ATyS M

From 40 to 160 A

➲ Function

The **ATyS M**, dedicated to applications below 160A, enables the switching On Load of single or three phase sources in remote or automatic mode.
This Transfer Switching Equipment (TSE) is designed to be used in low voltage power systems for Open Transition Transfer applications.
This Transfer Switching Equipment (TSE) is composed of two mechanically and electrically interlocked switches.

- The **ATyS M 3** (RTSE) is driven by volt-free dry contacts allowing switching operation between position I, 0, II, from an external control logic or a PLC (control relay type ATyS C30).
- The **ATyS M 6** (ATSE) is dedicated to break before make automatic transfer applications. The ATyS M 6 integrates control relays, timers and test functions to manage a Normal/Backup switching operation between two networks or between a generator set and a network.

➲ General characteristics

- Isolation with positive break indication.
- On load switching.
- Manual emergency operation.
- 3 stable positions.(I, 0, II).
- Padlocking in 0 or in all three positions (I, 0, II).
- AUTO / MANU selector.
- Command of the device in 0 position thanks to the energy storage device (ATyS M 6e).
- Single phase or three phase control on networks I and II (ATyS M 6s and M 6e).
- Electrical measurements (ATyS M 6e).

➲ Conformity to standards

- IEC 60947-3
- IS 14947-3
- EN 60947-3
- NBN EN 60947-3
- BS EN 60947-3
- GB 14048
- IEC 60947-6-1
- EN 60947-6-1
- NBN EN 60947-6-1
- BS EN 60947-6-1
- VDE 0660-107

Emergency manual operation

Padlocking facility

AUT/ MAN sealable cover

What you need to know

• On ATyS M 3s model

Power supply

Single-phase interface

Three-phase interface

ATyS M 3s is equipped with two independent 230 VAC (176-288 VAC), 50/60 Hz (45/65-65 Hz) power inputs.

These two supplies can be connected individually to switch I and switch II:
- Power supply I must be available to reach position I,
- Power supply II must be available to reach position II.

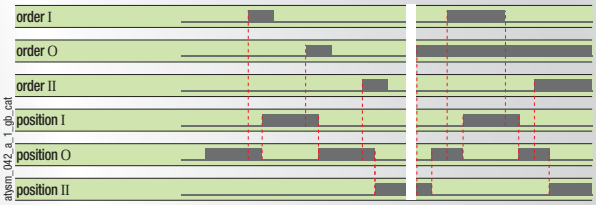
The 0 position is a stable transition position.
The use of a double power supply module (DPS) or an external supply enables the full security of the 3 position commands in all circumstances (from the available source). In this case, both supply inputs of the ATyS M 3s must be connected in parallel in order for them both to be supplied from the output of the DPS.

Electrical control

The switching operation can be driven by an external volt free contact coming from an external control relay (ATyS C30 for example).The positions are stable in case of loss of supply. There are two types of command logic to chose from: impulse or contactor.

• Impulse logic
- A switching command of at least 60 ms is necessary to initiate operation.
- Orders I and II have priority over order 0.
- Order 0 must be maintained (joint connection 317).

• Contactor logic
- If command I or II disappears, the device returns to zero position, if power supply is available.
- The first command (order) received (I or II) has priority as long as it remains present.



• On ATyS M 6s and 6e models

Power supply

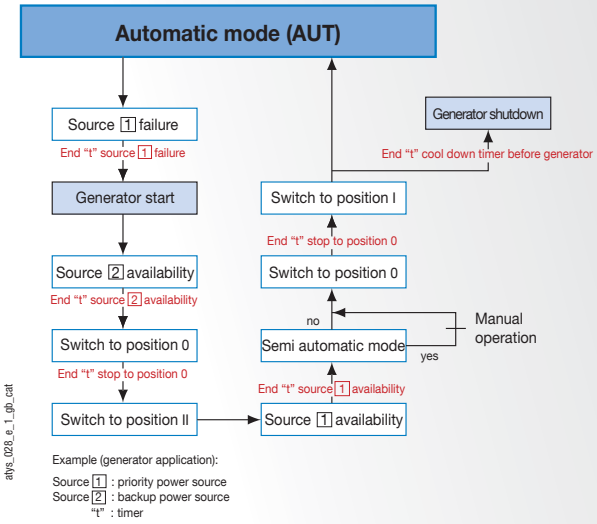
ATyS M 6 products are self power supplied from incoming supplies: 230 VAC (176-288 VAC for the ATyS M 6s and 160-305 VAC for the ATyS M 6e), 50/60 Hz (45-65 Hz).
For three phase products: two different versions are available:
- 230 / 400 VAC with neutral conductor distributed: product is power supplied between phase and neutral,
- 127 / 230 VAC with or without neutral conductor distributed: product is power supplied between 2 phases.

