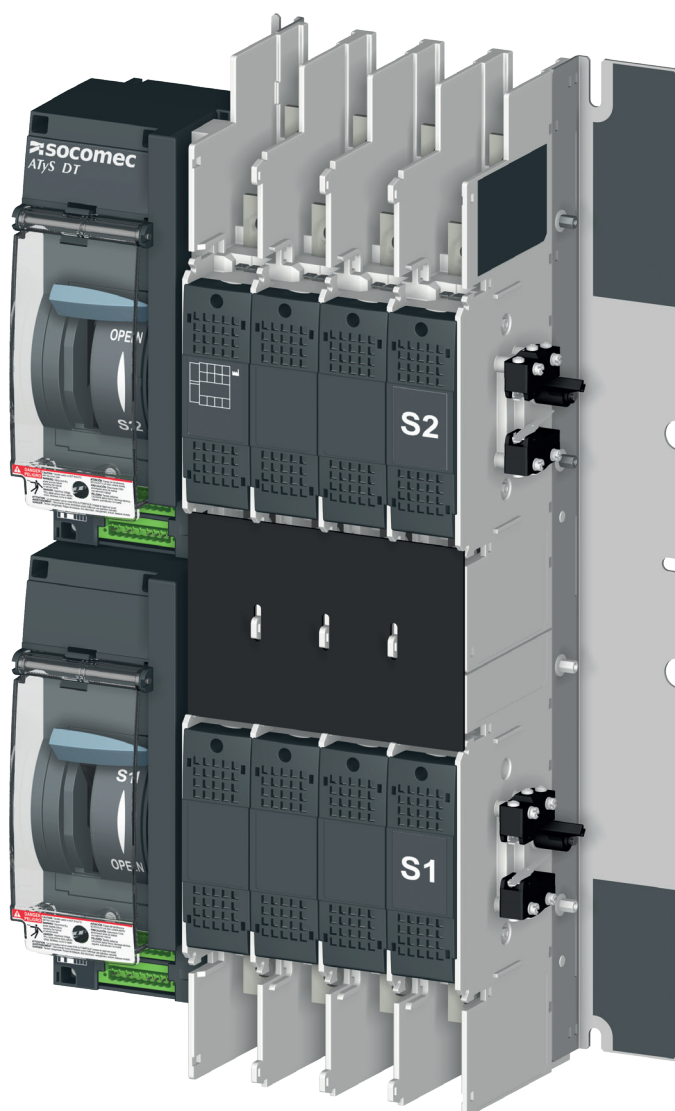
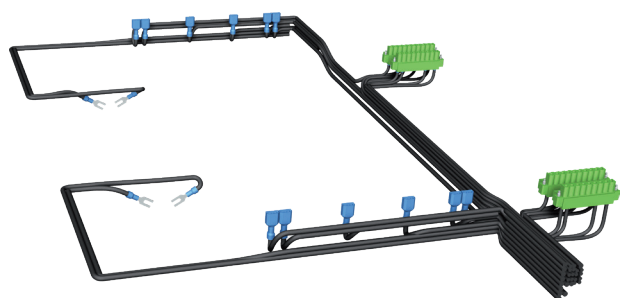


ATyS DT

Delayed transition
UL 1008 Transfer switching equipment



www.socomec.com
To download, brochures,
catalogues and technical manuals.

1. GENERAL SAFETY INSTRUCTIONS	4
2. INTRODUCTION	5
3. QUICK START	6
4. GENERAL OVERVIEW	14
4.1. ATyS DT (delayed transition) switching mechanism	15
4.2. ATyS C66 ATS Controller	16
4.3. ATyS DT Cable Harness	17
4.3.1. Without Transformer connection points	17
4.3.2. With Transformer connection points	18
4.4. Optional accessories	19
4.4.1. Digiware connected devices	20
4.4.2. Auxiliary DC power supply	21
4.4.3. Lugs	21
4.5. Reference configurator	21
4.6. Environmental	22
4.6.1. Operating Conditions	22
4.6.1.1. Temperature	22
4.6.1.2. Hygrometry	22
4.6.1.3. Resistance to impacts	22
4.6.1.4. Altitude	22
4.6.2. Storage	22
4.6.3. ATyS DT Volume and shipping weight by reference	23
4.6.4. Marking	23
5. PRODUCT DIMENSIONS	24
6. MOUNTING INSTRUCTIONS	26
6.1. Installation	26
6.2. Mounting the switching mechanism	27
6.3. Mounting the C66 controller	28
6.3.1. Door Mounting	28
6.3.2. Backplate mounting	29
6.4. Mounting the ATyS DT cable harness	30
6.4.1. Fixing the faston connectors	30
6.4.2. Switch side connectors	32
6.4.3. Controller side connectors	33
6.4.3.1. Connectors with harness	33
6.4.3.2. User available connectors	34
6.4.4. Cable management & enclosure integration	34
6.4.4.1. Switch side cable management	34
6.4.4.2. Controller side cable management	36
6.4.4.3. Enclosure cable management	37
6.5. Mounting optional accessories	38
6.5.1. Terminal shrouds	38
6.5.2. Lugs	39
6.5.3. Extra auxiliary contact and cover	40
6.5.4. I/O 10	42

7. CONFIGURATION45

8. MAINTENANCE.48

8.1. Mechanical manual operations for maintenance purposes48

8.2. Electrical manual operation51

8.3. LOAD TEST and NO LOAD TEST51

8.4. Clearing faults51

8.5. Recommendations for maintenance52

9. TROUBLE SHOOTING53

ANNEX I. SINGLE LINE DIAGRAMS.54

1. GENERAL SAFETY INSTRUCTIONS

- This manual provides instructions on safety, connections and operation of the automatic transfer switching equipment ATYS DT manufactured by SOCOMEC.
- Whether the ATYS is sold as a loose product, as a spare, as an enclosed solution or as any other configuration, this device must always be installed and commissioned by qualified and experienced personnel, in line with the manufacturers recommendations, following good engineering practices and after having read and understood the details in the latest release of the relative product instruction manual.
- Maintenance on the product and any other associated equipment including but not limited to servicing operations must be performed by adequately trained and qualified personnel.
- Each product is shipped with a label or other form of marking including rating and other important specific product information. One must also refer and respect markings on the product prior to installation and commissioning for values and limits specific to that product.
- Using the product outside the intended scope, outside SOCOMEC recommendations or outside the specified ratings and limits can cause personal injury, death and/or damage to equipment.
- This instruction manual must be made accessible to be easily available to anyone who may need to read it in relation to the use, installation or maintenance of the ATYS.
- The ATYS meets the requirement for the harmonized ANCE, CSA and UL standards for transfer switching equipment; the product includes the labels and marking with details on each standard.
- No covers on the ATYS should be opened (with or without voltage) as there may still be dangerous voltages inside the product such as those from external circuits.
- **Do not handle any control or power cables connected to the ATYS when voltages may be present on the product directly through the mains or indirectly through external circuits.**
- Voltages associated with this product may cause injury, electric shock, burns or death. Prior to carrying out any maintenance or other intervention on live parts or any other parts in the vicinity of the exposed live parts, ensure that the switch including all control and associated circuits are de-energized

 DANGER	 WARNING	 CAUTION
RISK: Electric shock, burns, death	RISK: Possible personal injury	RISK: Equipment damage

The ATYS DT complies with the following international standards:
- UL 1008 – Emergency Systems

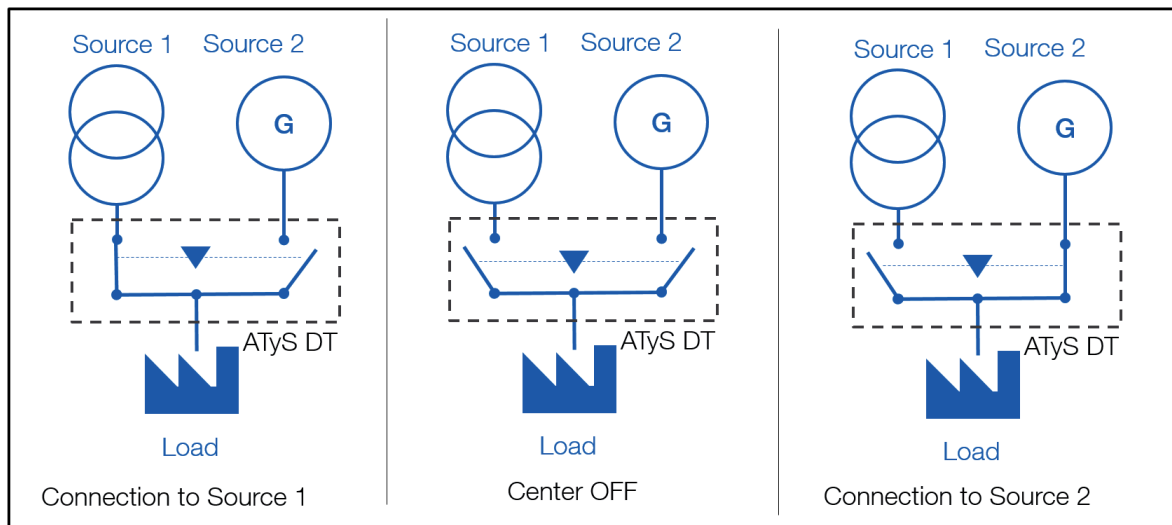
Refer to the specific references numbers on this document to order the correct UL 1008 products and associated accessories.

The information provided in this instruction manual is subject to change without notice, remains for general information only and is non-contractual.

**WARNING ! This product can expose you to chemicals including bisphenol A, which is known to the State of California to cause birth defects. For more information go to : www.P65Warnings.ca.gov**

2. INTRODUCTION

ATYS DT (Delayed transition) are open type, automatic transfer switches with center off position listed to UL 1008 for standby, legally required and emergency systems. They are designed specifically for use in low voltage power applications for the safe transfer of a load supply between a normal and an alternate source.



These automatic transfer switches are designed to meet NFPA 110 requirements for NFPA 110 for Emergency and Standby Power systems and the National Electrical Code (NEC) Articles 700, 701 and 702.

ATyS transfer switching equipment ensures:

- A safe transfer between a normal and alternate source
- A complete product and tested solution
- Intuitive and simple for local operation
- Inherent failsafe mechanical interlocks
- Quick easy and safe “off load” manual operation
- A mechanical inhibit of the motor/coils when the product is in manual operation
- Auxiliary contacts to indicate if the product is not in AUTO Mode (Manual Mode)
- Straightforward installation with effective ergonomics
- Simple and secure control interface
- Easy mounting and smart configuration
- Accessories to suit specific requirements
- Integrated and fully rated solid neutral within the 4th pole
- Suitable for up to NEMA 3R, 12 protection degree (once mounted)

Glossary:

ATS: Automatic Transfer Switch

FT: Fast Transfer

DT: Delayed Transition

SCPD: Short Circuit Protection Device

CT: Current Transformer

VT: Voltage Transformer

GND: Ground

I/O: Inputs/Outputs

RTC: Real Time Clock

ECS: Easy Config System

CTT: Contact transfer time

Center OFF: Load is disconnected from source 1 & source 2

S1: Source 1

S2: Source 2

3. QUICK START

socomec
Innovative Power Solutions



ATyS DT

100 A, 200 A, 260 A, 400 A

Preliminary operations

Check the following upon delivery and after removal of the packaging:

- Packaging and contents are in good condition.
- The product reference corresponds to the order.
- Contents should include:
Qty 1 x ATyS DT
Qty 1 x C66 Controller
Qty 1 x Harness

Warning

- ⚠ Risk of electrocution, burns or injury to persons and / or damage to equipment.
This Quick Start is intended for personnel trained in the installation and commissioning of this product. For further details refer to the product instruction manual available on the SOCOMECS website.
- This product must always be installed and commissioned by qualified and approved personnel.
- Maintenance and servicing operations should be performed by trained and authorized personnel.
- Do not handle any control or power cables connected to the product when voltage may be, or may become present on the product, directly through the mains or indirectly through external circuits.
- Always use an appropriate voltage detection device to confirm the absence of voltage.
- Ensure that no metal objects are allowed to fall in the cabinet (risk of electrical arcing).

Failure to observe good engineering practices as well as to follow these safety instructions may expose the user and others to serious injury or death.

- ⚠ Risk of damaging the device.
In case the product is dropped or damaged in any way it is recommended to replace the complete product. Installation standards must be respected.

Accessories

Accessories are not included and must be ordered separately

- Terminal shrouds (see step 6A).
- Additional aux contacts (ref. 96990021).
- Digiware I/O 10 (ref. 48290140).
- Transformer 480 - 240 VAC (SPARTAN SP350MQMJ).
- Controller 24 VDC aux power supply (6W minimum type SELV) mandatory with I/O 10 Modules.
- Power terminal lugs (see step 1D).

For further details refer to the product instruction manual under chapter "Spares and Accessories".

Spares

- ATyS C66 Controller (ref. 16000066).
- UL 1008 ATyS DT (ref. 980XXXXX).
- Connector kit (ref. 16090002).
- Controller Nema 3R gasket (ref. 16090001).
- Controller mounting screws (ref. 16090004).
- Controller mounting feet (ref. 16090005).
- Cable harness without transformer (ref. 98974000).
- Cable harness with transformer (ref. 98974000).

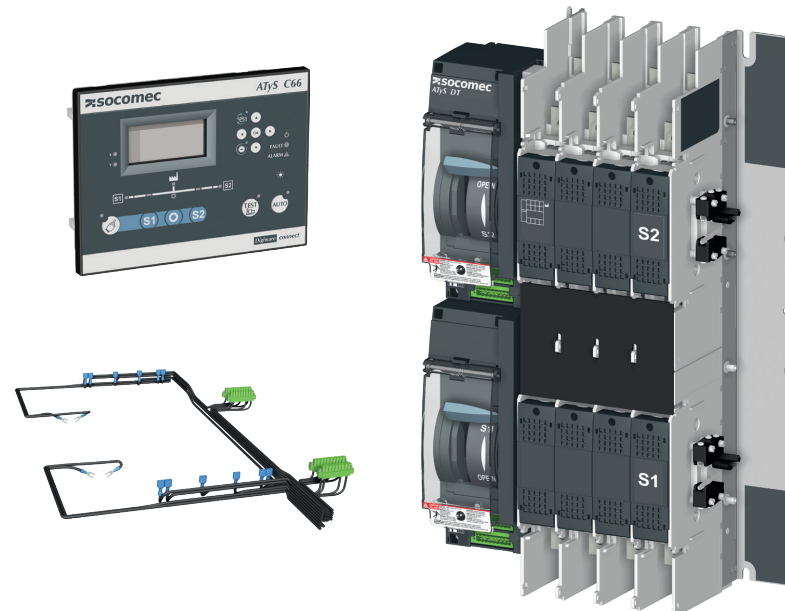


CORPORATE HQ CONTACT:
SOCOMECS SAS,
1-4 RUE DE WESTHOUSE,
67235 BENFELD, FRANCE
www.socomec.com
To download brochures,
catalogues and technical manuals:
www.socomec.us/resources/

QUICK START GUIDE EN

Installation and Commissioning

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
Cabinet / Back Plate Installation	Connecting the cable harness	Controller interface	Operational limits	Manual operation	Accessories



Reference configurator

N° of poles
3: 3P
4: 4P

Rating
010: 100 A
020: 200 A
026: 260 A
040: 400 A

9 8 X X X XXX

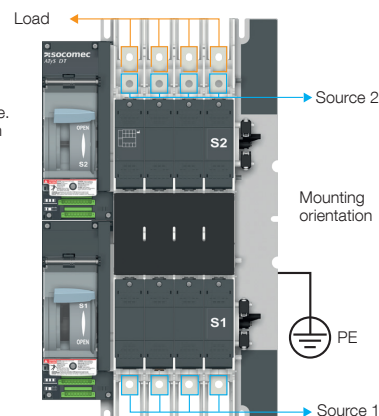
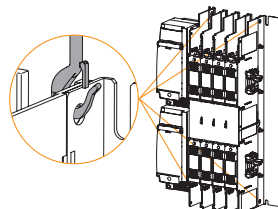
0: spare switch for networks up to 480 VAC
8: ATSE assembly for 480 V.a.c 3 wire network
A: ATSE Assembly for networks up to 480 VAC

0: Without solid neutral
1: With solid neutral

1A Switch installation



Ensure that the product is installed on a flat rigid surface of a Types 1, 3R, 12 and/or 12k enclosure. Do not lift using power contacts, use the holes on the side of the metal mounting feet.



