITCHES



LED LIGHT



FEATURES PUSHBUTTONS AND SWITCHES

Standards: IEC EN 60947-5-1 - IEC EN 60669-1
 Rated pulse withstand voltage (kV): 4
 Rated voltage U_e (Vac): 230
 Rated insulating voltage U_i (Vac): 250
 Rated current I_n (A) a 30°C: 20
 Rated frequency (Hz): 50/60
 Rated closing and breaking capacity: AC12
 Operating temperature (°C): -10÷40
 Maximum No. of mechanical operations: 30000
 Power consumption for pole (W): 2
 Protection index (terminals/other zones): IP20/IP40
 Maximum section of flexible/rigid cable (mm²): 6

FEATURES LED LIGHT

Rated frequency (Hz): 50÷60
 Rated pulse withstand voltage (kV): 4
 Operating temperature (°C): -10÷40
 Protection index (terminals/other zones): IP20
 Maximum section of flexible/rigid cable (mm²): 6

Item code	PUSHBUTTONS			
	Contact	Type	N° of modules	
FN51NCP	1NC	Pushbutton	1	
FN51NAP	1NO	Pushbutton	1	
FN51NAPV12	1NO	Pushbutton + green LED 12/48 Vac	1	
FN51NCPV12	1NC	Pushbutton + red LED 12/48 Vac	1	
FN51NAPV110	1NO	Pushbutton + green LED 110 Vac	1	
FN51NCPV110	1NC	pulsante + red LED 110 Vac	1	
FN51NAAP	1NO+1NO	Double pushbutton	1	
FN51NACP	1NO+1NC	Double pushbutton	1	

Item code	SWITCHES			
	Contact	Type	N° of modules	
FN51NACI	1NO+1NC	Switch	1	
FN52NAI	2NO	Switch	1	
FN51NAV12	1NO	Switch + green LED 12/48 Vac	1	
FN51NCR12	1NC	Switch + red LED 12/48 Vac	1	
FN51NAV110	1NO	Switch + green LED 110 Vac	1	
FN51NCR110	1NC	Switch + red LED 110 Vac	1	

Item code	LED LIGHT				
	12/48Vac	110/400Vac	Colour	Type	
FN40V12	FN40V110	green	single	1	
FN40R12	FN40R110	red	single	1	
FN40G12	FN40G110	yellow	single	1	
FN40B12	FN40B110	blue	single	1	
FN40T12	FN40T110	white	single	1	
FN40RV12	FN40RV110	red+ green double	double	1	

TRIPLE LED LIGHT			
	Vn (Vac)	Type	N° of modules
FN43R230	230/400	Triple LED light red	1
FN43M230	230/400	Triple LED light multicolour	1
FN43T230	230/400	Triple LED light white	1

BELLS, BUZZERS AND TRANSFORMERS



F36/...



F35/...



F90/12/24



F94/12/24

FEATURES OF BELL AND BUZZERS

Standards: CEI 14-6

Rated voltage Vn (Vac): 12-24-230

Primary voltage Vn (Vac) (transformer SELV): 230

Secondary voltage Vn (Vac) (transformer SELV): 12

Rated power (VA) (Bells and Buzzers only): 5 (6 per F3.../230)

Rated frequency (Hz): 50÷60

Protection index (terminals/other zones): IP30

Maximum section of flexible/rigid cable (mm²): 6 (4 for devices with transformer)

FEATURES OF TRANSFORMERS

Standards: IEC EN 61558-2-6 - CEI 96-7

Primary voltage Vn (Vac): 230

Secondary voltage Vn (Vac): 12/24

Rated frequency (Hz): 50

Protection index (terminals/other zones): IP20

Maximum section of flexible/rigid cable (mm²): 6

Item code	BELLS	
	For applications like bell warning units	
	Vn (Vac)	N° of modules
F36/12	8÷12	1
F36/230	230	1

Item code	BUZZERS	
	Vn (Vac)	N° of modules
F35/12	8÷12	1
F35/24	24	1
F35/230	230	1

BELLS AND BUZZERS WITH TRANSFORMER			
Bells and buzzers with incorporated SELV transformer for bells			
Item code	Vn (Vac)	Type	N° of modules
E86	230/12	Bell + transformer SELV	2
E87	230/12	Buzzer + transformer SELV	2
E88	230/12	Buzzer + bell + transformer SELV	3

