

ETITEC

Surge arresters M60 series

Combined Lightning Current and Surge Arrester T12 or T23 for direct mounting on 60 mm busbar systems (5 or 10mm thickness). Can be used in industry or other applications where 60mm busbar system is used. No additional adapters or accessories needed. T2 available also with integrated fuse (see M60F), no additional prefuse needed for SPD overcurrent protection. Pluggable design enables also simple module replacement.

Features:

- ▀ optical indication of faulty device (green ok, red false)
- ▀ remote signalisation (RC version only)
- ▀ MOV (metal oxide varistor) technology, no coprdination needed

Surge arrester ETITEC M60

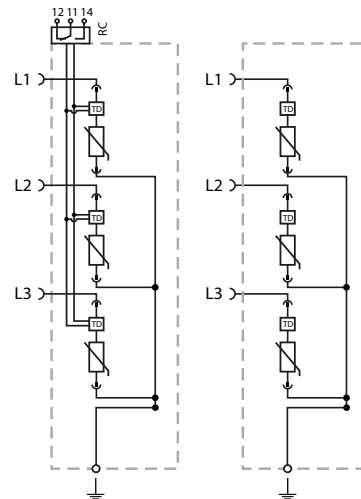
EN/IEC/VDE: T1,T2/I,II/B,C

Technical Data

ETITEC M60 T12 300/12,5 3+0 (RC)

IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_o / U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Impulse Discharge Current (10/350 μ s)	I_{imp}	12.5 kA
Specific Energy	W/R	39 kJ / Ω
Charge	Q	6.25 As
Voltage Protection Level	U_p	1500V
Response Time	t_a	< 25ns
Overcurrent Protection (max)		160 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 5s	U_T	337 V
TOV Safe Fail 120min	U_T	442 V
Number of Ports		1
Additional Electrical Parameters (Tests performed within internal laboratory)		
Residual Voltage 5 kA (8/20 μ s)	U_{res}	1100 V
Overcurrent Protection (min)		160 A gG
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °C to +85 °C
Permissible Operating Humidity	RH	5%...95%
Altitude (max)		4000 m
Terminal Screw Torque	M_{max}	PH2 / 4.5 Nm
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible)
Mounting		60 mm Busbar Systems
Degree Of Protection		IP 20 / IP 40 in combination with cover
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5 A, 12V/0.5A
RC Conductor Cross Section (max)		1.5 mm ² (Solid)

Internal Configuration



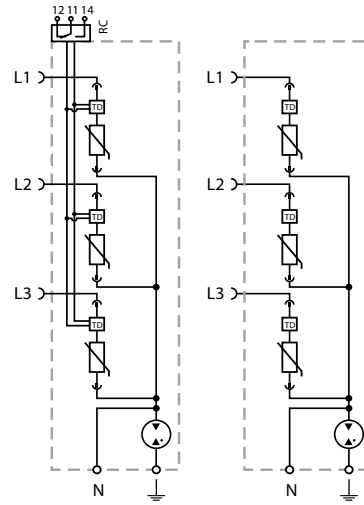
Legend

- L Line Busbar Terminal
- Z PEN Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect

Technical Data

ETITEC M60 T12 300/12,5 3+1 (RC)			
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_n / U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300 V
	(N-PE)	U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE)	I_n	20 kA / 80 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE)	I_{max}	50 kA / 100 kA
Impulse Discharge Current (10/350 μ s)	(L-N)/(N-PE)	I_{imp}	12.5 kA / 50 kA
Specific Energy	(L-N)/(N-PE)	W/R	39 kJ / Ω / 625 kJ / Ω
Charge	(L-N)/(N-PE)	Q	6.25 As / 25As
Voltage Protection Level	(L-N)/(N-PE)	U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE)	I_n	100A
Response Time	(L-N)/(N-PE)	t_A	< 25ns / < 100ns
Overcurrent Protection (max)			160 A gG
Short-Circuit Current Rating (AC)		I_{SCR}	25 kA
TOV Withstand 5s	(L-N)	U_r	337 V
TOV Safe Fail 120min	(L-N)	U_r	442 V
TOV Withstand 200ms	(N-PE)	U_r	1200 V
Number of Ports			1
Additional Electrical Parameters (Tests performed within internal laboratory)			
Residual Voltage 5 kA (8/20 μ s)		U_{res}	1100 V / 305 V
Overcurrent Protection (min)			160 A gG
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °C to +85 °C
Permissible Operating Humidity		RH	5%...95%
Altitude (max)			4000 m
Terminal Screw Torque		M_{max}	PH2 / 4.5 Nm
Conductor Cross Section (max)			35 mm ² (Solid, Stranded) / 25 mm ² (Flexible)
Mounting			60 mm Busbar Systems
Degree Of Protection			IP 20 / IP 40 in combination with cover
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5 A, 12V/0.5A
RC Conductor Cross Section (max)			1.5 mm ² (Solid)