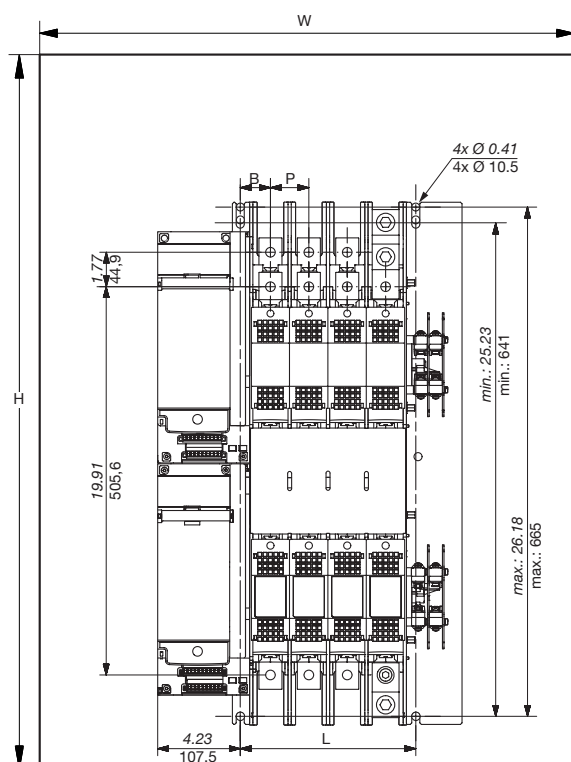
Non contractual document. Subject to change without notice.

1B Product dimensions

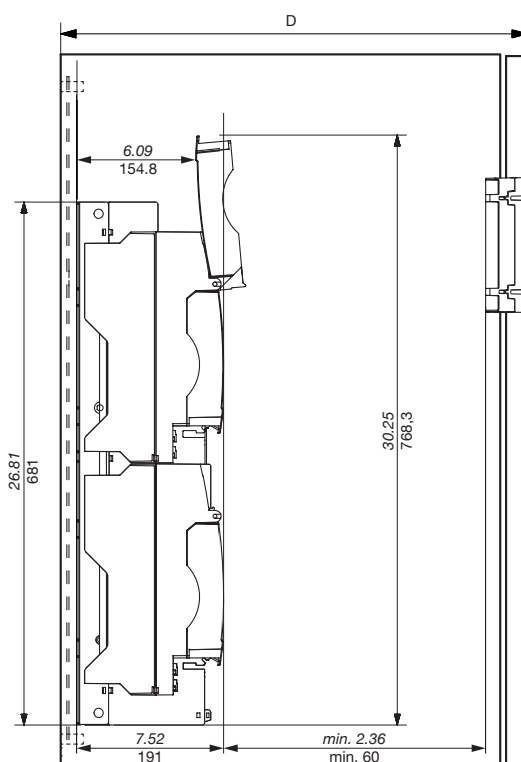
Switch & minimum enclosure size dimensions (4th pole represented with lugs installed.)

Dual Dimensions
in/mm

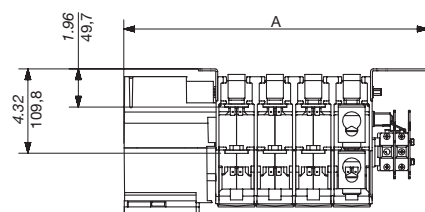
Front view



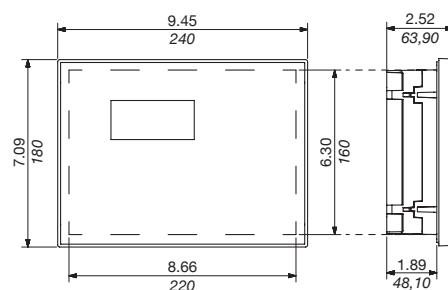
Side view



Switch top view



Controller dimensions

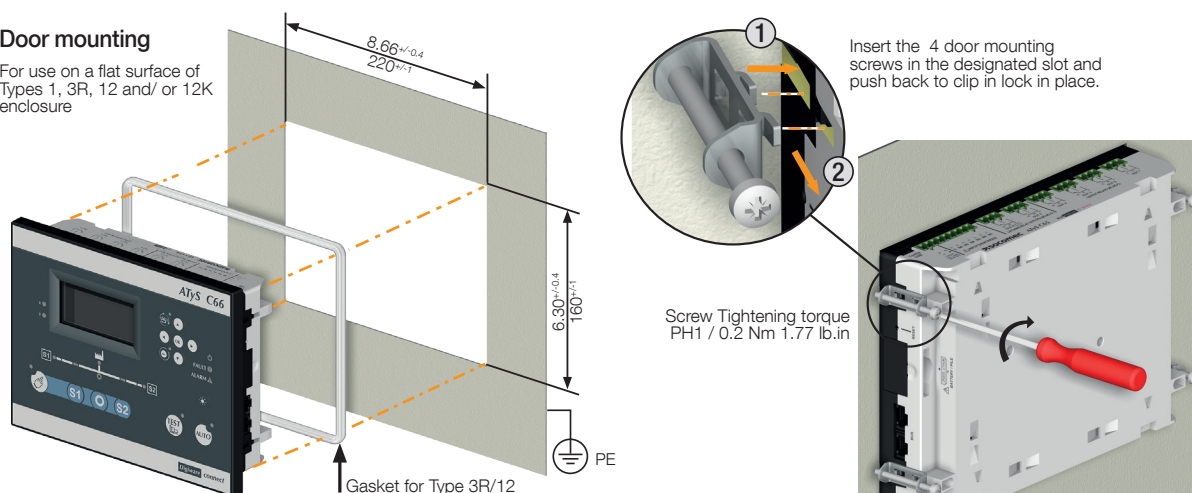


		SWITCH DIMENSIONS								MINIMUM ENCLOSURE SIZE					
		A		B		L		P		H		W		D	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100-200A	3P	11.85	301,30	1.25	31,80	5.49	133,70	1.38	35	36	915	16	406	12	305
	3P+N/ 4P	13.24	336,30	1.25	31,80	6.60	168,70	1.38	35	36	915	16	406	12	305
260-400A	3P	13.63	346,30	1.55	39,30	7	178,60	1.97	50	60	1524	24	610	12	305
	3P+N/ 4P	15.60	396,30	1.55	39,30	8.97	228,60	1.97	50	60	1524	24	610	12	305

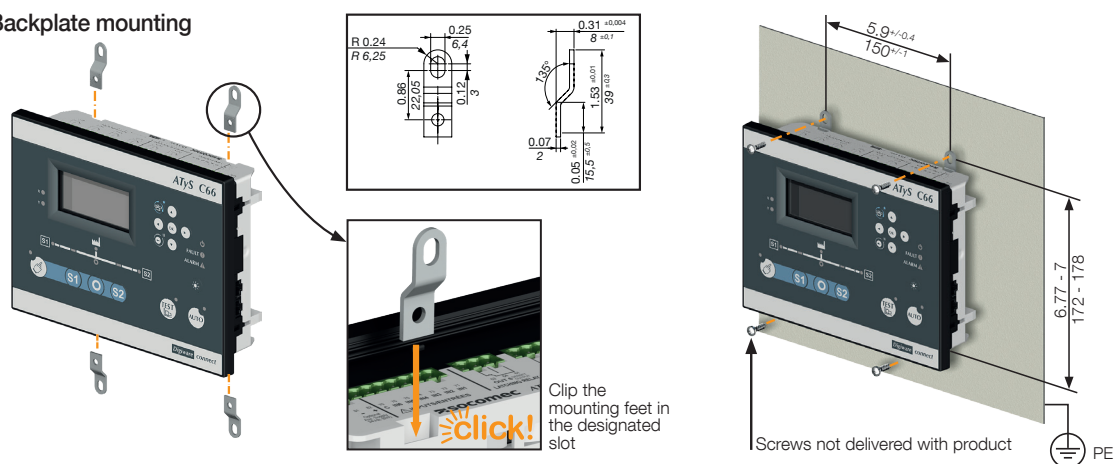
1C Mounting & connecting controller

Door mounting

For use on a flat surface of Types 1, 3R, 12 and/or 12K enclosure



Backplate mounting

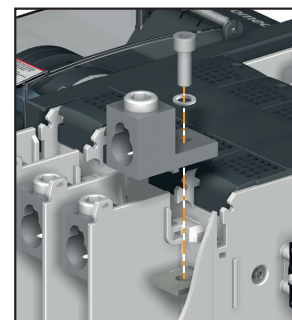


1D Installing terminal lugs (optional accessory)

Use terminal screws and washers supplied with the ATSE

Product Rating (A)	Designation	Ref. lugs	Quantity per reference	Openings per lug	Size / Section (AWG)		Pressure screw torque			Bolt torque			in	
					min.	max.	lb.in	Nm	Size in	lb.in	Nm	Size	in	mm
100A	IlSCO D0957	Contact us		1	14	1/0	50	5,65	8	70.8	8	5mm	0.625	15,9
200A	IlSCO D2831	Contact us		1	6	250 KCMIL	275	31,1	5/16	70.8	8	5mm	1	25,4
100-200 A	CMC LA-300R	39542020	2	1	6	300 KCMIL	275	31,1	5/16	70.8	8	5mm	1.12	28,4
		39543020	3											
260-400 A	CMC LA-630R	39542040	2	1	4	600 KCMIL	550	62,1	1/2	310	35	8mm	1.79	45,7
		39543040	3											
260-400 A	IlSCO D3096	Contact us		1	4	600 KCMIL	600	67,8	1/2	310	35	8mm	1.79	45,7

Power cable connections : For 100A use 1/0 AWG / For 200A use 250 KCMIL / For 260A use 300 Kcmil / For 400A use 600 Kcmil copper cables.



2A Mounting & connecting the cable harness

For details on the cable harness wiring diagram and integration see Cable harness Quickstart guide ref 551401.

Cable harness without transformer (ref. 98964000) delivered with 98AX XXXX products.

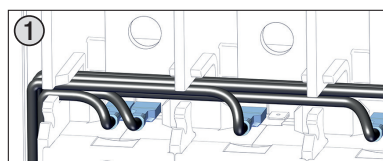
Cable harness for connections with transformer (ref. 98974000) delivered with 988X XXXX products.

Note: transformers not delivered with the product.

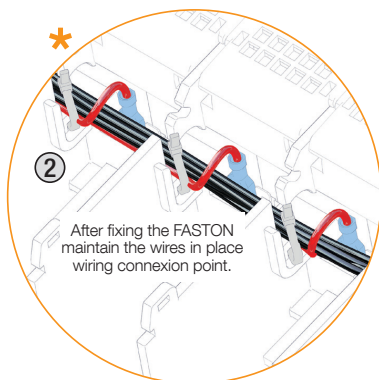
2B Mounting the cable harness on the Switch

SWITCH	TYPE	TERMINAL N°	DESCRIPTION	CHARACTERISTICS	RECOMENDED CROSS SECTION
S1	Switch Power input	1101-1102	Order switch to position S1	194-304 VAC8A for at least 100ms 50/60Hz	17-14 AWG 1-2.5 mm²
		1201-1202	Order switch to OPEN Switch S1		
	Switch Signalization output	1333-1334	Contact closed if cover of switch S1 is closed	internal use for C66 controller	
		1313-1314	Contact closed if the switch is in position S1		
		1323-1324	Contact closed if the switch S1 is OPEN		
S2	Switch Power input	2101-2102	Order switch to OPEN S2	194-304 VAC8A for at least 100ms 50/60Hz	
		2201-2202	Order switch to position S2		
	Switch Signalization output	2333-2334	Contact closed if cover of switch S2 is closed	internal use for ATyS C66 controller	
		2313-2314	Contact closed if the switch S2 is OPEN		
		2323-2324	Contact closed if the switch is in position S2		

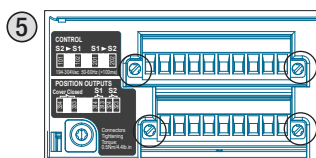
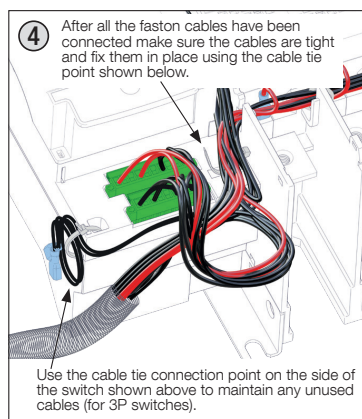
⚠ Wires must not be in contact with active voltage points such as unused FASTON connections and lugs. In order to do so any unused or loose cables must be tensed then fixed on a non conductive part of the transfer switch (use cable tie fixation points as shown in the images below).



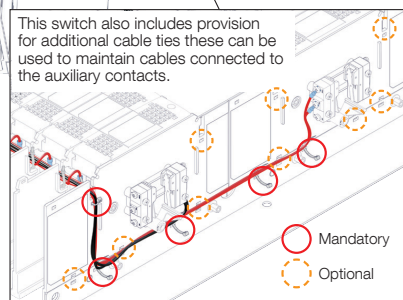
Fix FASTON connectors according to the table in step 2C.
(Max 2 FASTON per pole).



3 Pass wiring harness in the integrated cable duct.



○ Connector tightening torque
0.5 N.m / 4.4 Lb.in



See step 6B for Auxiliary contacts

POSITION	CONNECTION
S2	1B1 3B1 2B1 C NO NC
OPEN	Reserved I 1D1 3D1 2D1 C NO NC
OPEN	1C1 3C1 2C1 C NO NC Reserved I
S1	1A1 3A1 2A1 C NO NC

This switch also includes provision for additional cable ties these can be used to maintain cables connected to the auxiliary contacts.

2C Connection of harness on the switch

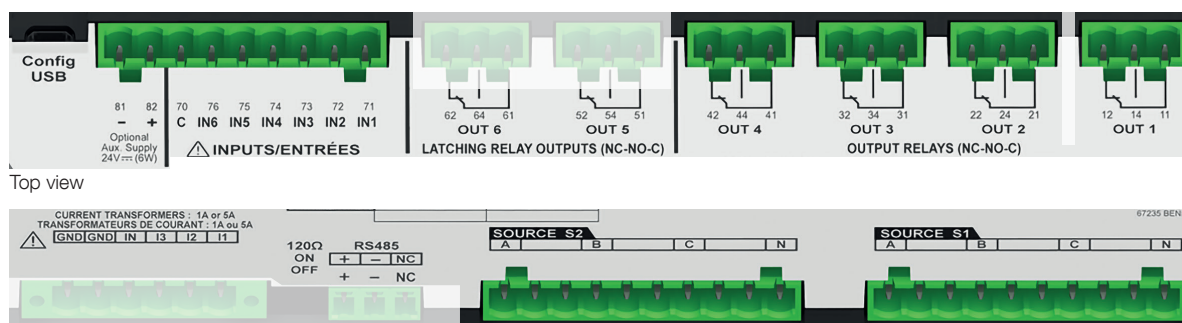
Connect the faston on the switch connexion according to your network and the table below:

NETWORK TYPE	TYPE	SOURCE	RTSE FASTON CONNECTIONS				AUXILIARY CONTACT				VOLTAGE TRANSFORMER			
											480 VAC		240 VAC	
			A	B	C	N	1C1	3C1	1D1	3D1	H1	H4	X1	X4
120/208 VAC	3P+N / 4P	S2	S2A & 2201	S2B	S2C	S2N			1D1	3D1				
		S1	S1A & 1102	S1B	S1C	S1N	1C1	3C1						
208 VAC	3P	S2	S2A & 2201	S2B	S2C	- (1)			1D1	3D1				
		S1	S1A & 1102	S1B	S1C	- (1)	1C1	3C1						
277/480 VAC	3P+N / 4P	S2	S2A	S2B	S2C	S2N & 2201			1D1	3D1				
		S1	S1A	S1B	S1C	S1N & 1102	1C1	3C1						
480 VAC + Transformer	3P	S2	2xS2A	2xS2B	S2C	-			1D1	3D1	T2A	T2B	T2A'	T2B'
		S1	2xS1A	2xS1B	S1C	-	1C1	3C1			T1A	T1B	T1A'	T1B'

(1) Cables which are not used are to be fastened as shown in image 4 of step 2B.