SOUND LEVELS AND CONSUMED CURRENTS			
Item code	Sound level at 1 m	Sound level at 3 m	Current consumed (mA)
F36/12	82	-	420
F36/230	79	-	27
F35/12	75	-	420
F35/24	75	-	215
F35/230	75	-	27
E86	76	68	-
E87	77	69	-
E88	79 (bell) 73 (buzzer)	72 (bell) 64 (buzzer)	-

Item code	SAFETY TRANSFORMERS				
	Vn (Vac)	Pn (VA)	Pd (W) no-load	Pd (W) in loaded conditions	N° of modules
F90/12/24	12/24	4	0.9	2	2
F91/12/24	12/24	8	1	3.5	3
F92/12/24	12/24	16	2.1	4.3	4
F93/12/24	12/24	25	2.2	6.4	4
F94/12/24	12/24	40	2.6	7.2	5
F95/12/24	12/24	63	2.1	9.4	5



F90S8

BELL TRANSFORMER			
Item code	Vn (Vac)	Pn (VA)	N° of modules
F90S8	230/12	8	2

STAIRCASE LIGHT TIMERS



F25/230

Item code

STAIRCASE LIGHT TIMERS

- Time control programming from 0.5s to 12 minutes, depending on the version.
- Automatic and manual operation using the front AUTO-MAN selector. (auto= time control active ; man= time control disabled, with the lamps constantly on for an unlimited period).
- 7 settable operating modes for item F25/230S.
- The switching off warning causes two quick light interruption (0.3s) during the last 25s of the period set for the lights to stay on.
- Automatic detection of 3 or 4 wire connection (F25/230 and F25/230S).

		N° of modules
F25/230	electronic and resettable with time adjustment from 30s to 10 minutes	1
F25/230S	electronic and resettable with time adjustment from 30s to 12 minutes and the possibility of keeping the light on for up to 1 hour irrespective of the time controls set.	1



F25P

SWITCH OFF SIGNALLING

		N° of modules
F25P	expected duration 40 seconds, to be used in combination with the F25/230 staircase light time control device	2

F25/230S	2000W	1000VA (1)	2000W	100W	500W	2000W
F25/230	2000W	1000VA (2)	2000W	100W	500W	2000W
F25/230P	2000W		2000W			

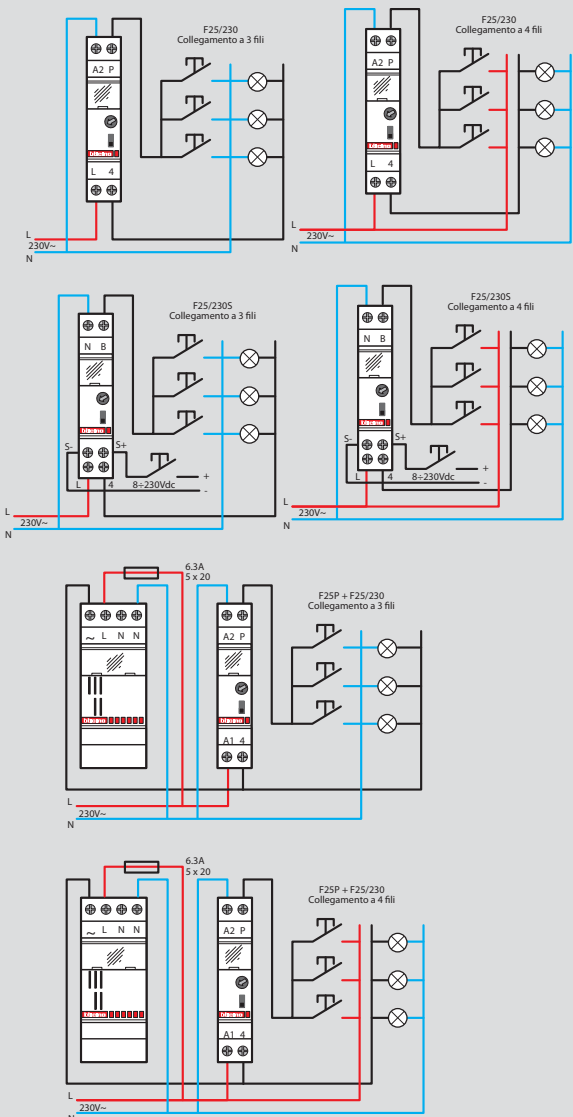
(1) Fluorousscent offset in parallel with capacitor 100uF