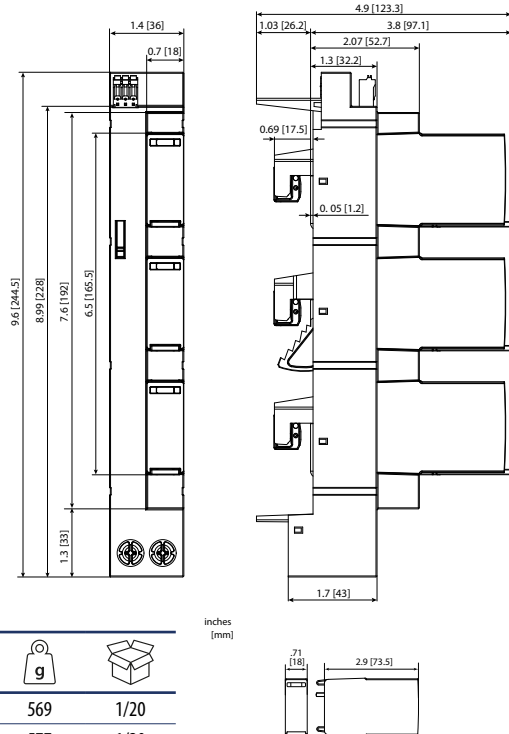
Internal Configuration



Legend

- L Line Busbar Terminal
- Z PE Conductor Terminal
- N Neutral Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter

Dimensions



ETITEC M60 T12

Type	Code No.	I_{imp} (10/350) [kA]	I_n / I_{max} (8/20) [kA]	U_c [V AC]	Network	g	Box
ETITEC M60 T12 300/12,5 3+0	002440850	12,5	20/50	300	TN-C	569	1/20
ETITEC M60 T12 300/12,5 3+0 RC	002440851	12,5	20/50	300	TN-C	577	1/20
ETITEC M60 T12 300/12,5 3+1	002440852	12,5	20/50	300	TT, TN-S	610	1/20
ETITEC M60 T12 300/12,5 3+1 RC	002440853	12,5	20/50	300	TT, TN-S	617	1/20

Replacement module

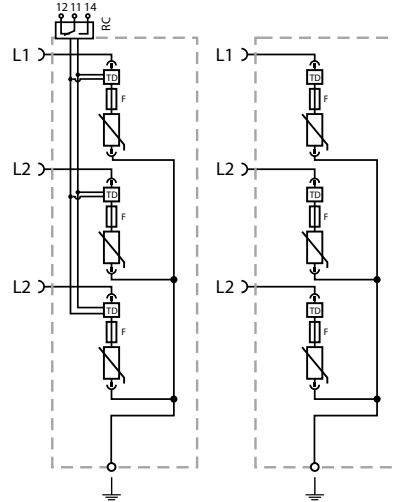
Type	Code No.	For use with	g	Box
MOD.ETITEC M60 T12 300/12,5	002440862	ETITEC M60 T12 300/12,5	104	1/28

Surge arrester ETITEC M60F with Integrated Fuse EN/IEC/VDE: T2,T3/II,III/C,D

Technical Data

ETITEC M60F T23 300/20 3+0 (RC)		
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_0 / U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	40 kA
Voltage Protection Level	U_p	1500V
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	U_{oc}	6 kV
Short Circuit Current of Combination Wave Generator (8/20 μ s)	I_{cw}	3 kV
Response Time	t_A	< 25ns
Overcurrent Protection (max)		not required
Short-Circuit Current Rating (AC)	I_{SCCR}	
TOV Withstand 5s	U_T	337 V
TOV Safe Fail 120min	U_T	442 V
Number of Ports		1
Additional Electrical Parameters (Tests performed within internal laboratory)		
Residual Voltage 5 kA (8/20 μ s)	U_{res}	1150 V
Overcurrent Protection (min)		not required
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °C to +85 °C
Permissible Operating Humidity	RH	5%...95%
Altitude (max)		4000 m
Terminal Screw Torque	M_{max}	PH2 / 4.5 Nm
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible)
Mounting		60 mm Busbar Systems
Degree Of Protection		IP 20 / IP 40 in combination with cover
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		1.5 mm ² (Solid)