2D Controller connection details

Wiring harness connectors to place on controller.



Bottom view

TYPE	TERMINAL N°	DESCRIPTION	CHARACTERISTICS	RECOMENDED CROSS SECTION	TIGHTENING TORQUE
Sensing source 1	SOURCE 1 L1/L2/L3/N	Voltage sensing inputs source 1 & voltage supply (L1-L2)	Sensing voltage 50 - 575 V.a.c P-P - 50/60 Hz (+/- 10%) Supply voltage (L1-L2) 88 - 576 V.a.c - 50/60Hz (+/- 10%) Uti 600V	AWG 18-14 0.75-2.5mm²	4.4-5.3 Lb.in 0.5-0.6 Nm
Sensing source 2	SOURCE 2 L1/L2/L3/N	Voltage sensing inputs source 2 & voltage supply (L1-L2)			
Inputs	71	IN1: reserved (SWITCH IN POS1)	Do not connect to any external power supply	AWG 20-14 0.5-2.5mm²	
	72	IN2: reserved (SWITCH IN POS2)			
	73	IN3: reserved (SWITCH S1 IN POS0)			
	74	IN4: reserved (SWITCH S2 IN POS0)			
	75	IN5: reserved (COVER OPEN)**			
	76	IN6: programmable input			
	70	Common point for inputs			
Aux power supply	81/82	- : negative terminal for aux supply +: positive terminal of aux supply	12-24 Vd.c.		
Outputs	12/14/11	OUT1: reserved (POS 1 ORDER)	Dry contacts 8A / 277 VAC 50/60 Hz 5A / 24 VDC	AWG 16-14 1.5-2.5mm²	
	22/24/21	OUT2: reserved (POS 2 ORDER)			
	32/34/31	OUT3: reserved (POS 0 ORDER S1)			
	42/44/41	OUT4: reserved (POS 0 ORDER S2)			
Latching relays	52/54/51	OUT 5: elevator control			
	62/64/61	OUT 6: genset start relay			
Current transformers	IN13/12/11	CT neutral / CT phase C / CT phase B / CT phase A	CT input 1A or 5A		
Serial connection	RS485	Connection RS485 -: negative terminal of RS485 bus +: positive terminal of RS485 bus NC : Ground	RS485 bus insulated	LYCY shielded twisted pair 30-14 AWG / 0.14 to 1.5 mm²	1.9 - 2.2 Lb.in 0,22 - 0,25 Nm
Digiware*	DIGIBUS	Connection point for I/O 10 optional accessories (must use 24 VDC input)	RJ 45 digiware cable	-	-

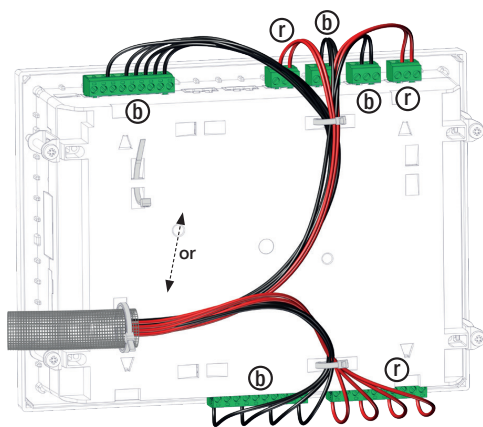
* For more information check I/O module instruction sheet ref 545597.

** After wizard configuration "COVER OPEN" will not be programmed by default, users must go to "MAIN MENU">"PARAMETERS">"I/O">"INPUTS" and configure "INPUT 5" to "COVER OPEN" and "INPUT 5 TYPE" to "NC".

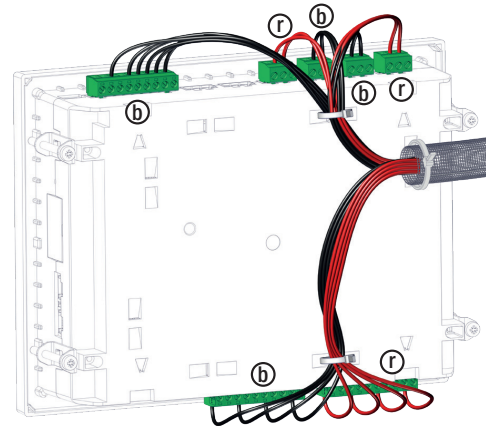
2E Mounting the cable harness on the controller

For details on the controller connectors refer to step 2D, after inserting the required connectors use the cable tie connection points shown below to maintain the cables in place:

Left side hinge door

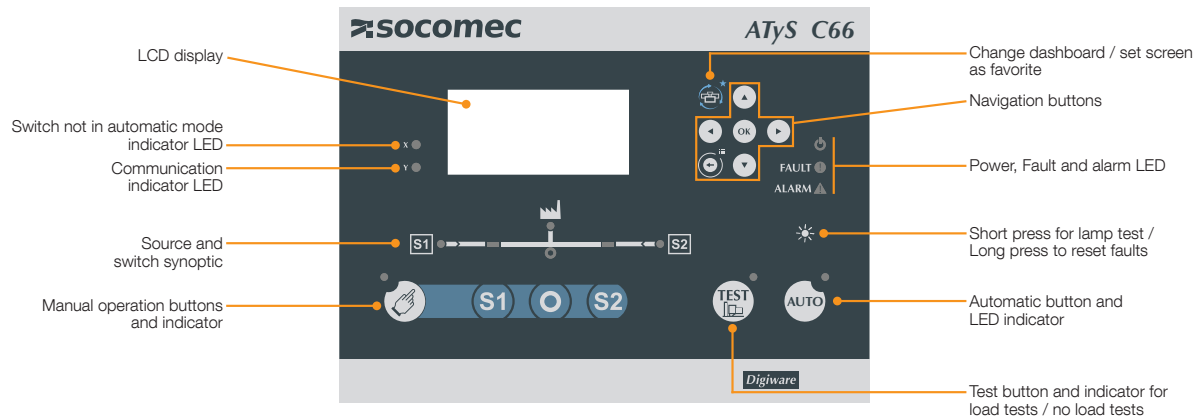


Right side hinge door



(b) black cables
(r) red cables

3 Controller Interface



Standard code for programming : 1000

SMART WIZARD CONFIG:

When powered for the first time the controller will prompt the user to configure using the wizard. To access the wizard input code 1000 then the configuration will go as follow:



For advanced configuration go to parameters menu.

⚠ In STEP 5/8 of the wizard config make sure the network detected matches your network.
In STEP 6/8 make sure the "switch technology" parameter is set to "ATyS DT".

⚠ If a fault is shown on the controller, correct the associated fault and clear by doing a long press (>3s) on the lamp test button.

4 Operational limits

OPERATING VOLTAGE @ 50/60 (+/- 10%) HZ		
NETWORK	MINIMUM COIL OPERATING VOLTAGE (VAC)	MAXIMUM COIL OPERATING VOLTAGE (VAC)
277/480 VAC	194 (Ph/N)	304 (Ph/N)
120/208 VAC	194 (Ph/Ph)	304 (Ph/Ph)
120/240 VAC	194 (Ph/Ph)	304 (Ph/Ph)
480 VAC with transformer	194 (Ph/N)	304 (Ph/N)

OPERATING TEMPERATURE		
SWITCH AND TRANSFORMER	I/O /10	CONTROLLER
32 to 131°F 0 to +55°C	14 to 158°F -10 to +70°C	-22 to 158°F -30 to +70°C with limitation on the LCD screen that may show distortion below 32°F / 0°C

OPERATING TIMES ⁽¹⁾					
RATING	TRANSFER DESCRIPTION	MINIMUM TRANSFER TIME (ms) (NORMAL TO ALTERNATE)	MINIMUM TRANSFER TIME (ms) (ALTERNATE TO NORMAL)	MAXIMUM TRANSFER TIME (ms) (NORMAL TO ALTERNATE)	MAXIMUM TRANSFER TIME (ms) (ALTERNATE TO NORMAL)
100-200 A	Contact transfer time ⁽²⁾	48	41	61	54
	Total transfer time ⁽³⁾	144	321	198	553
260-400 A	Contact transfer time ⁽²⁾	60	54	90	64
	Total transfer time ⁽³⁾	156	333	226	563

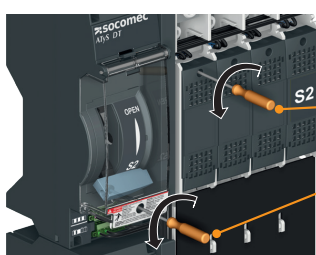
(1) All times measured without load and at 240 VAC at ambient temperature, actual times may vary depending on network and load.

(2) Time for which load is disconnected from both source 1 and source 2 with both sources available.

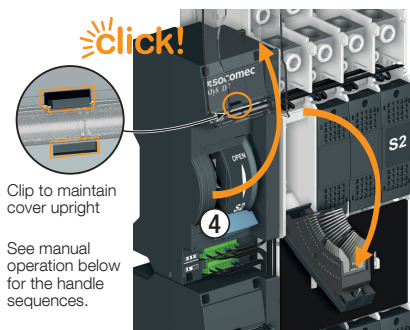
(3) Total time to transfer including detection of source total failure and transfer times.

5 Manual operation (for maintenance purposes only) Instructions for manual, non-electric, offload operations for service

WARNING More than one live circuit! Disconnect all sources of supply before servicing and/or before using the manual operation.



A Unscrew handle cover and arc chutes cover



B Open the cover and click in place and open the arc chute

Operation order

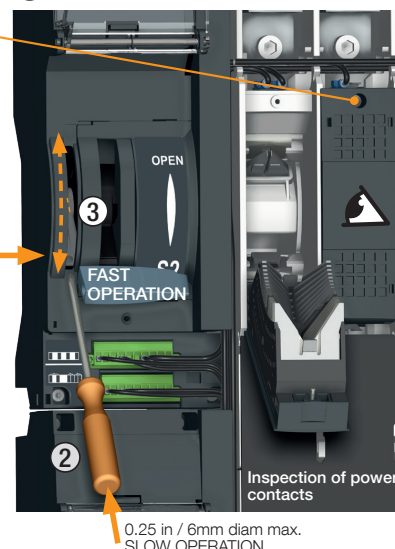
A → B → C

After maintenance operations are done screw back the covers:
Tightening torque
17.7 lb.in / 2 N.m / PH2

WARNING Switch will be "not in auto" when either one of the covers are open.

For inspection use a standard tool as shown to operate (not included).

C Use the slow or fast handle to visualize the state of the contacts



Recommendation : carry out one offload manual operation with handle ④ (FAST OPERATION) before putting the switch back in service.

Reverse the procedure to close. Ensure that all is closed properly before putting back in service. In case any part of the ATyS DT switch is found to be damaged in any way, replace the complete switch.

Manual operation

Connecting to source 2:
To connect the load to Source 2 (S2) position both handle to the bottom position (top handle to S2, bottom handle to OPEN).

Connecting to source 1:
To connect the load to Source 1 (S1) position both handle towards the top (top handle to OPEN, bottom handle to S1).

Connecting to center OFF:
To connect the load to center off (OPEN) position the top switch handle to the top position and the bottom switch handle to the bottom position.



Interlocking mechanism:
The mechanical interlock ensures that S1 and S2 are mutually exclusive and inhibits one switch from being closed unless the other switch is open.

Warning: when manually switching always place one of the two handles in the OPEN position BEFORE switching the second handle.

6A Installing power terminal shrouds (optional accessories)

Top and bottom protection against direct contact with terminals or connecting parts

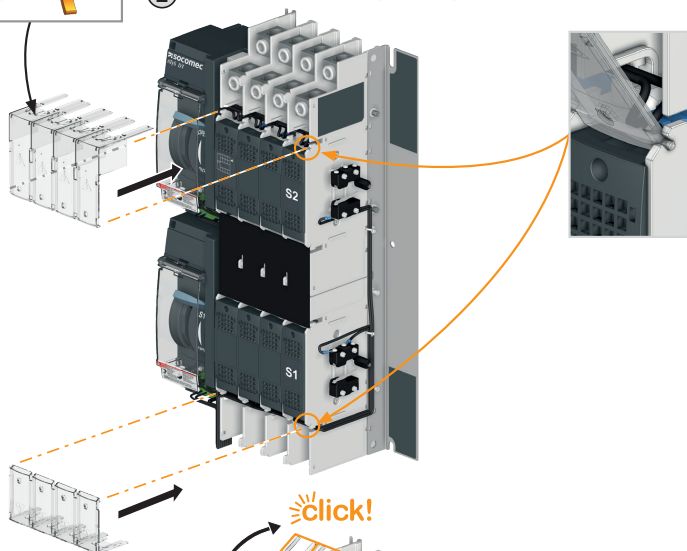


- ① For 250, 300 & 600 KCMIL (200, 260 400A) break off all removable parts (highlighted on the picture). For 1/0 & (100A) do not remove any parts.

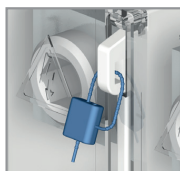
	NO. OF POLES	REFERENCE*
100-200A	3P	96983020
	4P/3P+N	96984020
260-400A	3P	96983040
	4P/3P+N	96984040

* Refs: top and bottom

- ② Fix the terminal shrouds in place and push back

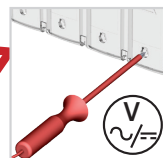


- ③ Push back to click in place.



Terminal shrouds can be locked in place using locking points

Terminal shrouds contain provisions for voltage sensing



PERIODIC MAINTENANCE

The ATyS DT shall be maintained in accordance with industry standards and as per instructions in the ATyS DT instruction sheet.

As per NFPA 110 requirements for emergency and standby power systems the ATyS DT should be inspected and should be exercised under load at least monthly.

Refer to step 5 for instructions for manual, "non-electric", offload operations for service.



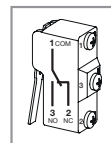
WARNING

More than one live circuit.
Disconnect all sources of supply before servicing and/or before using the manual operation.

Print: 90 g/m² - open format 432 x 279 mm - folded 216 x 279 mm with staples - R/V - B&W

6B Additional auxiliary contacts

The ATyS DT switch has 4 pre-installed auxiliary contacts, two of which are reserved for use for harness. This kit includes two additional contacts it is therefore recommended to order two sets of this kit for ATyS DT switches.

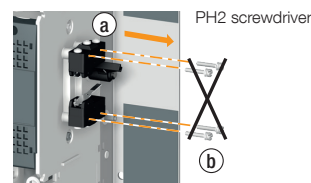


Terminal tightening torque
7.9 lb.in / 0.9 Nm

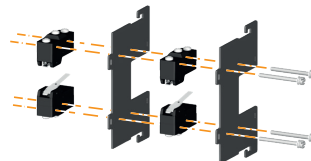
AUXILIARY CONTACT ELECTRICAL CHARACTERISTICS	
Rated current (125-480 VAC)	22 A
Rated current (125 VDC)	0.5A
Rated current (250 VDC)	0.25 A
Rated horse power up to 250 VAC	½ HP
Rated horse power up to 480 VAC	¼ HP
Recommended wire section for 22A	10 AWG 4 mm ²

⚠ Use the correct protection according to your auxiliary contact circuit and your load

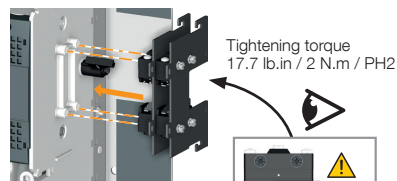
- ① Remove pre-installed auxiliary contact



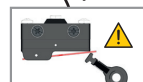
- ② Assemble contacts with parts from kit as shown below



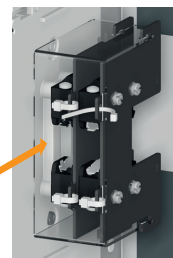
- ③ Assemble optional aux contact and pre-installed aux contact together



Tightening torque
17.7 lb.in / 2 N.m / PH2



Make sure contact is correctly activated



- ④ Place the transparent plastic piece to cover the auxiliary contacts and lock in place in order to protect from direct contacts.