(2) Fluorousscent offset in parallel with capacitor 14uF

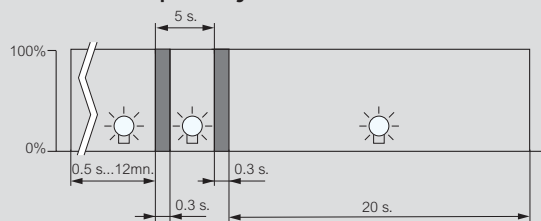
FEATURES

Rated pulse withstand voltage (kV):	4
Rated voltage Vn (Vac):	230
Rated insulating voltage Ui (Vac):	250
Rated current Contact (A):	16 (5 for item F25P)
Type di Contact:	1N0
Rated frequency (Hz):	50÷60
Regolazione temporizzazione:	0.5s÷12min item F25/230S 0.5s ÷10min item F25/230
Preavviso di spegnimento (s):	40 (item. F25P) 20 (itemF25/230S)
Operating temperature (°C):	-10÷40
Maximum No. of mechanical operations:	30000
Protection index (terminals/other zones):	IP20
Maximum section of flexible/rigid cable (mm ²):	6 (2x2.5 item F25P)

WIRING DIAGRAMS



Time control of lamp switching on



For fluorousscent and energy saving lamps, the off time increases by 0.3 seconds due to the lamp reset time.

ELECTRONIC TIMERS



F16D/230N



F16M/230N



F16C/230N

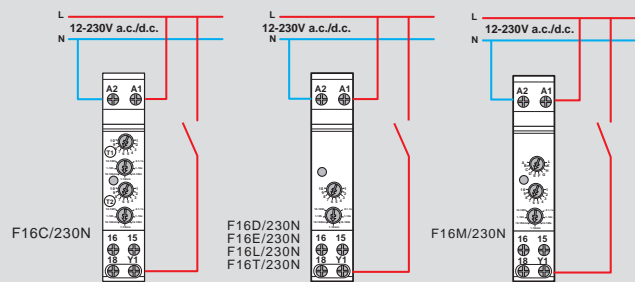
Item code **ELECTRONIC TIMERS**

		Timing
F16M/230N	Multifunction - 10 functions Time control: 0.1s-100h	see technical data
F16E/230N	Function E (excitation delay): it delays the powering of a load, with time control starting as soon as the timer is powered Time control: 0.1s-100h	
F16T/230N	Function T (de-exciting delay with pulse control): time control is dependant on the closing of a bistable contact or on a pushbutton connected to the timer Time control: 0.1s-100h	
F16D/230N	Function D (de-exciting delay with resettable pulse control): similar to the T function, with the only difference being that the activation of the load depends on the trailing edge of the control pulse. Each time a pulse is sent from the control contact, the time delay is reset to zero. Time control: 0.1s-100h	
F16C/230N	Function C (cyclical): enables activation and deactivation of the users following a cyclical pattern. Time control: 0.1s-100h	
F16L/230N	Time control and limitation of closing time. Time control: 0.1s-100h	