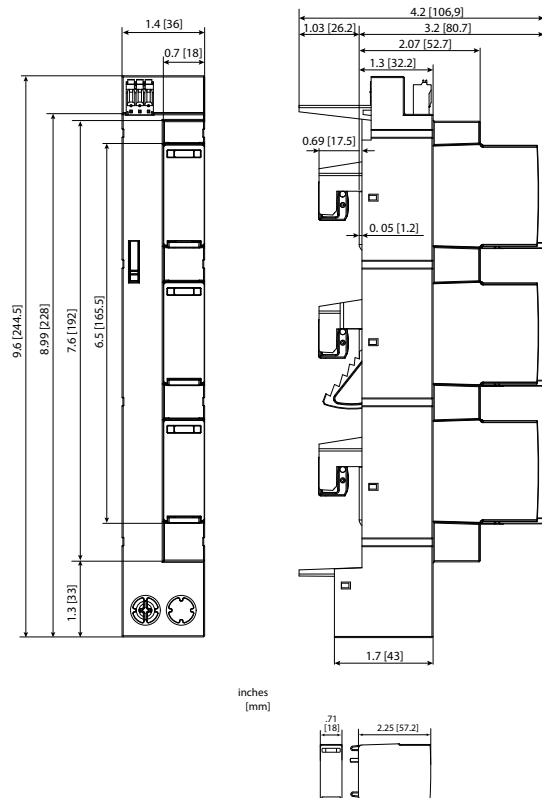
Internal Configuration



Legend

- L Line Busbar Terminal
- Z PEN Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnecter
- F Integrated Surge Adapted Backup Fuse

Dimensions

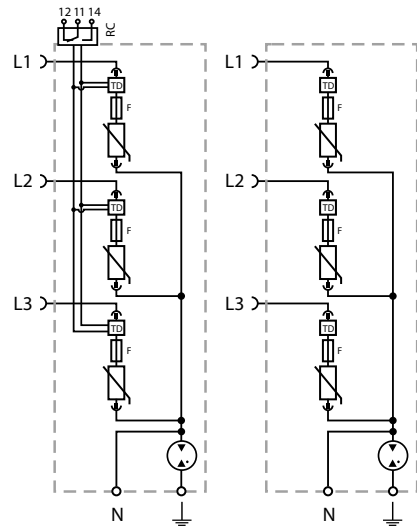


Inches [mm]

Technical Data

ETITEC M60F T23 300/20 3+1 RC			
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_n / U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300 V
	(N-PE)	U_f	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE)	I_n	20 kA / 40 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE)	I_{max}	40 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE)	U_p	1500V / 1500V
Open Circuit Voltage of Combination Wave Generator (1.2/50 μ s)	(L-N)/(N-PE)	U_{oc}	6 kA / 6 kA
Short Circuit Current of Combination Wave Generator (8/20 μ s)	(L-N)/(N-PE)	I_{cw}	3 kA / 3 kA
Follow Current Interrupt Rating	(N-PE)	I_f	100A
Response Time	(L-N)/(N-PE)	t_A	< 25ns / < 100ns
Overcurrent Protection (max)			not required
Short-Circuit Current Rating (AC)		I_{scCR}	
TOV Withstand 5s	(L-N)	U_T	337 V
TOV Safe Fail 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Additional Electrical Parameters (Tests performed within internal laboratory)			
Residual Voltage 5 kA (8/20 μ s)		U_{res}	1150 V
Overcurrent Protection (min)			not required
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °C to +85 °C
Permissible Operating Humidity		RH	5%...95%
Altitude (max)			4000 m
Terminal Screw Torque		M_{max}	PH2 / 4.5 Nm
Conductor Cross Section (max)			35 mm ² (Solid, Stranded) / 25 mm ² (Flexible)
Mounting			60 mm Busbar Systems
Degree Of Protection			IP 20 / IP 40 in combination with cover
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)			1.5 mm ² (Solid)

Internal Configuration



Legend

- L Line Busbar Terminal
- N Neutral Conductor Terminal
- Z PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect
- F Integrated Surge Adapted Backup Fuse