Ref : 96990021

4. GENERAL OVERVIEW

The Open Type ATYS DT include:

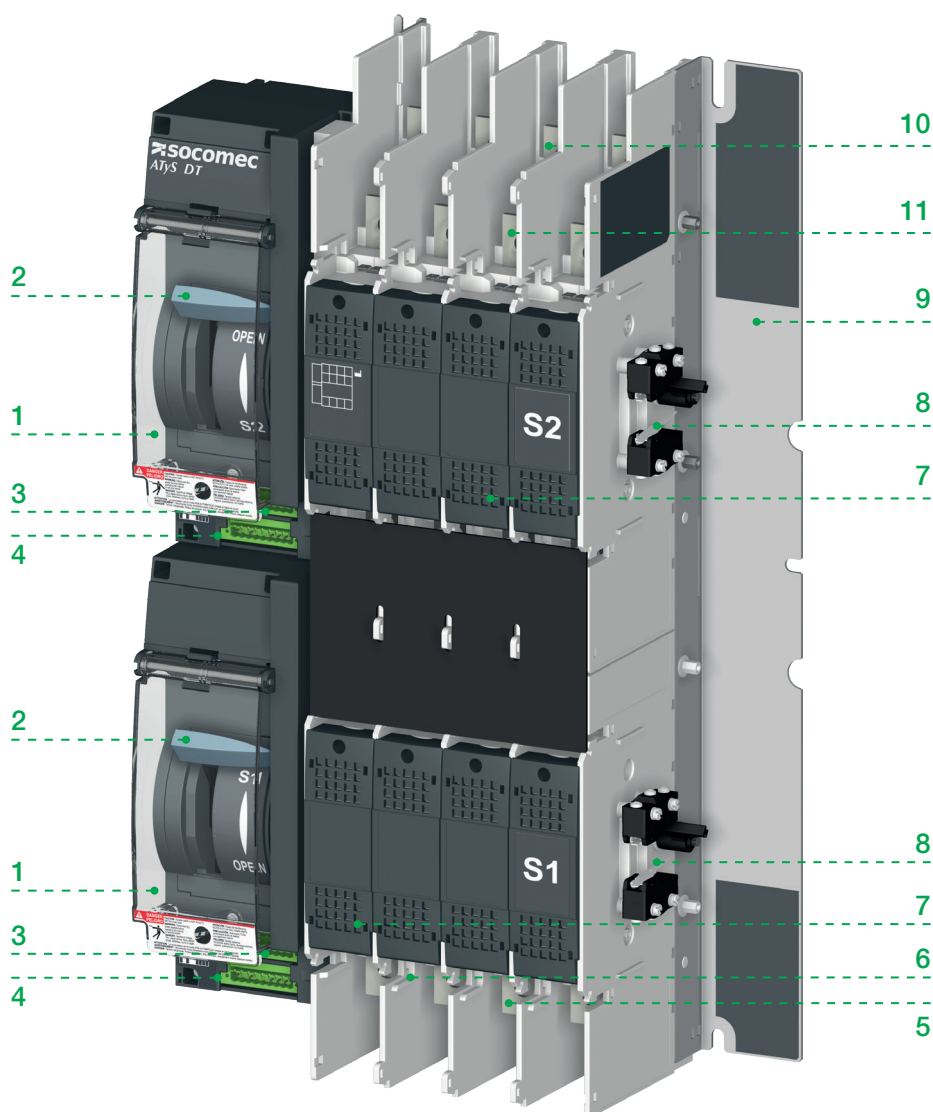
- 1 transfer switch (delayed transition)
- 1 set of terminal connection screws
- 1 ATyS C66 ATS controller
- 1 ATyS C66 NEMA 3R gasket
- 1 ATyS C66 door mounting kit
- 1 ATyS C66 back plate mounting kit
- 1 Connector kit for C66 controller
- 1 Cable harness for connections between the switch and the controller
- 20 Cable ties for harness fixation points
- 1 Quickstart guide

All other components described in this instruction sheet are accessories and are sold separately.

If any components are missing from the list described above contact your local Socomec representative.

4.1. ATyS DT (delayed transition) switching mechanism

The ATyS DT enables connection from the load to one of two sources and integrates a center off position in which neither of the two sources are connected to the load.



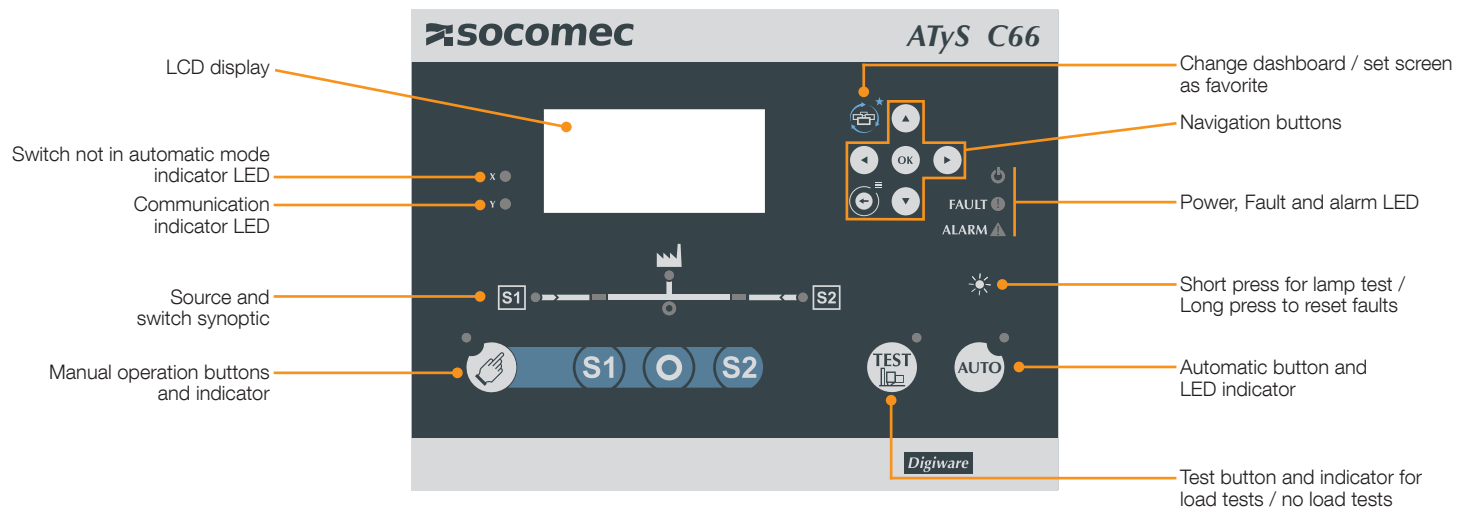
1. Plastic cover for off load manual operation
2. Manual handle for off load operations
3. Input connector
4. Output connector
5. Source 1 power terminals
6. Source 1 faston voltage sensing terminals
7. Hinged arc chamber for easy inspection of the power contacts
8. Position auxiliary contacts (NO / NC)
9. Back-plate mounting legs
10. Load side power terminals
11. Source 2 supply power terminals

4.2. ATyS C66 ATS Controller

The ATyS C66 controller is an ATS controller designed to function as an emergency system automatic transfer switch when used with the ATyS FT and ATyS DT switching mechanism.

In this instruction manual we will go over the basic settings for the association of the ATyS C66 with the ATyS DT switch, for more information on the detailed configuration of the C66 download the following instruction sheet :

https://www.socomec.us/wp-content/uploads/2020/04/ATYS-C66-INSTRUCTION-MANUAL_INSTRUCTION-MANUAL_2020-02_549868_EN-USA.pdf



4.3. ATyS DT Cable Harness

The ATyS DT is delivered with a wiring harness, which includes all connections points for sensing, supply voltage to the coils and controller, and input/outputs from the switch mechanism to the controller.

Cable harnesses are in compliance with pollution degree III.

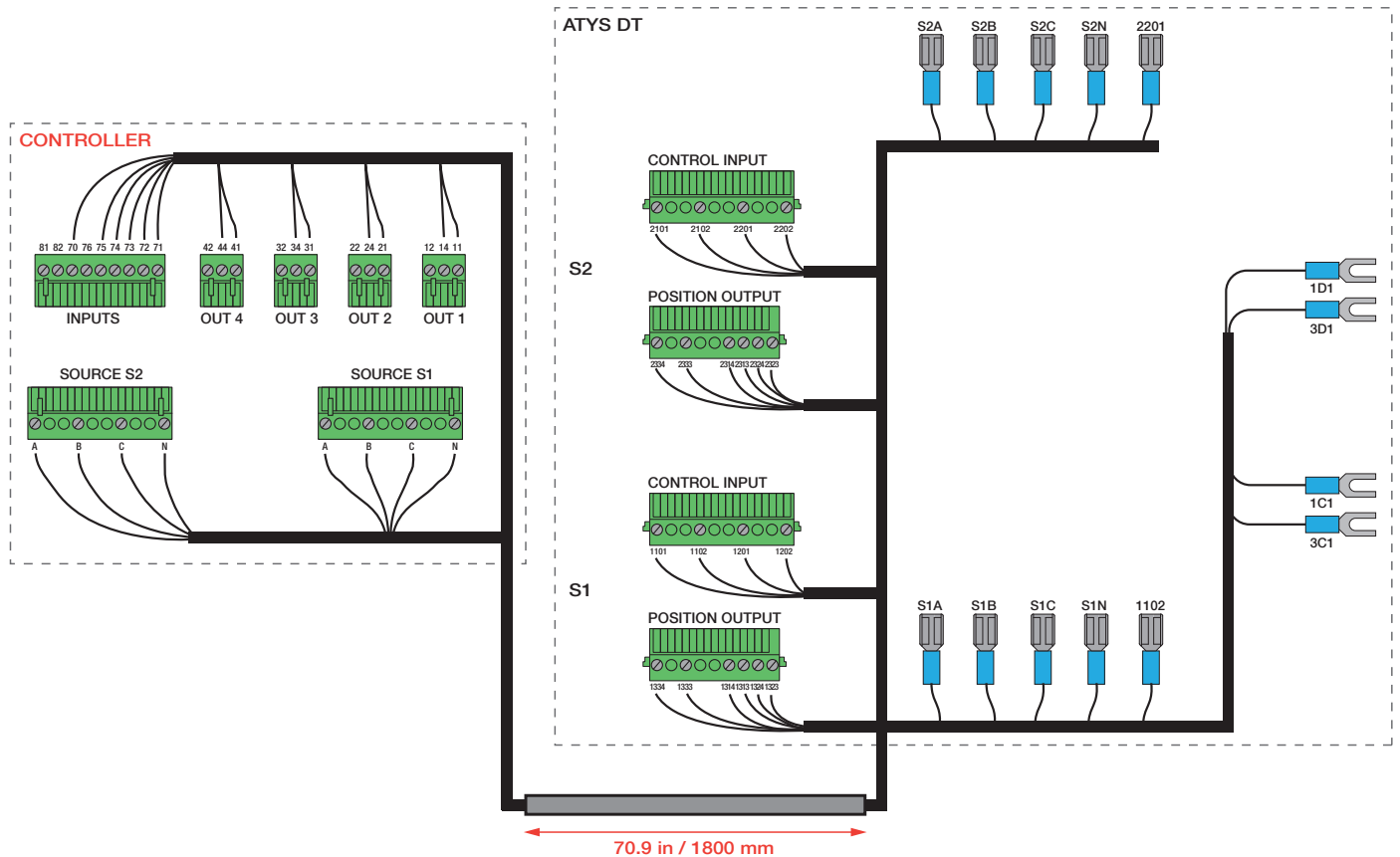
Wires are stranded copper wires rated up to 600/347 V.a.c, Max. 7A, 18 AWG (0.75 mm²) cross section.

There are two different ATyS DT cable harnesses:

4.3.1. Without Transformer connection points

Ref: 9896 4000 for use with ATyS DT **ref: 98AX XXXX**

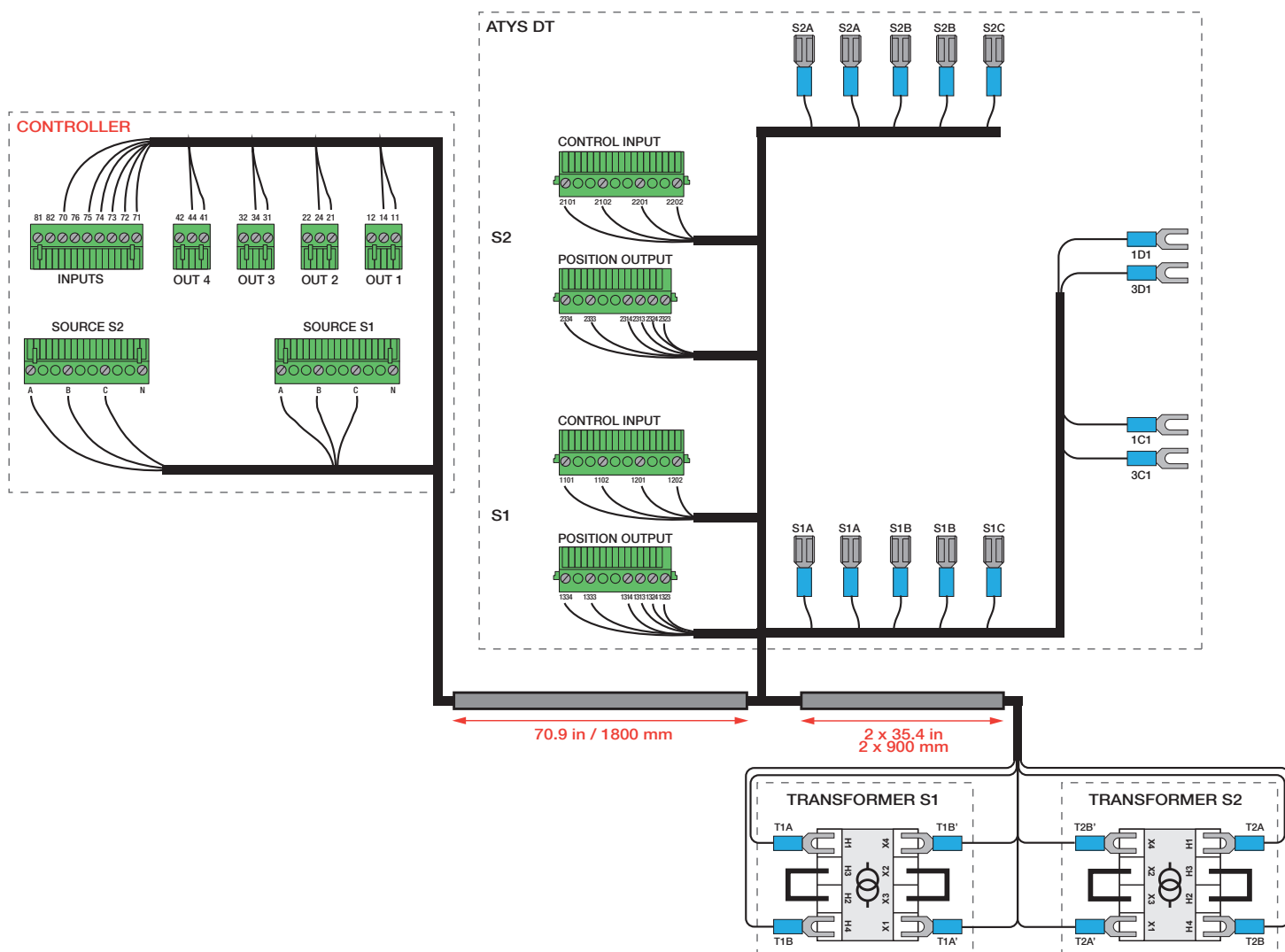
(X variable number depending on number of poles and rating of the switch)



4.3.2. With Transformer connection points

Ref: 9897 4000 for use with ATyS DT ref: 98AX XXXX

(X variable number depending on number of poles and rating of the switch)



SPARTAN SP350MQMJ transformers not included, to be purchased separately.
Must be bridged on X2-X3 and on H2-H3.



CAUTION ! Certified with SPARTAN SP350MQMJ please respect constructor installation requirements.