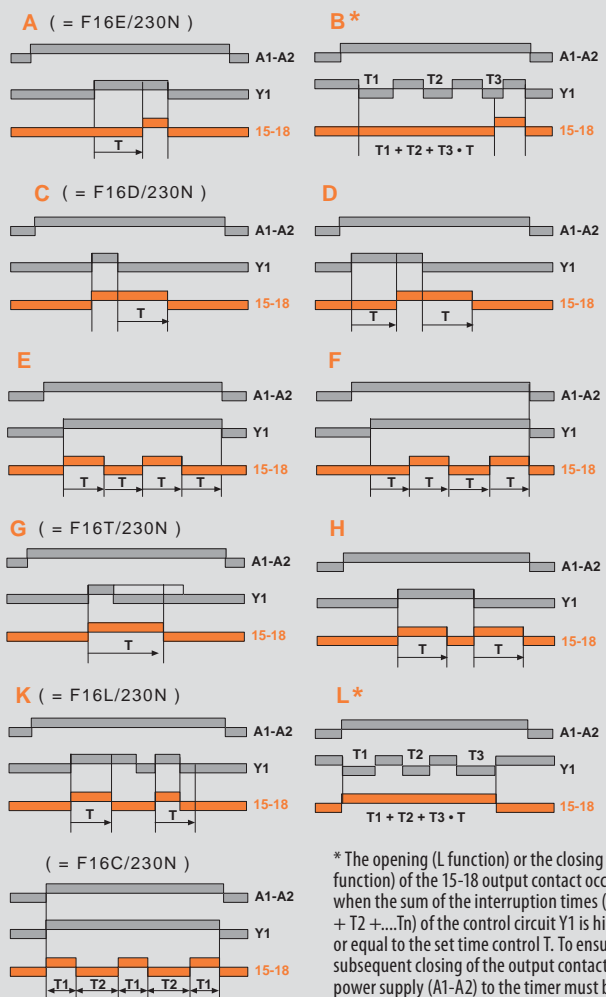
FEATURES

Rated voltage Vn (Vac/d.c.):	12÷230
Operating voltage:	85÷115%Vn
Rated insulating voltage Ui (Vac):	250
Opening capacity (VA):	1250 (30W)
Breaking power (A):	0.01÷8
Type of Contact:	1NO (5A)
Rated frequency (Hz):	50÷60
Time control adjustment:	0.1s÷100 hours
Start factor:	100%
Maximum consumed power (W):	0.5 (12Vdc) – 1.4 (230Vac)
Repeat precision:	±0.2%
Maximum No. of operations	10.000.000
Maximum reset time (ms):	200
Minimum pulse duration (ms):	50
N° of modules:	1
Maximum section of flexible/rigid cable (mm ²):	2.5

WIRING DIAGRAMS



TIMING



TWILIGHT SWITCHES



F11P1

Item code

TWILIGHT SWITCHES

- Cable for light sensor 2x1.5 mm².
- Maximum length of the connection cable 50 m
- LED for switch off indication

F11P1

Non programmable twilight switch
 1NO/NC contact - 230V/5A, brightness threshold 0.5-2000lux
 - 230 V, 50/60Hz
 - 1 NO contact 250 V/50 Hz, 16 A~ cos φ = 1
 - Zero-crossing switch
 - Filament lamp load 2000 W
 - Fluorescent lamp 2000 W, compensated series
 - Parallel compensation max. 70 μF, 1000 W
 - Energy saving lamps 1000 W
 - Halogen lamps 2000 W, electronic ballast
 Manual circuit breakers: ON/ automatic
 ON/OFF delay: approx. 90 seconds
 Adjustment range: 1–100.000 Lux
 Device width: 1 x 17.5 mm module
 Protection index: IP20 (device),
 IP54 (brightness sensor)
 Brightness sensor included, item F11RN

Item code

SPARE ACCESSORIES

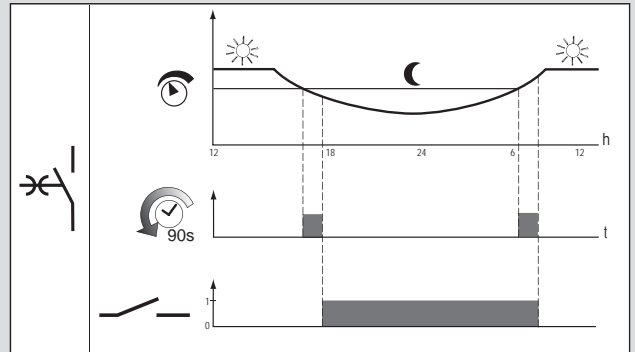
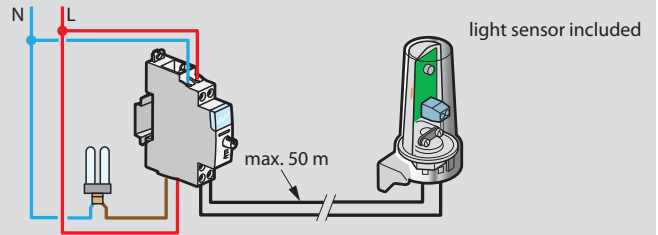
F11S

Spare brightness sensor

FEATURES

Rated voltage Vn (Vac):	230
Rated current:	16 A
Rated frequency (Hz):	50 ÷ 60
Power consumption (W):	0.65
Adjustment of the light level (Lux):	2÷100.000
Minimum adjustment (min):	1
Operating temperature (°C):	-20÷55
Maximum length of the connection:	50 m
Protection index :	IP30 (switch) - IP54 (light sensor)
Maximum section of flexible/rigid cable (mm ²):	10