For single phase products: one version is available:
- 230 VAC networks: product is power supplied between phase and neutral,

The neutral conductor can be connected to the left or right side of the switch.

Automatic control

The ATyS M 6e and M 6s are equipped with a sequence logic.



Configuration

ATyS M 6s

Single-phase interface

Three phase interface

Common points between the three-phase and single-phase versions:
- 2 potentiometers (Sector loss and return time delays)
- 2 dip-switches (Pause for 2 seconds in position 0 during the transitions I<->II ; Network-Network Application or Network-Genset).
- 4 LED's (Supplies status; Automatic mode; Fault)
- 3 inputs for external control (Inhibition of the automatic mode; Remote Test on load; Manual retransfer from standby supply to normal supply).
- 1 NO bi-stable output relay for generator start /stop command (30 VDC / 2 A).
- 1 NC relay for product availability (250 VAC / 0.5 A).

Three phase ATyS M specificities:
- 2 potentiometers (Nominal voltage; Voltage thresholds)
- 2 dip switches (50 or 60 Hz; Network)

Specificity of the single phase ATyS M:
- PRG button: automatic voltage and nominal frequency programmation.

ATyS M 6e

Three phase interface

- 4 applications: Network/Genset, Network/Network, With or without priority.
- Adjustable thresholds and hysteresis.
- Display + keyboard (Programming of the values; Visualization of the electrical readings; Test and control positions function; Visualization of the availability of supplies).
- LED's (Product Power On; Supplies status; Position of the switch status; Automatic mode TEST/CONTROL Mode; Fault)
- 3 configurable inputs for external control (Automatic mode inhibition; Test on load and off load; Manual retransfer; Electrical control of the switch in positions I, 0 or II; Change of priority network...).
- 3 NO output relays (250 VAC / 3 A) , configurable (Availability of the supplies; Auxiliary position contacts; Load shedding control; Operational product...)
- 1 configurable bi-stable output relay for generator start /stop command (30 VDC / 2 A).
- Connection of a remote interface ATyS D10 or D20.
- A version with RS485 Communication, JBUS/Modbus protocol, is available.

➲ References


atysm_214_a_1_cat

ATyS M 3s

Rating (A)	No. of poles	Power-supply voltage	ATyS M 3s	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contacts unit
40 A	2 P	230 VAC	1323 **2004**	2 P 1309 **2006** 4 P 1309 **4006**	2 pieces 1399 **4006**	2 pieces 2294 **4016**(1)	1st unit as standard 2nd unit 1309 **0001**(2)
	4 P	230 VAC	1323 **4004**				
63 A	2 P	230 VAC	1323 **2006**				
	4 P	230 VAC	1323 **4006**				
80A	2 P	230 VAC	1323 **2008**				
	4 P	230 VAC	1323 **4008**				
100 A	2 P	230 VAC	1323 **2010**				
	4 P	230 VAC	1323 **4010**				
125 A	2 P	230 VAC	1323 **2012**				
	4 P	230 VAC	1323 **4012**				
160 A	2 P	230 VAC	1323 **2016**	1309 **2016**			
	4 P	230 VAC	1323 **4016**	1309 **4016**			

(1) In the three-phase version, in order to ensure complete upstream and downstream protection, order the reference twice, for the single-phase version, order the reference once.
(2) 1 contact block for I, 0 and II positions.


atysm_012_a_2_cat

ATyS M 6s

Rating (A)	No. of poles	Network (VAC)	ATyS M 6s	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contacts unit	Sealable cover
40 A	2 P	230	1353 **2004**	2 P 1309 **2006** 4 P 1309 **4006**	2 pieces 1399 **4006**	2 pieces 2294 **4016**(1)	1 piece 1309 **0001**(2)	2 P 1359 **2000** 4 P 1359 **0000**
	4 P	127/230	1353 **4004**					
	4 P	230/400	1354 **4004**					
63 A	2 P	230	1353 **2006**					
	4 P	127 / 230	1353 **4006**					
	4 P	230 / 400	1354 **4006**					
80 A	2 P	230	1353 **2008**					
	4 P	127 / 230	1353 **4008**					
	4 P	230 / 400	1354 **4008**					
100 A	2 P	230	1353 **2010**					
	4 P	127 / 230	1353 **4010**					
	4 P	230 / 400	1354 **4010**					
125 A	2 P	230	1353 **2012**					
	4 P	127 / 230	1353 **4012**					
	4 P	230 / 400	1354 **4012**					
160 A	2 P	230	1353 **2016**	2 P 1309 **2016** 4 P 1309 **4016**				
	4 P	127 / 230	1353 **4016**					
	4 P	230 / 400	1354 **4016**					