Note: in line with section 7.1.25 of UL 1008 edition 8 control circuits that are dependent upon for the proper operation of the transfer switch, do not include protective devices connected.

4.4. Optional accessories

The accessories listed below are not included in the ATyS DT kit and must be ordered separately.

Terminal screens

Use

Top and bottom terminal screens to protect from direct contact to the terminals. These protection screens can be locked and secured on the switch, are pre-cut for all compatible wire sizes and include holes for voltage and heat sensing.

Rating (A)	No. of poles	Reference ⁽¹⁾
100 ... 200 A	2 P	9698 2020
	3 P / 2 P + N	9698 3020
	4 P / 3 P + N	9698 4020
260 ... 400 A	2 P	9698 2040
	3 P / 2 P + N	9698 3040
	4 P / 3 P + N	9698 4040

(1) Top and bottom.



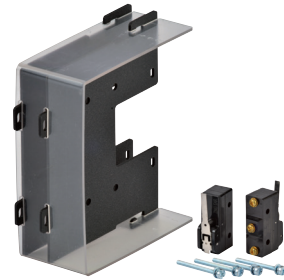
Additional auxiliary contact kit

Use

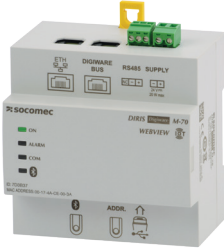
The ATyS FT and the ATyS DT ship with 2 NO/NC auxiliary contacts already mounted on the switch. If additional auxiliary contacts are needed this kit includes 2 additional auxiliary contacts as well as a polycarbonate protection cover to protect from direct contact on auxiliary contact terminals.

These additional auxiliary contacts are installed on top of the existing auxiliary contacts.

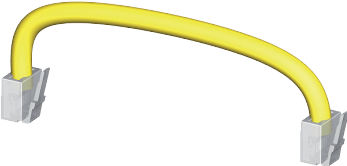
Reference **96990021**, see chapter «6.5.3. Extra auxiliary contact and cover», page 40 for more details.



4.4.1. Digiware connected devices

Part Number	Image	Description
4829 0140		DIRIS Digiware IO-10 for ATySC66 4 Digital inputs + 2 Digital outputs expansion module A maximum of 6 modules can be connected to the controller
4829 0222		DIRIS Digiware M-70 communication gateway for Ethernet & Webserver
4829 0202		DIRIS Digiware D-70 communication gateway for Ethernet & Webserver and multi-product display

For the connection between the controller and the accessories and between modules, a RJ45 Digiware cable is needed. There are different sizes available:

Length (m)	Quantity	Reference	
0.1	1	4829 0181	
0.2	1	4829 0188	
0.5	1	4829 0182	
1	1	4829 0183	
2	1	4829 0184	
5	1	4829 0186	
10	1	4829 0187	
50 m reel + 100 connectors		4829 0185	

4.4.2. Auxiliary DC power supply:

This power supply is optional when using the controller without digiware accessories, it is mandatory to use it when using digiware connected accessories. See chapter «6.5.4. I/O 10», page 42 for more details on digiware compatible products.

Power supply		Reference
P15	Power supply 100-240 VAC / 24 VDC 15 W	4829 0120

4.4.3. Lugs

Use terminal screws and washers supplied with the ATSE

Product Rating (A)	Designation	Ref. lugs	Quantity per reference	Openings per lug	Size / Section (AWG)		Pressure screw torque				Bolt torque				
					min.	max.	lb.in	Nm	Size in		lb.in	Nm	Size	in	mm
100A	 IlSCO D0957	Contact us		1	14	1/0	50	5,65	●	8	70.8	8	○ 5mm	0.625	15,9
200A	 IlSCO D2831	Contact us		1	6	250 KCMIL	275	31,1	○	5/16	70.8	8	○ 5mm	1	25,4
100-200 A	 CMC LA-300R	39542020	2	1	6	300 KCMIL	275	31,1	○	5/16	70.8	8	○ 5mm	1.12	28,4
		39543020	3												
		39544020	4												
260-400 A	 CMC LA-630R	39542040	2	1	4	600 KCMIL	550	62,1	○	1/2	310	35	○ 8mm	1.79	45,7
		39543040	3												
		39544040	4												
260-400 A	 IlSCO D3096	Contact us		1	4	600 KCMIL	600	67,8	○	1/2	310	35	○ 8mm	1.79	45,7

Power cable connections : For 100A use 1/0 AWG / For 200A use 250 KCMIL / For 260A use 300 Kcmil / For 400A use 600 Kcmil copper cables.

4.5. Reference configurator:

N° of poles
3: 3P
4: 4P

Rating
010: 100 A
020: 200 A
026: 260 A
040: 400 A

9 8 X X X XXX

0: spare switch for networks up to 480 VAC
8: ATSE assembly for 480 V.a.c 3 wire network
A: ATSE Assembly for networks up to 480 VAC

0: Without solid neutral
1: With solid neutral

4.6. Environmental

The ATyS products meets the following environmental requirements:

4.6.1. Operating Conditions

4.6.1.1. Temperature



- **Controller**

From -22°F to +158°F (-30°C to +70°C).

NOTE: With limitations on the LCD screen that may show temporary distortion below 14°F (-10°C).

- **Switch mechanism:**

From: 32°F to 131°F (0°C to +55°C).

Max 380 A at 122°F (50°C) for 400A switches. Max 350 A at 131°F (55°C) for 400 A switches.

For a more precise calculation of the temperature derating for your application please contact Socomec.

- **Wire harness**

From -4°F up to +158°F (-20°C to +70°C).

4.6.1.2. Hygrometry



- 80% humidity without condensation at +131°F (+55°C).

- 95% humidity without condensation at +104°F (+40°C).

4.6.1.3. Resistance to impacts

- IK 05 as defined in IEC 62262 on the switch front face.

- IK 08 (6.8 J) rating as defined in UL 61010-2-201 on the controller front face.

4.6.1.4. Altitude



- Up to 6561 feet (2000m) in altitude without derating.

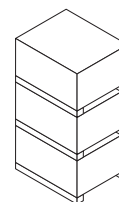
For a calculation of the product derating for altitudes over 6561 feet (2000m), for your application please contact Socomec.

4.6.2. Storage



Products should be store for a maximum of 12 months, it is recommended to store product in dry, non-corrosive and non-saline atmospheric conditions. Recommended storage room temperature (77°F / 25°C) maximum storage temperature range from -4°F up to +158°F (-20°C up to +70°C).

A maximum of three boxes may be stacked vertically.



4.6.3. ATyS DT Volume and shipping weight by reference:

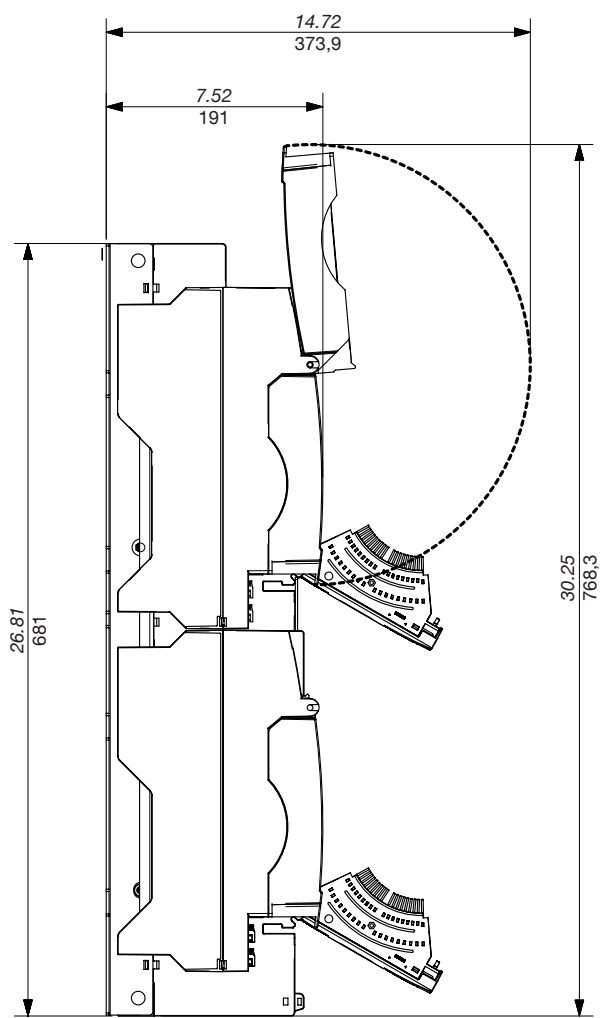
Rating	N° of Poles	Solid Neutral	Reference Number	Weight (kg)			
				Net		Gross	
				Lb.	Kg	Lb.	Kg
100	3	Without	98A0 3010	52,65	23,88	87,92	39,88
100	3	Without	9880 3010	52,65	23,88	87,92	39,88
100	3	With	98A1 3010	54,41	24,68	89,68	40,68
100	4	Without	98A0 4010	56,00	25,4	91,27	41,4
200	3	Without	98A0 3020	52,65	23,88	87,92	39,88
200	3	Without	9880 3020	52,65	23,88	87,92	39,88
200	3	With	98A1 3020	54,41	24,68	89,68	40,68
200	4	Without	98A0 4020	56,00	25,4	91,27	41,4
260	3	Without	98A0 3026	63,01	28,58	98,28	44,58
260	3	Without	9880 3026	63,01	28,58	98,28	44,58
260	3	With	98A1 3026	64,55	29,28	99,83	45,28
260	4	Without	98A0 4026	67,42	30,58	102,69	46,58
400	3	Without	98A0 3040	63,01	28,58	98,28	44,58
400	3	Without	9880 3040	63,01	28,58	98,28	44,58
400	3	With	98A1 3040	64,55	29,28	99,83	45,28
400	4	Without	98A0 4040	67,42	30,58	102,69	46,58

4.6.4. Marking

The association of controller, harness and switching mechanism as well as other accessories is UL listed to UL 1008 (cULus marking), individually components (spare parts) are UL recognized (cURus marking).

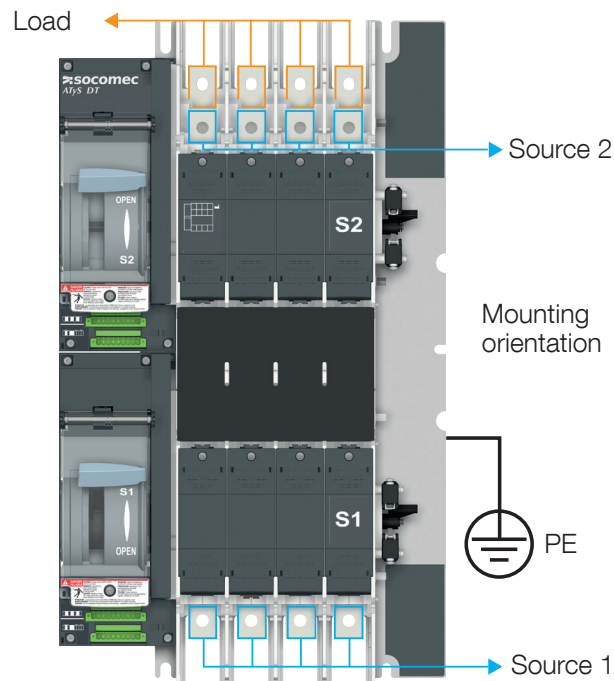


Side view covers open



6. MOUNTING INSTRUCTIONS

6.1. Installation



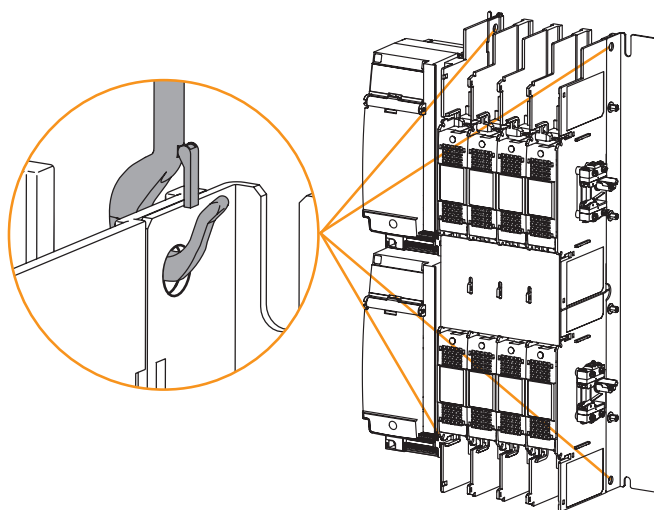
Socomec recommends connecting the Emergency (or alternate) source on the Source 2 power connections and the Normal (primary) source on the Source 1 power connectors.

However, it is possible to invert the position of the Normal and emergency sources on both the controller and on the switch; in this case source priority must also be inverted on the controller.



DANGER ! Product must be installed vertically (cf image above) on a flat surface of a type 1, 3R, 12 and/or 12K enclosure, select an enclosure according to the minimum enclosure size indicated in the previous chapter.

Caution: when lifting the switch use the holes on the side of the mounting feet as shown in the following image, do NOT lift the product using the power terminals:



6.2. Mounting the switching mechanism

Product must be installed on a flat surface of a flat surface of a type 1, 3R, 12 and/or 12k enclosure, select an enclosure according to the minimum enclosure size indicated in the previous chapter.

Due to the weight of the switch it is recommended to install horizontally rather than vertically.

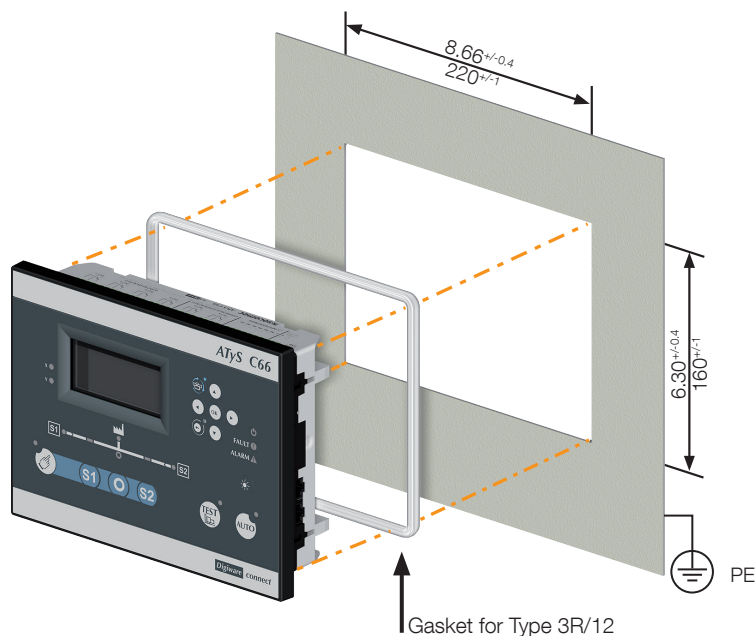
6.3. Mounting the C66 controller

6.3.1. Door Mounting

The ATyS C66 can be mounted Surface must be Types 1, 3R, 12 and/or 12K enclosure doors with up to 0.15 in (4mm) thickness.

STEP 1: Cut out for the controller

Cut a rectangle hole of 8.66 x 6.3 in (220x160mm) on the enclosure door.

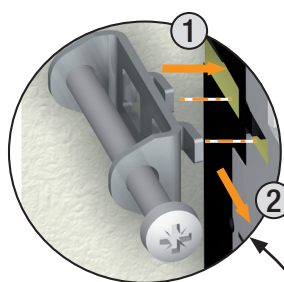


For NEMA 3R12 protection the gasket must be placed and fitted on the inside perimeter of the controller.

STEP 2: Fixing the controller on the door:

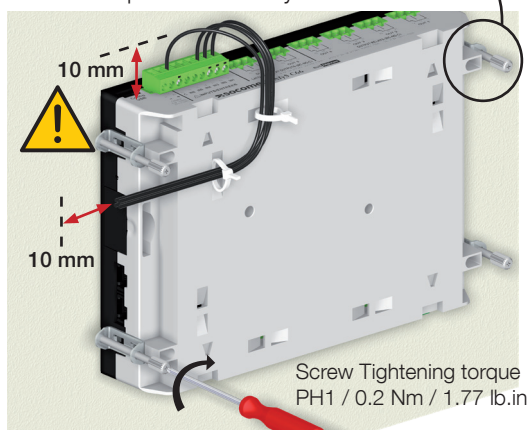


Place the switch inside of the cutout and clip the door mounting screw delivered with the product, on the side of the controller (2 screws per side). Tighten at 1.77 lb.in (0.2 N.m).