WIRING DIAGRAM



ANALOGUE TIME SWITCHES


F66GR1

F66GR3

F66GSW3

Item code	DAILY TIME SWITCH
	<ul style="list-style-type: none"> • With synchronous (mains-synchronised clock precision) or quartz motor • +/- 2.5 s/day clock precision (quartz motor) • 100 hour running reserve (quartz motor) • Unit width: 1 module of 17.5 mm
F66GR1	daily, 24 hour vertical dial, charge reserve 100 hours, minimum adjustment 15 minutes, 1NO contact - 230V/16A - 1 module

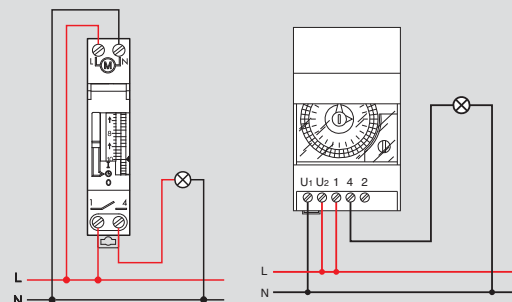
Item code	DAILY/WEEKLY TIME SWITCHES
	<ul style="list-style-type: none"> • With synchronous (mains-synchronised clock precision) or quartz motor • +/- 2.5 s/day clock precision (quartz motor) • 100 hour running reserve (quartz motor) • Surface-mounting possible with a wall bracket and a terminal cover • Unit width: 3 modules of 17.5 mm each
F66GR3	daily, 24 hour dial, charge reserve 100 hours, minimum adjustment 15 minutes, 1NO/NC contact - 230V/16A - 3 modules
F66SR3	weekly, 7 day dial, charge reserve 100 hours, minimum adjustment 2 hours, 1NO/NC contact - 230V/16A - 3 modules

Item code	TIME SWITCHES WITH SUMMER/WINTER FUNCTIONS
	<ul style="list-style-type: none"> • Automatic setting of the time during startup • Automatic switching for summer/winter time (daylight saving time) • With quartz clockwork • +/- 0.2 s/day clock precision • 6-year running reserve (time buffering in case of power failure) • Surface-mounting possible with wall bracket and terminal cover • Unit width: 3 modules of 17.5 mm each
F66GSW3	daily, 24 hour dial, charge reserve 100 hours, minimum adjustment 15 minutes, summer/winter function, 1NO/NC contact - 230V/16A - 3 modules
F66WSW3	weekly, 7 day dial, charge reserve 100 hours, minimum adjustment 2 hours, summer/winter function, 1NO/NC contact - 230V/16A - 3 modules

FEATURES

TYPE	F66GSW3	F66WSW3	F66GR3	F66SR3	F66GR1
N° of modules	3				1
N° of channel	1	1	1	1	1
Mechanism	quartz	quartz	quartz	quartz	quartz
Dial	24 hours	7 giorni	24 hours	7 giorni	24 hours
Running reserve	6 years	6 years	100 hours	100 hours	100 hours
Switching step	15 min	2 hours	15 min	2 hours	15 min
Minimum time adjustment	30 min	4 hours	30 min	4 hours	15 min
Time adjustment	± 5 min	± 30 min	± 5 min	± 30 min	± 5 min
Precision	0.2 sec./day	0.2 sec./day	2.5 sec./day	2.5 sec./day	2.5 sec./day
Switching capacity					
• resistive 230 V~ cosφ = 1	16 A~				
• filament Light 230 V~	4 A~				
• inductive 230 V~ cosφ = 0.6	12 A~				
Switching output	1 NO/NC	1 NO/NC	1 NO/NC	1 NO/NC	1 NO
Operating temperature	from -10 to +55 °C				
Protection index	IP 20				

WIRING DIAGRAMS





DIGITAL TIME SWITCHES

daily/weekly and astronomic



F68N1



F68AN1



F68AN2

With a text-guided programming concept, 15 different languages that can be selected with the language selection function, easy PC-based creation of programs using the software, data key and PC adapter, optional program backup on the data key, EEPROM memory for back up switching programs, 5-year running reserve for date and time, automatic switching for summer/winter time (daylight saving time), clock precision of +/- 0.1 s/day, with zero-crossing switching