(1) In the three-phase version, in order to ensure complete upstream and downstream protection, order the reference twice.
(2) 1 contact block for I, 0 and II positions.


atysm_007_a_2_cat

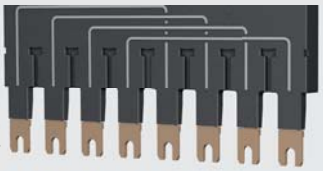
ATyS M 6e

Rating (A)	No. of poles	Network (VAC)	ATyS M 6e	ATyS M 6e + COM	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contacts unit	Remote Human/ Machine Interface
40 A	4 P	127 / 230	1363 **4004**	1383 **4004**	4 P 1309 **4006**	2 pieces 1399 **4006**	2 pieces 2294 **4016**(1)	1 piece 1309 **0001**(2)	ATyS D10 1599 **2010** ATyS D20 1599 **2020**
	4 P	230 / 400	1364 **4004**	1384 **4004**					
63 A	4 P	127 / 230	1363 **4006**	1383 **4006**					
	4 P	230 / 400	1364 **4006**	1384 **4006**					
80 A	4 P	127 / 230	1363 **4008**	1383 **4008**					
	4 P	230 / 400	1364 **4008**	1384 **4008**					
100 A	4 P	127 / 230	1363 **4010**	1383 **4010**					
	4 P	230 / 400	1364 **4010**	1384 **4010**					
125 A	4 P	127 / 230	1363 **4012**	1383 **4012**					
	4 P	230 / 400	1364 **4012**	1384 **4012**					
160 A	4 P	127 / 230	1363 **4016**	1383 **4016**	4 P 1309 **4016**				
	4 P	230 / 400	1364 **4016**	1384 **4016**					

(1) In order to ensure complete upstream and downstream protection, order the reference twice.
(2) 1 contact block for I, 0 and II positions.

Accessories

Bridging bars


atysm_025_a

Use
To provide common point on either incoming or outgoing terminals.

Rating (A)	No. of poles	Reference
40 … 125	2 P	1309 **2006**
160	2 P	1309 **2016**
40 … 125	4 P	1309 **4006**
160	4 P	1309 **4016**

Voltage sensing and power supply tap


atysm_026_a

Use
To allow connection of 2 x ≤1.5 mm² voltage sensing or power cables.
The voltage sensing tap can be mounted in all the terminals without reducing their connecting capacity.

Rating (A)	Lot de	Reference
40 ... 160	2 pieces	1399 **4006**

Terminal shrouds


atysm_027_a

Use
To have a full protection against direct contact with the connection terminals or parts.
Terminal shrouds advantages
Perforations enabling remote thermographic verification without dismantling.
Possibility of sealing.

Mounting
In three-phase version, for upstream and downstream protection, order the reference twice, in single phase version order the reference just once.

Rating (A)	Position	Reference
40 ... 160	Top and bottom	2294 **4016**(1)

(1) Reference made of 2 pieces.

Auxiliary contact

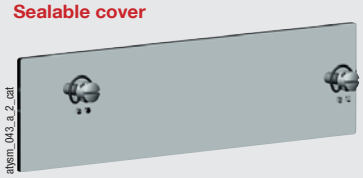

atysm_028_a_1_cat

Use
Up to 2 auxiliary contacts accessory per product.
Each accessory integrates 1 NOC auxiliary contact (for each position I, 0 and II).
The ATyS M 3s is delivered in standard with 1 unit.

Characteristics
250 VAC / 5 A maximum.

Rating (A)	Reference
40 … 160	1309 **0001**

Sealable cover



Use
Prevents access to the configuration panel of the ATyS M 6s.

Rating (A)	No. of poles	Reference
40 …160	2 P	1359 **2000**
40 …160	4 P	1359 **0000**

Residential enclosure

Use
Dedicated to the implementation of a single phase ATyS M, it enables easy access to an IP41 compact supply switching solution.