Insert the 4 door mounting screws in the designated slot and push back to lock in place.

Example of cable way.



Caution! Cables must be more than 0.4 in (10mm) away from the RTC battery cover and USB connector.



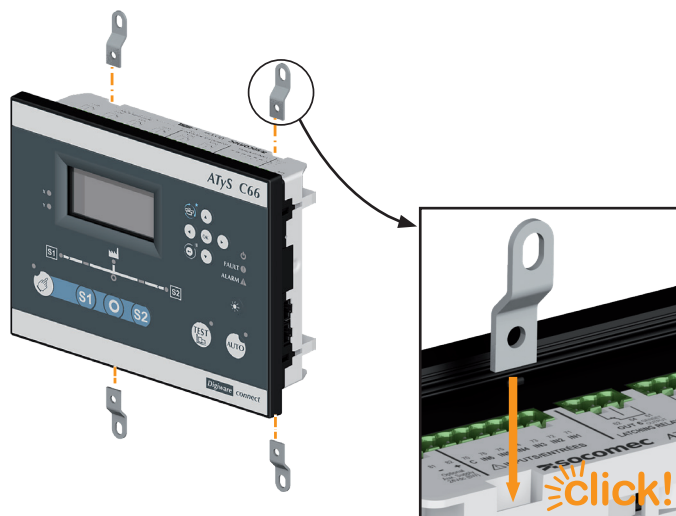
Caution! Do not drill holes above the controller after it has been mounted

6.3.2. Backplate mounting

An alternative to mounting the controller on the door is to mount it on a backplate inside the enclosure. This is especially useful to limit the access to the controller.

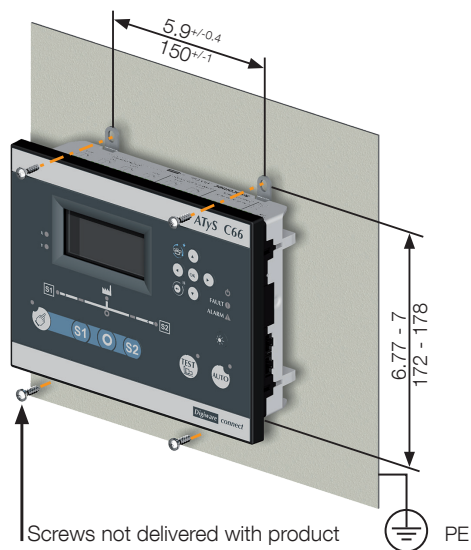
STEP 1: Placing the 4 mounting legs on the controller

Insert the mounting legs into the four slots (2 top side and 2 bottom side (c.f. below topside view)).



STEP 2: Fixing the controller on the backplate

Fix the controller through the mounting legs to the backplate, maximum screw diameter 0.22in/6mm.



Note: screws for backplate mounting are not delivered with the product

6.4. Mounting the ATyS DT cable harness

6.4.1. Fixing the faston connectors

As shown on the wire harness schematics in chapter 4.3 the wiring harness includes 5 fast on connectors per source (5 connectors for source 1 and 5 connectors for source 2).

For Product references 98AX XXX these connectors are labeled:

Source 1 side:

- S1A
- S1B
- S1C
- S1N
- 102

S1 auxiliary contact

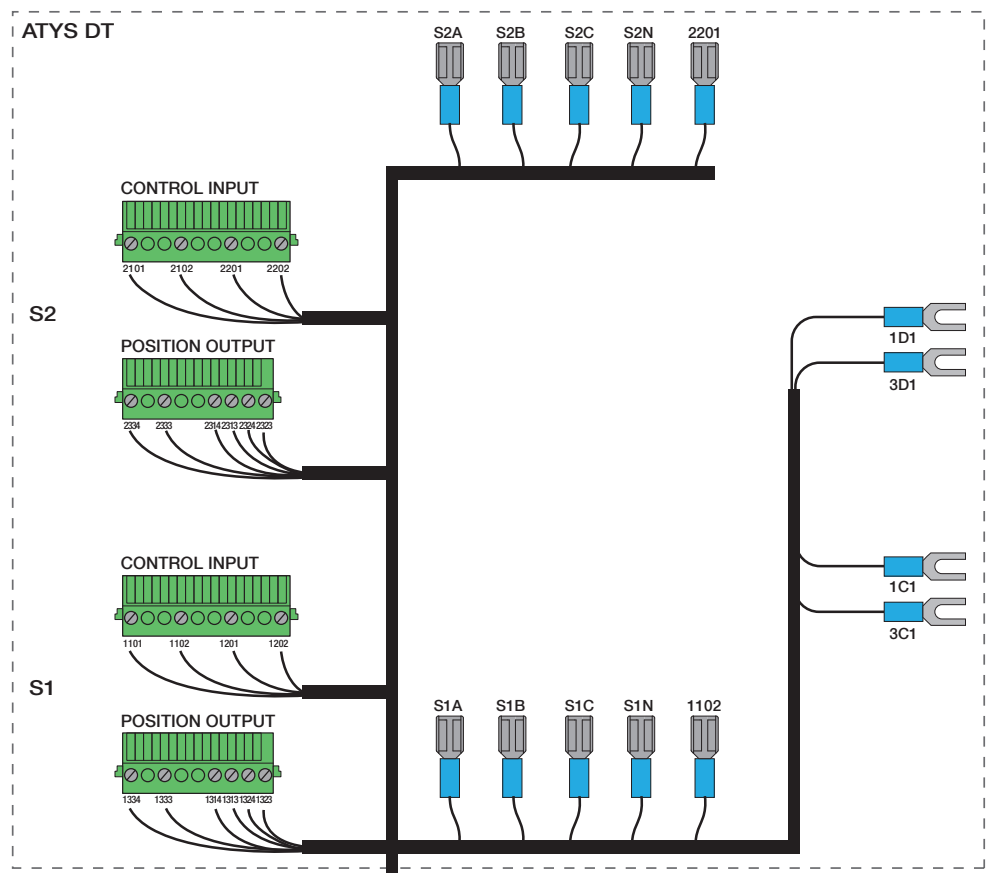
- 1C1
- 3C1

Source 2 side:

- S2A
- S2B
- S2C
- S2N
- 201

Source 2 auxiliary contact

- 1D1
- 3D1



For Product references 988X XXX, these connectors are labeled:

Source 1 side:

- S1A
- S1A
- S1B
- S1B
- S1C

S1 auxiliary contact

- 1C1
- 3C1

Source 2 side:

- S2A
- S2A
- S2B
- S2B
- S2C

Source 2 auxiliary contact

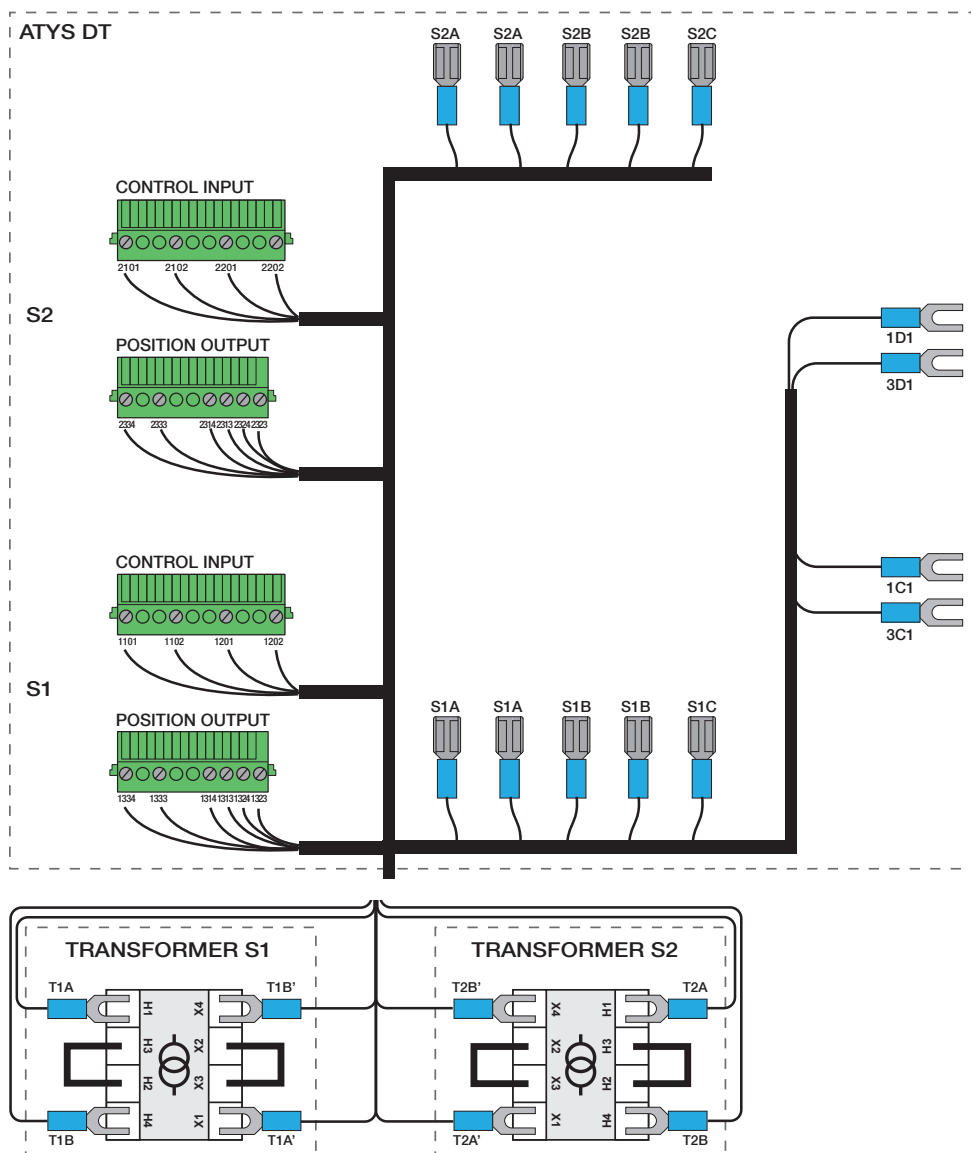
- 1D1
- 3D1

Transformer 1 :

- T1A
- T1B
- T1A'
- T1B'

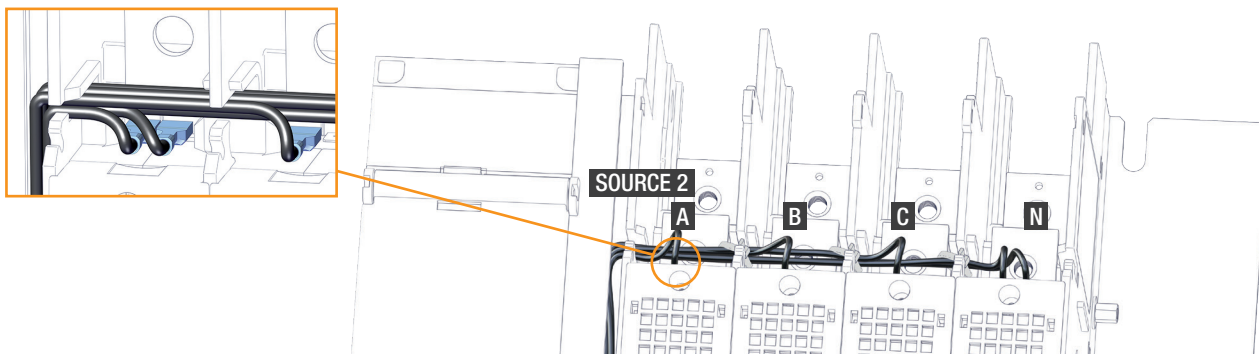
Transformer 2 :

- T2A
- T2B
- T2A'
- T2B'



These Faston are to be connected in the switching mechanism on source 1 and source 2 poles under the power connectors as shown below

A maximum of 2 faston connectors can be placed on each pole.



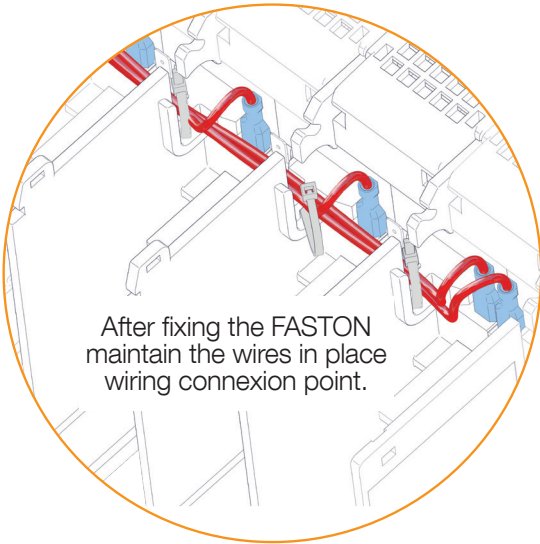
The Faston connectors must be placed specifically to match your network, in order to do this refer to the tables below:

											VOLTAGE TRANSFORMER			
											480 VAC		240 VAC	
NETWORK TYPE	TYPE	SOURCE	RTSE FASTON CONNECTIONS				AUXILIARY CONTACT				PRIMARY		SECONDARY	
			A	B	C	N	1C1	3C1	1D1	3D1	H1	H4	X1	X4
120/208 VAC	3P+N / 4P	S2	S2A & 2201	S2B	S2C	S2N			1D1	3D1				
		S1	S1A & 1102	S1B	S1C	S1N	1C1	3C1						
208 VAC	3P	S2	S2A & 2201	S2B	S2C	- (1)			1D1	3D1				
		S1	S1A & 1102	S1B	S1C	- (1)	1C1	3C1						
277/480 VAC	3P+N / 4P	S2	S2A	S2B	S2C	S2N & 2201			1D1	3D1				
		S1	S1A	S1B	S1C	S1N & 1102	1C1	3C1						
480 VAC + Transformer	3P	S2	2xS2A	2xS2B	S2C	-			1D1	3D1	T2A	T2B	T2A'	T2B'
		S1	2xS1A	2xS1B	S1C	-	1C1	3C1			T1A	T1B	T1A'	T1B'

(1) See chapter “6.4.2. Switch side connectors”, page 32 for information on how to connect unused cables.



WARNING ! Wires must not be in contact with active voltage points such as unused FASTON connections and lugs. In order to do so any unused or loose cables must be tensed then fixed on a nonconductive part of the transfer switch (use cable tie fixation points as shown in the images below).

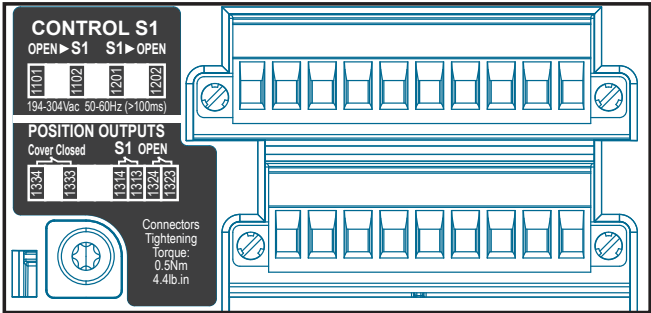
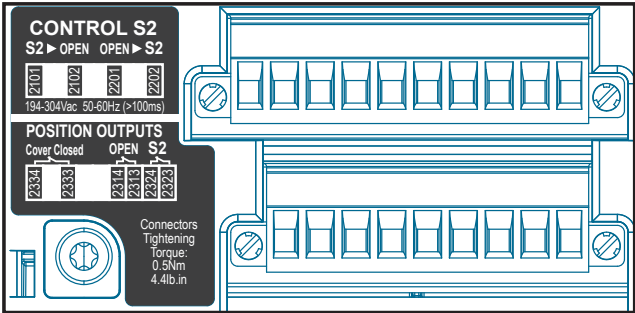


For unused cable harness, faston cables see chapter «6.4.4. Cable management & enclosure integration», page 34.