Item code **DIGITAL DAILY/WEEKLY TIME SWITCHES**

- Daily and weekly time switch
- Quick and easy programming due to the option to select day blocks, day blocks can be individually set or selected from the blocks Mon–Sun, Mon–Fri or Sat–Sun
- Programming with precision to the second
- Switch times visible in weekly overview on display
- With the following additional functions for added convenience:
 - Holiday program
 - Random function
 - Operating hours counter, counting range of up to 65,535 h
 - Control input (1-channel time switch), switch-off delay can be set from 0 s to 23 h 59 min 59 s
 - 1h test
 - PIN code input lock
- Expert mode for additional functions:
 - Cycle function, switch-on time can be set between 1 s and 1 h 59 min 59 s
 - Control input “extra” (1-channel time switch)
 - Control input “off” (1-channel time switch)
 - Channel-switching function (2-channel time switch)
 - Mains-synchronous operation can be set
- Backlight
- Unit width: 2 modules of 17.5 mm each

F68N1	1 Channel daily/weekly, charge reserve 100 hours, 56 programs, 1NO/NC contact - 230V/16A, minimum adjustment 1 minute
F68N2	2 Channels daily/weekly, charge reserve 100 hours, 56 programs, 2NO/NC contact - 230V/16A minimum adjustment 1 minute

Item code **ASTRONOMIC DAILY/WEEKLY TIME SWITCHES**

- For switching on/off lights and other electric devices according to the rising/setting of the sun
- With combination function for creating switching programs in which the devices are switched according to astronomical time and/or fixed preset times
- Daily astronomical calculation of the sunrise/sunset times based on the entered location or location coordinates
- Offset for sunrise and sunset times can be adjusted up to +/- 120 min. These time differentials are set separately for sunrise and sunset
- Controlled directly by the distribution board, no separate light sensor required
- Quick and simple programming due to the option to select day blocks; day blocks can be individually set or selected from the blocks Mon–Sun, Mon–Fri or Sat–Sun
- Programming with precision to the second
- Switch times visible in weekly overview on display
- With the following additional functions for added convenience:
 - Holiday program
 - Random function
 - Operating hours counter, counting range of up to 65,535 h
 - Control input (1-channel time switch), switch-off delay can be set from 0 s to 23 h 59 min 59 s
 - 1 h test
 - PIN code input lock
- Expert mode for additional functions:
 - Cycle function, switch-on time can be set between 1 s and 1 h 59 min 59 s
 - Control input “extra” (1-channel time switch)
 - Control input “off” (1-channel time switch)
 - Mains-synchronous operation can be set
- Backlight
- Unit width: 2 modules of 17.5 mm each

F68AN1	1 Channel daily/weekly, astronomy function, charge reserve 100 hours, 56 programs, 1NO/NC contact - 230V/16A, minimum adjustment 1 minute
F68AN2	2 Channels daily/weekly, astronomy function, charge reserve 100 hours, 56 programs, 2NO/NC contact - 230V/16A, minimum adjustment 1 minute

DIGITAL TIME SWITCHES

Yearly



F68AYN1



F67SR64



F68K



F681

With a text-guided programming concept, switch times visible in a weekly overview on the display with backlight, programming with precision to the second, 15 different languages can be selected with language selection function, easy PC-based creation of programs using the software, data key and PC adapter, data key for quick and easy transfer of created programs to other time switches and/or for creating backup copies, quick and easy programming due to the option to select day blocks, day blocks can be individually

set or selected from preset block Mon – Sun, programs can be backed up on the data key, EEPROM memory for back up switching programs, 5-year running reserve for date and time, automatic switching for summer/winter time (daylight saving time), clock precision of +/- 0.1 s/day (+/- 0.2 s/day: cat. no. 0 047 70), with zero-crossing switching