Rating (A)	H x W x D (mm)	Reference
40 ... 160	410 x 305 x 150	1309 **9056**

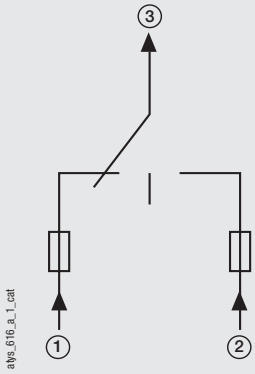
Auto transformer

Use
The 400/230 Vac 400 VA auto transformer is used with the ATyS M 6 in case of three-phase network without neutral.

To use it with the ATyS M 6e version 230/400 Vac, the position of the neutral (right or left) and the product network type (3NBL) have to be configured in the programming mode.

Rating (A)	Reference
40 … 160	4359 **4315**

Double power supply - DPS



1 and 2. In
3. Output

Use
Allows an ATyS M 3s to be supplied by two 230 VAC 50/60Hz networks.

Input
- The input is considered as "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: fuse protected 3.15 A
- Terminal connections: max. 6 mm².
- Modular device: 4 modules width.

Input 1	Input 2	Output
230 VAC	0 VAC	230 VAC (Input 1)
0 VAC	230 VAC	230 VAC (Input 2)
230 VAC	230 VAC	230 VAC (Input 1)
0 VAC	0 VAC	0 VAC

Description of accessories	Reference
DPS	1599 **4001**

Connecting cable for remote interfaces

Use
To connect between a remote interface (D10 or D20) and a control product (ATyS M 6e).
Characteristics: RJ45 8 straight non insulated cables, 3 m length.

Type	Length	Reference
RJ45 cable	3 m	1599 **2009**

Power connection terminals

Use
The power connection terminals allow conversion of the ATyS M cage terminals into bolt-on type connection terminals, allowing the connection of up to two 70mm² cables.
Each power connection terminal is provided with separation screens.

Rating (A)	Reference
40 ... 160	1399 **4017**

Remote interfaces for ATyS M 6e

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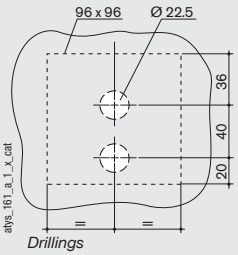
atys_565_c_1_cat

atys_597_a_1_cat

Interfaces are self powered from the ATyS M 6e



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Drillings

Use
To display source availability and changeover state on the front of a panel.
Interfaces are self powered from the ATyS M 6e.
Maximum connection distance of 3 m.

ATyS D10
To display source availability and changeover state on the cabinet front panel.
Protection degree: IP21

ATyS D20
In addition to the ATyS D10, it allows displays, operation; tests and configuration on the cabinet front panel.
Protection degree: IP21

Door mounting
2 holes Ø 22.5.
ATyS connection via RJ45 cable, not isolated.

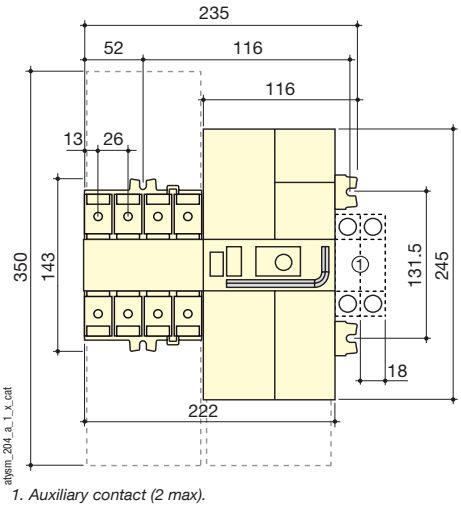
Cable not provided

Description of accessories	Reference
ATyS D10	1599 **2010**
ATyS D20	1599 **2020**

Dimensions

ATyS M 40 to 160 A

Single phase ATyS M



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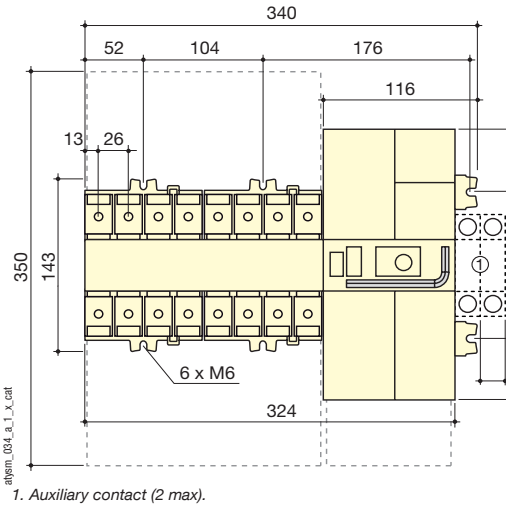
1. Auxiliary contact (2 max).