6.4.2. Switch side connectors

Connect and tighten the two connectors (10 pin and 8 pin) on the correspond slots located below the plastic cover. The cables inserted in each connector will correspond to the label on the left of the two connectors.

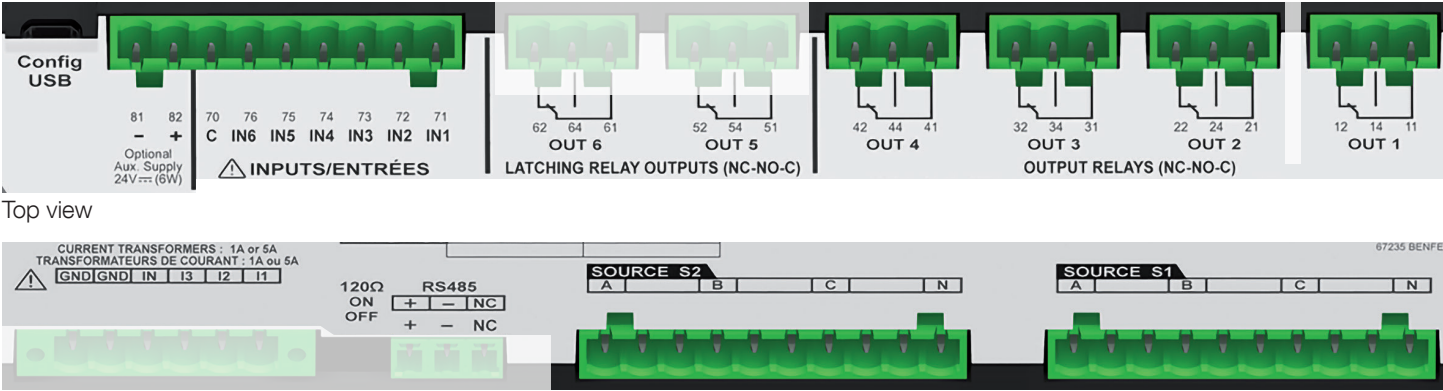
Tighten using a Flat 3mm screwdriver with a 4.4 Lb. torque (0.5 N.m),



6.4.3. Controller side connectors

6.4.3.1. Connectors with harness

The remaining connectors of the cable harness must be placed on the controller; the location of these connectors is highlighted below:



CAUTION ! Take care to correctly identify connectors when inserting “OUT1”, “OUT2”, “OUT3”, “OUT4” connectors and “SOURCE 1”, “SOURCE 2” connectors, as they are interchangeable.

The remaining connectors are included in connector kit (separate from harness) these can be used for customer input/ outputs, RS485 communication and current sensors.

6.4.3.2. User available connectors

For details on user available connection points refer to the table below:

(in grey connection points integrated in the harness in white available connection points)

TYPE	TERMINAL N°	DESCRIPTION	CHARACTERISTICS	RECOMENDED CROSS SECTION	TIGHTENING TORQUE
Sensing source 1	SOURCE 1 L1/L2/L3/N	Voltage sensing inputs source 1 & voltage supply (L1-L2)	Sensing voltage 50 - 575 V.a.c P-P - 50/60 Hz (+/- 10%) Supply voltage (L1-L2)	AWG 18-14 0.75-2.5mm²	
Sensing source 2	SOURCE 2 L1/L2/L3/N	Voltage sensing inputs source 2 & voltage supply (L1-L2)	88 - 576 V.a.c - 50/60Hz (+/- 10%) U _i 600V		
Inputs	71	IN1: reserved (SWITCH IN POS1)	Do not connect to any power supply from terminal 70 common point.	AWG 16-14 1.5-2.5mm²	4.4-5.3 Lb.in 0.5-0.6 Nm
	72	IN2: reserved (SWITCH IN POS2)			
	73	IN3: reserved (SWITCH S1 IN POS0)			
	74	IN4: reserved (SWITCH S2 IN POS0)			
	75	IN5: reserved (COVER OPEN)**			
	76	IN6: programmable input			
	70	Common point for inputs			
Aux power supply	81/82	- : negative terminal for aux supply +: positive terminal of aux supply	12-24 Vd.c.		
Outputs	12/14/11	OUT1: reserved (POS 1 ORDER)	Dry contacts 8A / 277 VAC 50/60 Hz 5A / 24 VDC	AWG 16-14 1.5-2.5mm²	4.4-5.3 Lb.in 0.5-0.6 Nm
	22/24/21	OUT2: reserved (POS 2 ORDER)			
	32/34/31	OUT3: reserved (POS 0 ORDER S1)			
	42/44/41	OUT4: reserved (POS 0 ORDER S2)			
Latching relays	52/54/51	OUT 5: elevator control			
	62/64/61	OUT 6: genset start relay			
Current transformers	IN/13/12/11	CT neutral / CT phase C / CT phase B / CT phase A	CT input 1A or 5A		
Serial connection	RS485	Connection RS485 - : negative terminal of RS485 bus +: positive terminal of RS485 bus NC : Ground	RS485 bus insulated	LIYCY sheilded twisted pair 30-14 AWG / 0.14 to 1.5 mm²	1.9 - 2.2 Lb.in 0,22 - 0,25 Nm
Digiware*	DIGIBUS	Connection point for I/O 10 optional accessories (must use 24 VDC input)	RJ 45 digiware cable	-	-

* For more information check I/O module instruction sheet ref 545597.

** After wizard configuration "COVER OPEN will not be programmed by default, users must go to "MAIN MENU">"PARAMETERS">"I/O">"INPUTS" and configure "INPUT 5" to "COVER OPEN" and "INPUT 5 TYPE" to "NC".

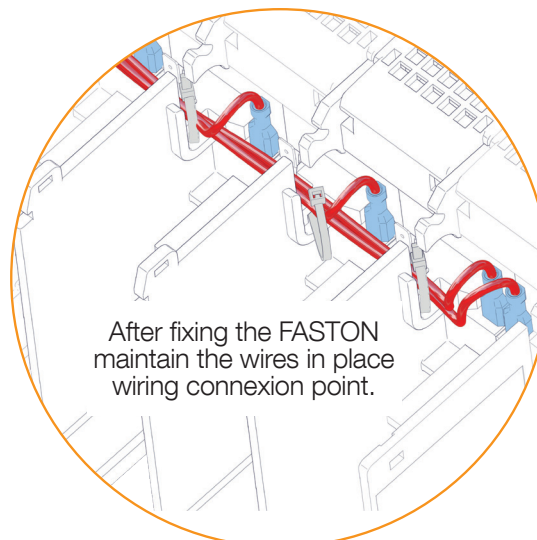
For details on input / output functions available on the C66 controller refer to the C66 instruction sheet 549868 available on the Socomec website:

<https://www.socomec.us/range/atys-c66/>

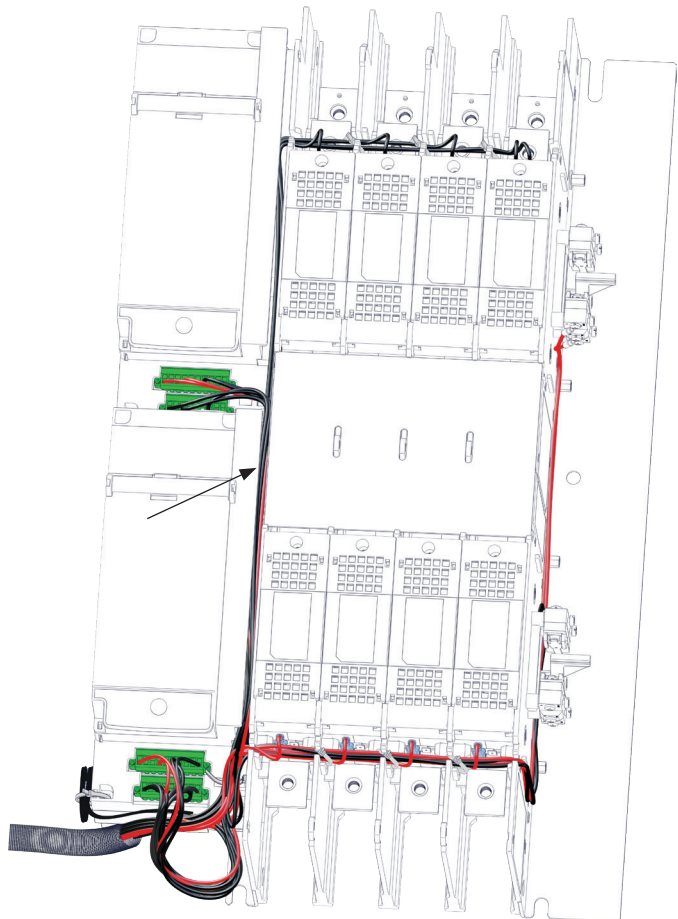
6.4.4. Cable management & enclosure integration

6.4.4.1. Switch side cable management

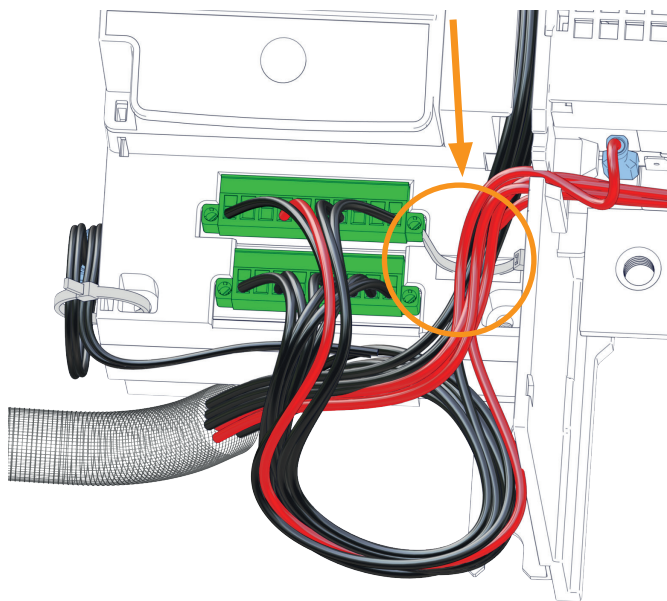
As indicated in «6.4.1. Fixing the faston connectors», page 30 of this chapter wires with faston connectors must be maintained in place using cable ties.



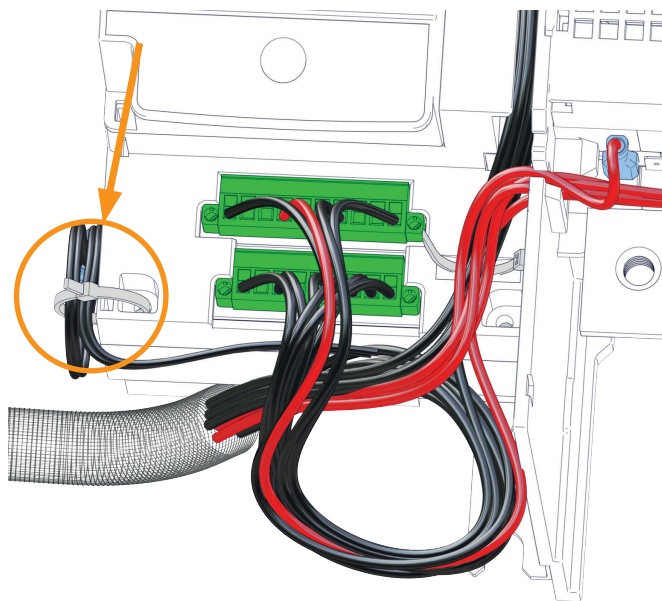
The wires should be passed along the cable duct as shown below (this includes cables with unused Faston connectors).



Pull the cables down so that all wires are tight and use a cable tie to maintain all cables coming from the cable duct into place (cf. image below):



Then fix any cables with unused faston connectors on the side of the switch as shown below:



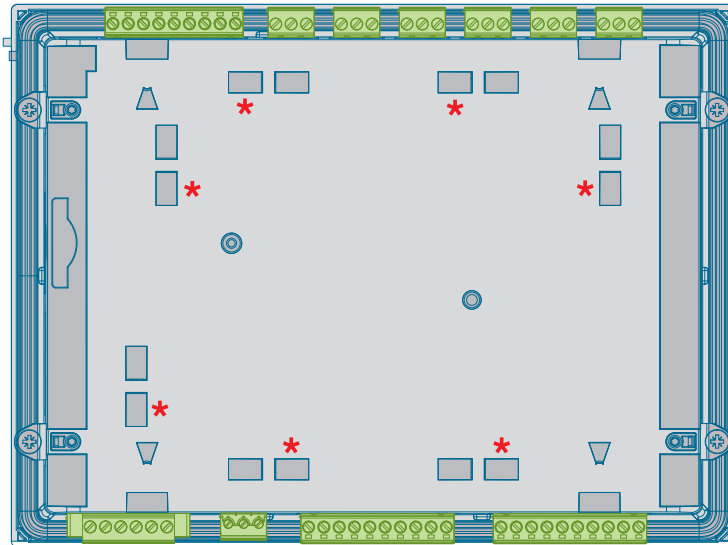
Use the side inserts to maintain the auxiliary contact cables in place with cable ties as shown below:



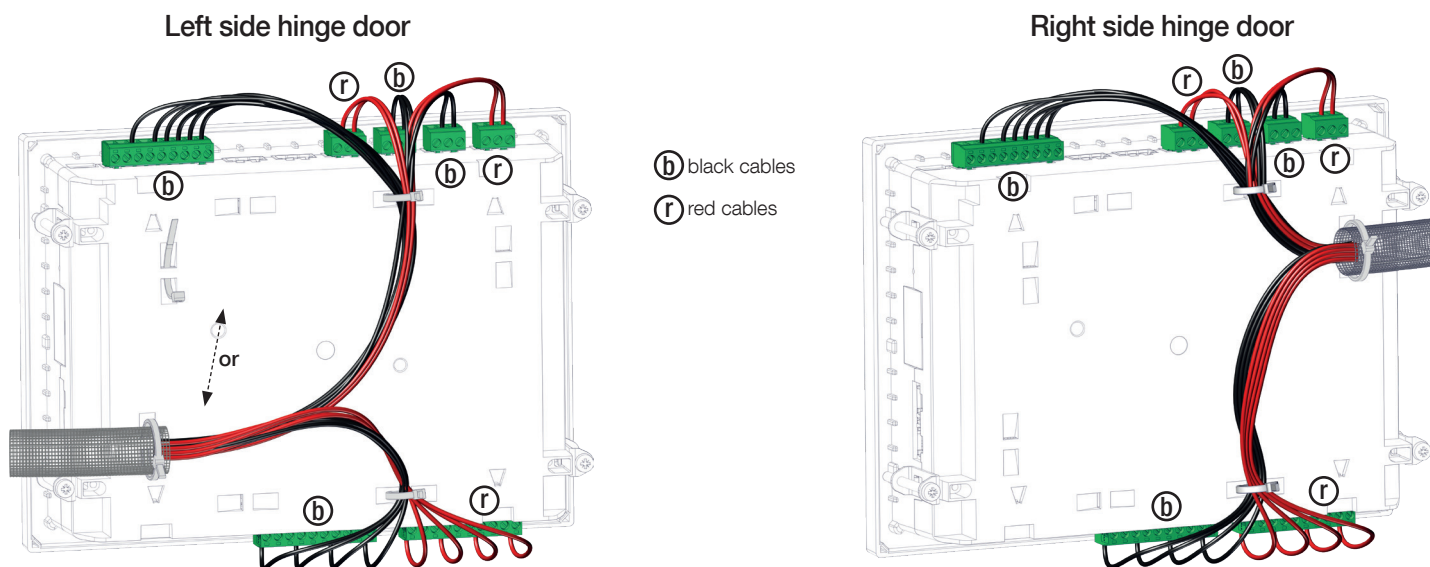
For example, these can be used to maintain cables in place when connecting wires to the customer position auxiliary contacts.