Item code	DIGITAL YEARLY TIME SWITCHES
	<ul style="list-style-type: none"> Yearly and weekly time switch with additional astronomical function for all channels 84 switching programs per channel, comprising: <ul style="list-style-type: none"> - 28 weekly programs - 28 yearly programs - 28 special programs (priority program) With the following additional functions for added convenience: <ul style="list-style-type: none"> - Astronomical function (sunrise/sunset times) can be combined with time switch function - Offset can be set to either +/- 120 min or +/- 12°00' - Random function - Operating hours counter, counting range of up to 65,535 h - Control input (1-channel time switch), switch-off delay can be set from 0 s to 23 h 59 min 59 s - 1 h test - PIN code input lock Expert mode for additional functions: <ul style="list-style-type: none"> - Control input "extra" (1-channel time switch) - Control input "off" (1-channel time switch,) - Cycle function, switch-on time can be set between 1 s and 1 h 59 min 59 s - Channel-switching function (2-channel time switch) - Mains-synchronous operation can be set Unit width: 2 modules of 17.5 mm each
F68AYN1	1 Channel yearly and weekly, astronomy function, charge reserve 100 hours, 56 programs, 1NO/NC contact - 230V/16A, minimum adjustment 1 minute
F68AYN2	2 Channels yearly and weekly, astronomy function, charge reserve 100 hours, 56 programs, 2NO/NC contact - 230V/16A, minimum adjustment 1 minute

Item code	ASTRONOMIC YEARLY TIME SWITCH
	<ul style="list-style-type: none"> Yearly and weekly time switch with additional astronomical function for all channels 84 switching programs per channel, comprising: <ul style="list-style-type: none"> - 28 weekly programs - 28 yearly programs - 28 special programs (priority program) With the following additional functions for added convenience: <ul style="list-style-type: none"> - Astronomical function (sunrise/sunset times) can be combined with time switch function - Random function - Operating hours counter, counting range of up to 65,535 h - 1 h test - PIN code input lock - Cycle function (channel 1) - Control input (channel 1) - Mains-synchronous operation can be set Unit width: 6 modules of 17.5 mm each
F67SR64	4 Channels daily/weekly, charge reserve 100 hours, 56 programs, 4NO/NC contacts- 230V/10A, minimum adjustment 1 second
	PROGRAMMING ACCESSORIES
F68K	Data key - Import switching programs into the time switch, to do so select the "READ KEY" function on the time switch. - Transfer switching programs to the key using the "WRITE KEY" time switch function, this allows you to quickly and easily transfer programs to other time switches and/or to create backup copies
F681	PC adapter for USB port - For programming a data key on a PC - Including AlphaSoft programming software, data key and additional slot for data keys - System requirements: Windows® XP, Windows® Vista, Windows® 7