Three-phases ATyS M



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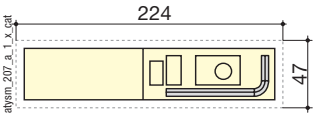
1. Auxiliary contact (2 max).

Single phase ATyS M - Door cutout



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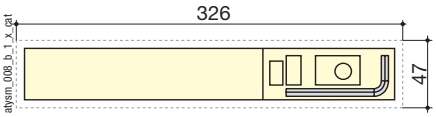
Three-phases ATyS M - Door cutout



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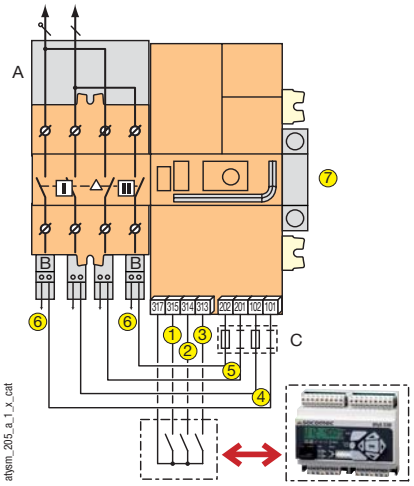
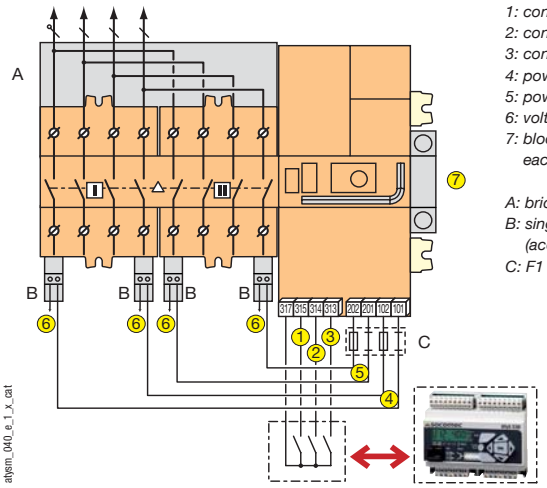
Terminals and connections

Single phase ATyS M 3s



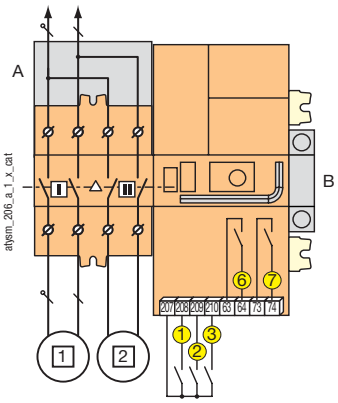
Three-phases ATyS M 3s



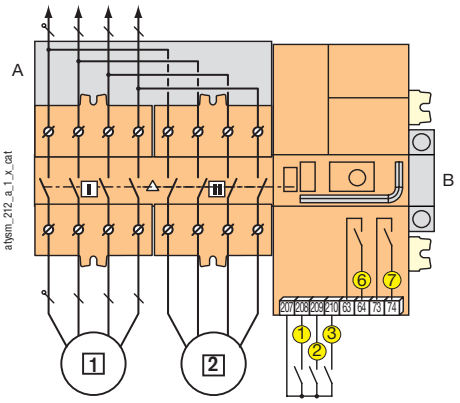
1: control position I
2: control position II
3: control position 0 / C
4: power supply I (230 VAC)
5: power supply II (230 VAC)
6: voltage tap
7: block auxiliary contacts - 1 NO/NC each position I , 0, II (factory fitted)

A: bridging bar (accessories)
B: single phase voltage sensing tap (accessories)
C: F1 / F2 = fuse 10 A gG