ETITEC M60F T23 with integrated fuse

Type	Code No.	I_n / I_{max} (8/20) [kA]	U_{oc} / I_n	U_c [V AC]	Network		
ETITEC M60F T23 300/20 3+0	002440858	20/40	6kV/3kA	300	TN-C	463	1/20
ETITEC M60F T23 300/20 3+0 RC	002440859	20/40	6kV/3kA	300	TN-C	471	1/20
ETITEC M60F T23 300/20 3+1	002440860	20/40	6kV/3kA	300	TT, TN-S	499	1/20
ETITEC M60F T23 300/20 3+1 RC	002440861	20/40	6kV/3kA	300	TT, TN-S	507	1/20

Replacement module

Type	Code No.	For use with		
MOD.ETITEC M60F T23 300/20	002440864	ETITEC M60F T2 300/20	69	1/28

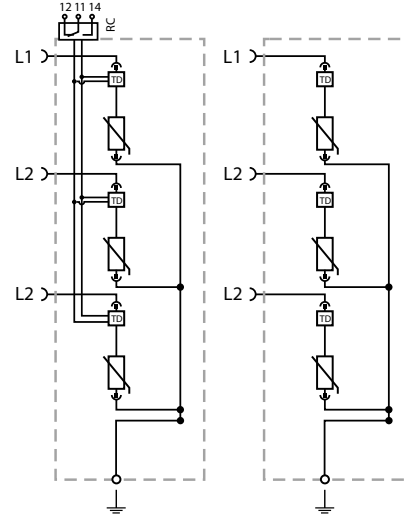
Surge arrester ETITEC M60

EN/IEC/VDE: T2,T3/II,III/C,D

Technical Data

ETITEC M60 T23 300/20 3+0 (RC)		
IEC Electrical		
Nominal AC Voltage (50/60Hz)	U_0 / U_n	240 V
Maximum Continuous Operating Voltage (AC)	U_c	300 V
Nominal Discharge Current (8/20 μ s)	I_n	20 kA
Maximum Discharge Current (8/20 μ s)	I_{max}	50 kA
Voltage Protection Level	U_p	1500V
Response Time	t_A	< 25ns
Overcurrent Protection (max)		160 A gG
Short-Circuit Current Rating (AC)	I_{SCCR}	25 kA
TOV Withstand 5s	U_T	337 V
TOV Safe Fail 120min	U_T	442 V
Number of Ports		1
Additional Electrical Parameters (Tests performed within internal laboratory)		
Residual Voltage 5 kA (8/20 μ s)	U_{res}	1000 V
Overcurrent Protection (min)		80 A gG
Mechanical & Environmental		
Operating Temperature Range	T_a	-40 °C to +85 °C
Permissible Operating Humidity	RH	5%...95%
Altitude (max)		4000 m
Terminal Screw Torque	M_{max}	PH2 / 4.5 Nm
Conductor Cross Section (max)		35 mm ² (Solid, Stranded) / 25 mm ² (Flexible)
Mounting		60 mm Busbar Systems
Degree Of Protection		IP 20 / IP 40 in combination with cover
Housing Material		Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State / Fault Indication		Green Flag / Not Green Flag
Remote Contacts (RC)		Optional
RC Switching Capacity		AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)		1.5 mm ² (Solid)

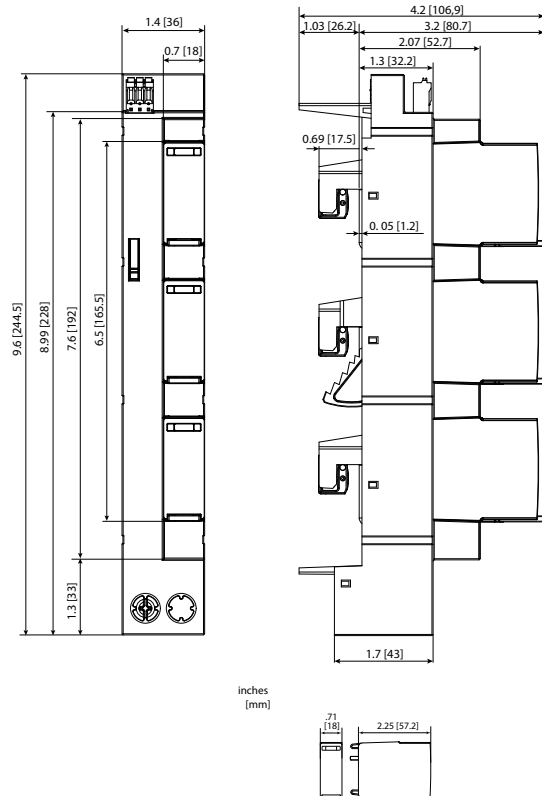
Internal Configuration



Legend

- L Line Busbar Terminal
- Z PEN Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnector