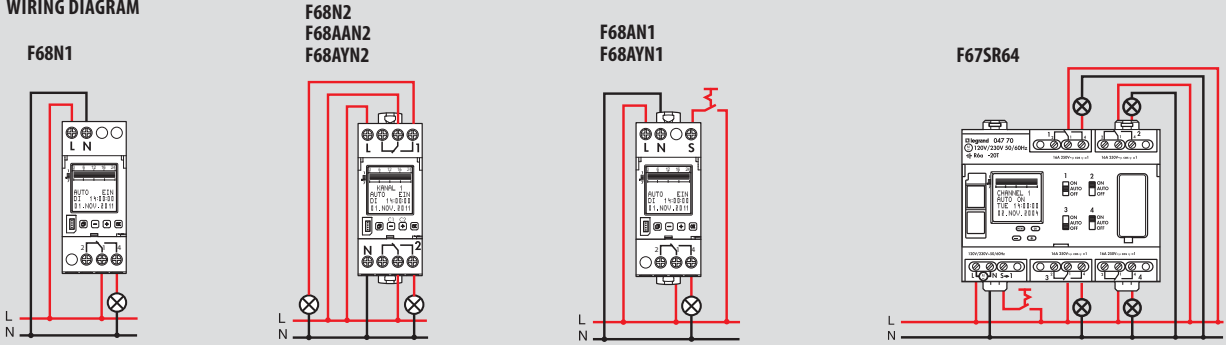
FEATURES

TYPE	F68N1	F68N2	F68AN1	F68AN2	F68AYN1	F68AYN2	F67SR64
Rated voltage	230 V 50/60 Hz	230 V 50/60 Hz	230 V 50/60 Hz	230 V 50/60 Hz	230 V 50/60 Hz	230 V 50/60 Hz	230 V 50/60 Hz
N° of modules	2	2	2	2	2	2	6
N° of Channels	1	2	1	2	1	2	4
Output contacts	1 NO/NC	2 NO/NC	1 NO/NC	2 NO/NC	1 NO/NC	2 NO/NC	4 NO/NC
Zero-crossing switching	✓	✓	✓	✓	✓	✓	
Switching capacity							
• resistive 250 V ~ cosφ = 1	16 A ~	16 A ~	16 A ~	16 A ~	16 A ~	16 A ~	16 A ~
• inductive 230 V ~ cosφ = 0.6	10 A ~	10 A ~	10 A ~	10 A ~	10 A ~	10 A ~	10 A ~
• Filament lamp	2000 W	2000 W	2000 W	2000 W	2000 W	2000 W	1800 W
• Fluorescent lamp compensated in series	2000 VA	2000 VA	2000 VA	2000 VA	2000 VA	2000 VA	1400 VA
• Energy saving lamp	1000 W	1000 W	1000 W	1000 W	1000 W	1000 W	100 W
Programs ¹⁾	56	28 per Channel	56	28 per Channel	84	84 per Channel	84 per Channel
Control input with switch-off delay from 0 sec at 23 h 59 min 59 sec.			✓		✓		✓
Cyclic function (pulse time) min. 1 sec., max. 1 h 59 min. e 59 sec.	✓	✓	✓	✓	✓	✓	✓
Precision (typical)				~ 0.1 sec./day ²⁾			~ 0.2 sec./day ²⁾
Running reserve				5 years			
Minimu time adjustable				1 s			
Operating temperature				from -20 to +55 °C			
Protection index				IP 20			

¹⁾ A program consists of a switch-on time, a switch-off time as well as days or day blocks which are assigned as "switched-on" or "switched-off"

²⁾ can be set to mains-synchronous operation

WIRING DIAGRAM



DIGITAL TIME SWITCHES

weekly



OTHER DEVICES



F05/230

In accordance with VDE 0631 Part 1 and Part 2-7, IEC 60730-1 and 60730-2-7, EN 60730-1 and 60730-2-7, single-module time switch for installation in a distribution board, the display is patterned after the dial of an analogue clock. Can be switched to battery operation (the programmed switch commands are executed). For stand-alone applications, e.g. power generation systems that control the power for lighting systems, alarm systems, signalling equipment or information systems. Automatic switching for summer/winter time (daylight saving time), clock precision of +/- 1 s/day, sealable cover, IP20 degree of protection, -10°C to +55°C operating temperature.

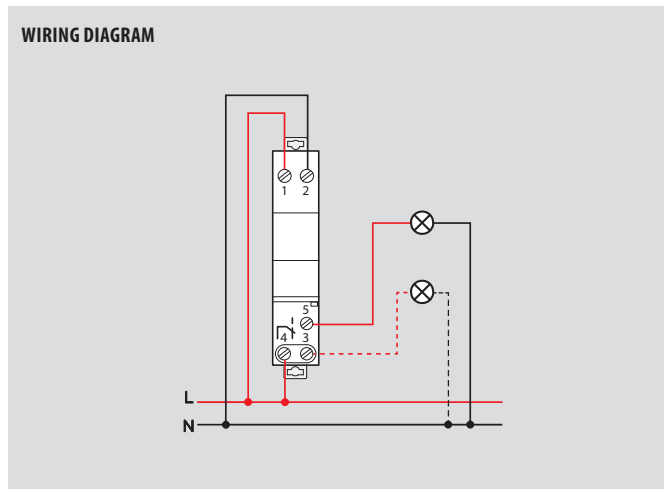
Item code	HOUR METER		
	Max. reading	Vn (Vac)	N° of modules
F05/230	99.999 hours	230	2

Item code	DIGITAL TIME SWITCH
F67SR11	<p>1 Channel daily/weekly, charge reserve 100 hours, 8 programs, 1NO/NC contact - 230V/16A, minimum adjustment 1 minute</p> <ul style="list-style-type: none"> • Easy creation of programs and navigation through the menus using a joystick which functions as a 5-way button, • Can be switched to constantly ON or OFF • Batteries (CR2032) can be easily replaced from the front due to the unit's modular design • 6-year running reserve for date and time • Automatic switching for summer/winter time (daylight saving time) • Unit width: 1 module of 17.5 mm



F30/16N

Item code	GERMAN STANDARD SOCKET			
	In (A)	Vn (Vac)	Contact	N° of modules
F30/16N	10/16	230	2P+T	2.5



F80CMT



F80AL

Series	ADAPTERS FOR CIVIL SERIES		N° of modules
	Type		
E80AM	MAGIC	standard	1
E80BM	MAGIC	standard	2
F80AL	LIVING and LIGHT	square module	2
F80CMT	MAGIC and MATIX	square module	2

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AD-EX-BD2016C - 07/2016