Single phase ATyS M 6s



Three-phases ATyS M 6s

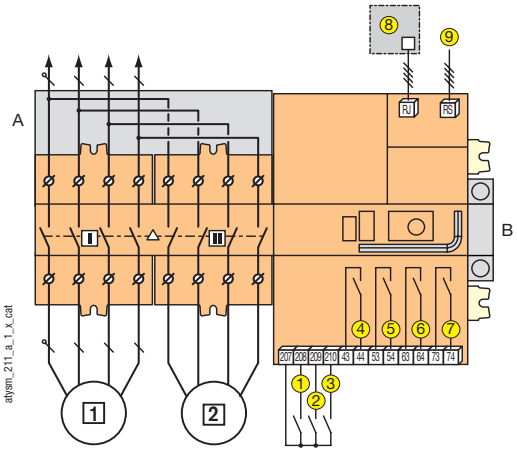


1 preferred source
2 alternate source

1: manual retransfer / priority change
2: charge test
3: automatic mode inhibition
6: relay for product availability
7: genset start / stop relay generating set

A: bridging bar (accessories)
B: block auxiliary contacts - 1 NO/NC each position I, 0, II (factory fitted)

Three-phases ATyS M 6s



1 preferred source
2 alternate source

1: manual retransfer / priority change
2: charge test
3: automatic mode inhibition
6: relay for product availability
7: genset start / stop relay generating set

A: bridging bar (accessories)
B: auxiliary contacts unit - 1 AC per position I, 0, II (accessory)

Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 160 A

Thermal current I_{th} (40°C)		40 A	63 A	80 A	100 A	125 A	160 A
Rated insulation voltage U_i (V) (power circuit)		800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)		6	6	6	6	6	6
Rated insulation voltage U_i (V) (operation circuit)		300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit)		4	4	4	4	4	4
Rated operational currents I_e (A) (IEC 60947-3)							
Rated voltage	Load duty category	A/B(1)	A/B(1)	A/B(1)	A/B(1)	A/B(1)	A/B(1)
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	40/40	63/63	80/80	100/100	125/125	125/160
690 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
690 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	80/80	100/125	100/125
690 VAC	AC-23 A / AC-23 B	40/40	63/63	63/63	80/80	80/80	80/80
Rated operational currents I_e (A) (IEC 60947-6)-1							
Rated voltage	Load duty category	A/B(1)	A/B(1)	A/B(1)	A/B(1)	A/B(1)	A/B(1)
415 VAC	AC-31 A / AC-31 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-32 A / AC-32 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-33 A / AC-33 B	-/40	-/63	-/80	-/80	-/80	-/80
Overload capacity							
Rated short-time withstand current 1 s. I_{cw} (kA rms)		4	4	4	4	4	4
Rated short-circuit making capacity Icm (kA peak)(2)		17	17	17	17	17	17
Prospective short-circuit current (kA rms)(2)		50	50	50	50	50	50
Rating of the associated fuse (A)(2)		40	63	80	100	125	160
Connection							
Minimum connection section		6	6	6	6	6	6
Maximum Cu cable section (mm^2)		70	70	70	70	70	70
Tightening torque (Nm)		5	5	5	5	5	5
Switching time (Standard setting)							
I - 0 or II - 0 (ms)(3)		50	50	50	50	50	50
I - II or II - I (ms)(3)		180	180	180	180	180	180
Duration of "electrical blackout" I - II (ms) minimum (ATyS M 3s)		60	60	60	60	60	60
Duration of "electrical blackout" I - II (ms) minimum (ATyS M 6s or 6e)		90	90	90	90	90	90
Power supply							
Supply 230 VAC mini / maxi (VAC) (ATyS M 3s and ATyS M 6s)		176/288	176/288	176/288	176/288	176/288	176/288
Supply 230 VAC mini / maxi (VAC) (ATyS M 6e)		160/305	160/305	160/305	160/305	160/305	160/305
Control supply power demand							
Nominal power (VA)		6	6	6	6	6	6
Max current under 230 VAC (A) - ATyS M 3s and M 6s		30	30	30	30	30	30
Max current under 230 VAC (A) - ATyS M 6e		20	20	20	20	20	20
Mechanical characteristics							
Endurance (number of operating cycles)		10 000	10 000	10 000	10 000	10 000	10 000
Weight (kg)		3.5	3.5	3.5	3.5	3.5	3.5

(1) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.
(2) For a rated operating voltage U_e = 400 VAC.
(3) Between the order given and reaching of position at U_n (under nominal conditions).

Services & Technical Assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.