Dimensions

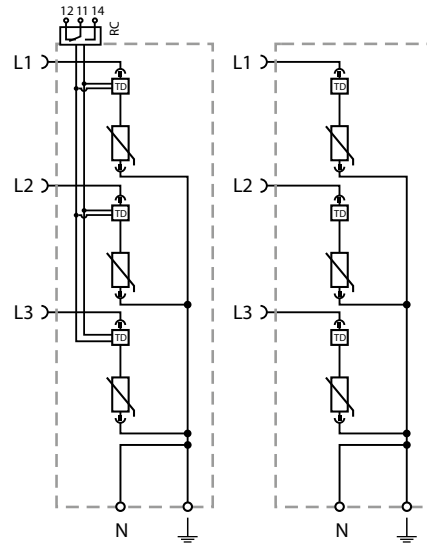


Inches [mm]

Technical Data

ETITEC M60 T23 300/20 3+1 RC			
IEC Electrical			
Nominal AC Voltage (50/60Hz)		U_n / U_n	240 V
Maximum Continuous Operating Voltage (AC)	(L-N)	U_c	300 V
	(N-PE)	U_c	305 V
Nominal Discharge Current (8/20 μ s)	(L-N)/(N-PE)	I_n	20 kA / 40 kA
Maximum Discharge Current (8/20 μ s)	(L-N)/(N-PE)	I_{max}	40 kA / 65 kA
Voltage Protection Level	(L-N)/(N-PE)	U_p	1500V / 1500V
Follow Current Interrupt Rating	(N-PE)	I_{fr}	100A
Response Time	(L-N)/(N-PE)	t_A	< 25ns / < 100ns
Overcurrent Protection (max)			160 A gG
Short-Circuit Current Rating (AC)		I_{scCR}	25 kA
TOV Withstand 5s	(L-N)	U_T	337 V
TOV Safe Fail 120min	(L-N)	U_T	442 V
TOV Withstand 200ms	(N-PE)	U_T	1200 V
Number of Ports			1
Additional Electrical Parameters (Tests performed within internal laboratory)			
Residual Voltage 5 kA (8/20 μ s)		U_{res}	1000 V / 305 V
Overcurrent Protection (min)			80 A gG
Mechanical & Environmental			
Operating Temperature Range		T_a	-40 °C to +85 °C
Permissible Operating Humidity		RH	5%...95%
Altitude (max)			4000 m
Terminal Screw Torque		M_{max}	PH2 / 4.5 Nm
Conductor Cross Section (max)			35 mm ² (Solid, Stranded) / 25 mm ² (Flexible)
Mounting			60 mm Busbar Systems
Degree Of Protection			IP 20 / IP 40 in combination with cover
Housing Material			Thermoplastic: Extinguishing Degree UL 94 V-0
Operating State / Fault Indication			Green Flag / Not Green Flag
Remote Contacts (RC)			Optional
RC Switching Capacity			AC: 250V/ 1A, 125V/ 1A; DC: 48V/0.5A, 24V/0.5A, 12V/0.5A
RC Conductor Cross Section (max)			1.5 mm ² (Solid)

Internal Configuration



Legend

- L Line Busbar Terminal
- N Neutral Conductor Terminal
- Z PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TD Thermal Disconnect

ETITEC M60 T23

Type	Code No.	I_n / I_{max} (8/20) [kA]	U_{oc} / U_n	U_c [V AC]	Network		
ETITEC M60 T23 300/20 3+0	002440854	20/40	6kV/3kA	300	TN-C	527	1/20
ETITEC M60 T23 300/20 3+0 RC	002440855	20/40	6kV/3kA	300	TN-C	535	1/20
ETITEC M60 T23 300/20 3+1	002440856	20/40	6kV/3kA	300	TT, TN-S	563	1/20
ETITEC M60 T23 300/20 3+1 RC	002440857	20/40	6kV/3kA	300	TT, TN-S	571	1/20

Replacement module

Type	Code No.	For use with		
MOD.ETITEC M60 T23 300/20	002440863	ETITEC M60 T2 300/20	66	1/28