6.4.4.2. Controller side cable management

The controller also includes provisions for connection cables ties, see image below:

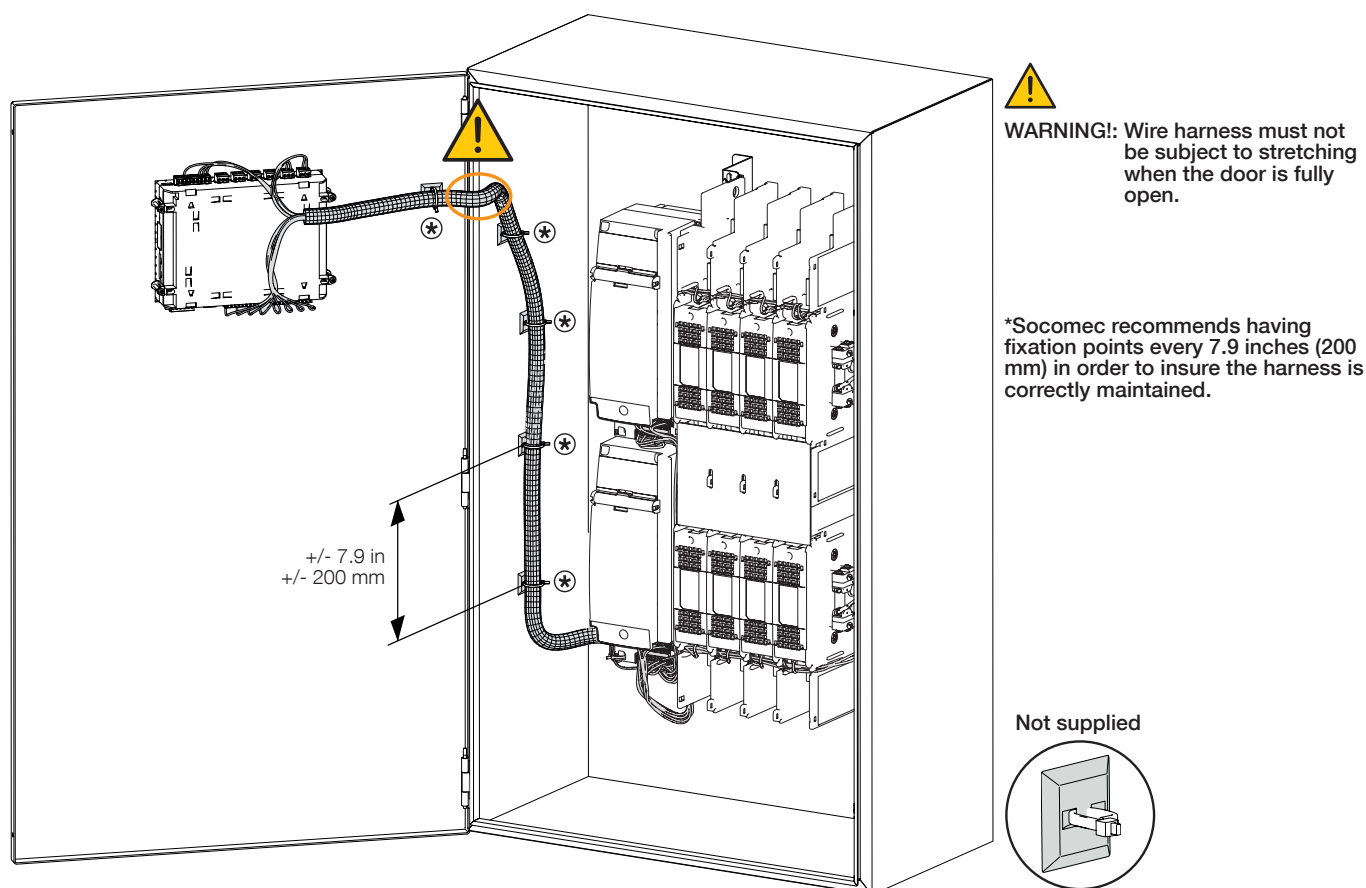


Cable ties used should be adapted according to the position of the door:



CAUTION ! Cables must be more than 0.4 in (10mm) away from the RTC battery cover and USB connector.

6.4.4.3. Enclosure cable management



6.5. Mounting optional accessories

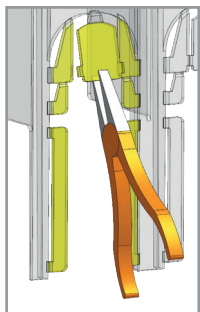
The accessories mentioned in this chapter are not included inside the ATyS DT package and must be ordered separately.
For accessory list, see chapter «4.4. Optional accessories», page 19.

6.5.1. Terminal shrouds

Terminal shrouds can be installed to protect against direct contact on active conductive parts, order this accessory according to the table below, each part number includes both top (source 2 and load) and bottom (source 1) protection.

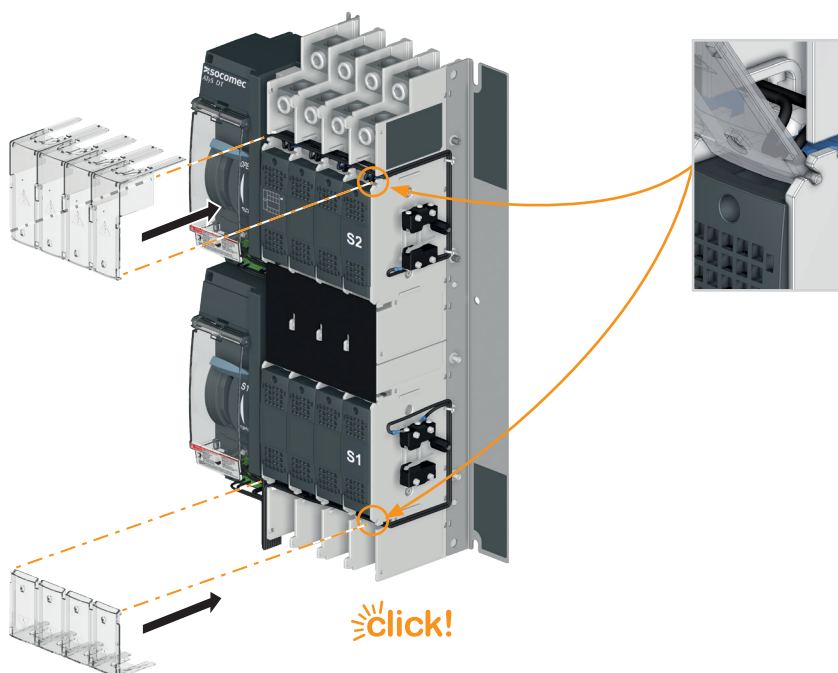
	No. of poles	Reference*
100-200A	2P	96982020
	3P/2P+N	96983020
	4P/3P+N	96984020
260-400A	2P	96982040
	3P/2P+N	96983040
	4P/3P+N	96984040

Before mounting the terminal shrouds, break off the removable plastic part corresponding with the switch rating and cables used:



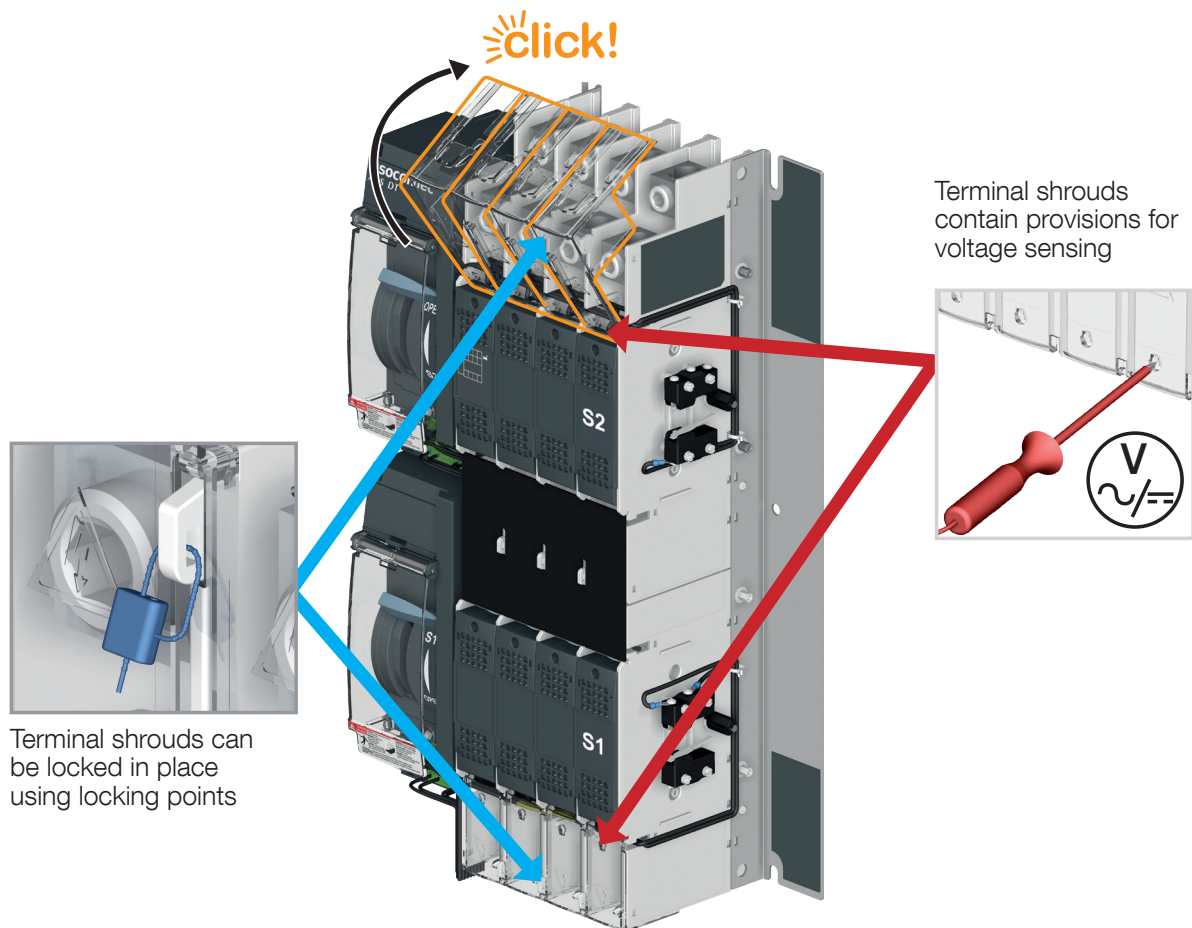
For 250, 300 & 600 KCMIL (200 , 260 400A) break off all removable parts (highlighted on the picture).
For 1/0 & (100A) do not remove any parts.

Fix the terminal shrouds in place and push back.



When fixing the shrouds make sure the pieces fit in the switch as shown in the image above then push back to clip in place.

Push back to click in place.



Terminal shrouds can also be fixed in place using cable ties as shown above, they also include small diameter holes to allow for voltage sensing without removing the covers.

6.5.2. Lugs

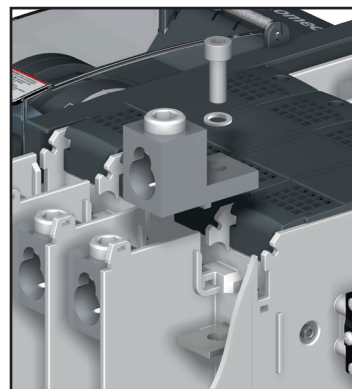
Switch are delivered with crimped nuts on each pole as well as the corresponding screws, use the screws when connecting lugs.



CAUTION ! Only use screws delivered in product, in case of loss of screws please contact Socomec.



Note: on the top side of the switch, it is recommended to mount the terminal lugs for the load before mounting the source 2 terminal lugs.



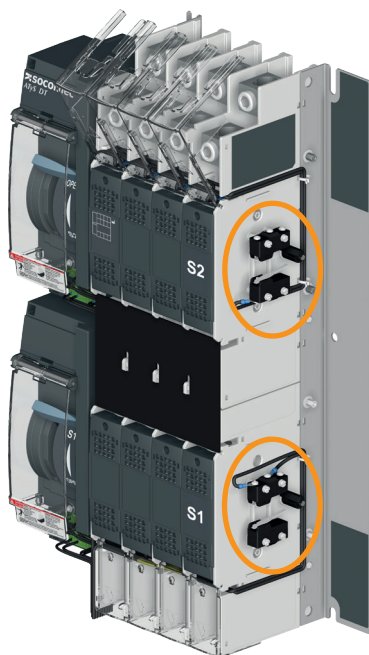
100A switches tested with 1/0 AWG copper wires.
200A switches tested with 250 KCMIL copper wires.
260A switches tested with 300 KCMIL copper wires.
400A switches tested with 600 KCMIL copper wires.

Refer to the table below for tightening torques:

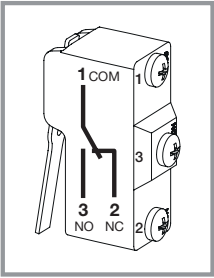
Product Rating (A)	Designation	Ref. lugs	Quantity per reference	Openings per lug	Size / Section (AWG)		Pressure screw torque			Bolt torque						
					min.	max.	lb.in	Nm	Size in	lb.in	Nm	Size	in	mm		
100A	 IlSCO D0957	Contact us		1	14	1/0	50	5,65		8	70.8	8		5mm	0.625	15,9
200A	 IlSCO D2831	Contact us		1	6	250 KCMIL	275	31,1		5/16	70.8	8		5mm	1	25,4
100-200 A	 CMC LA-300R	39542020	2	1	6	300 KCMIL	275	31,1		5/16	70.8	8		5mm	1.12	28,4
		39543020	3													
		39544020	4													
260-400 A	 CMC LA-630R	39542040	2	1	4	600 KCMIL	550	62,1		1/2	310	35		8mm	1.79	45,7
		39543040	3													
		39544040	4													
260-400 A	 IlSCO D3096	Contact us		1	4	600 KCMIL	600	67,8		1/2	310	35		8mm	1.79	45,7

6.5.3. Extra auxiliary contact and cover

The ATyS DT switches are delivered with four Pre-installed C-Form auxiliary contacts (the two central auxiliary contact are connected to the harness, the two external auxiliary contacts can be used to relay position information) on the left side of the switch:



The auxiliary contacts have the following characteristics:



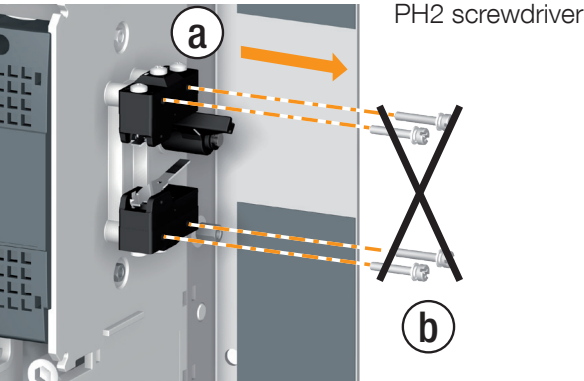
Terminal tightening torque
7.9 lb.in / 0.9 Nm

Auxiliary contact electrical characteristics	
Rated current (125-480 VAC)	22 A
Rated current (125 VDC)	0.5A
Rated current (250 VDC)	0.25 A
Rated horse power up to 250 VAC	½ HP
Rated horse power up to 480 VAC	¼ HP
Recommended wire section for 22A	10 AWG 4 mm²

Use the correct protection according to your auxiliary contact circuit and your load.

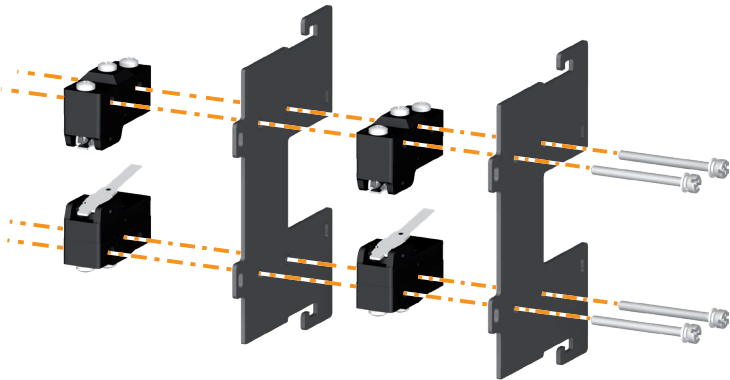
The additional auxiliary contact kit allows user to add two additional auxiliary contacts on the side of the switch and comes with barriers to protect against direct contacts with live parts.

To install additional contacts, first remove the contacts in place using a PH2 screwdriver:

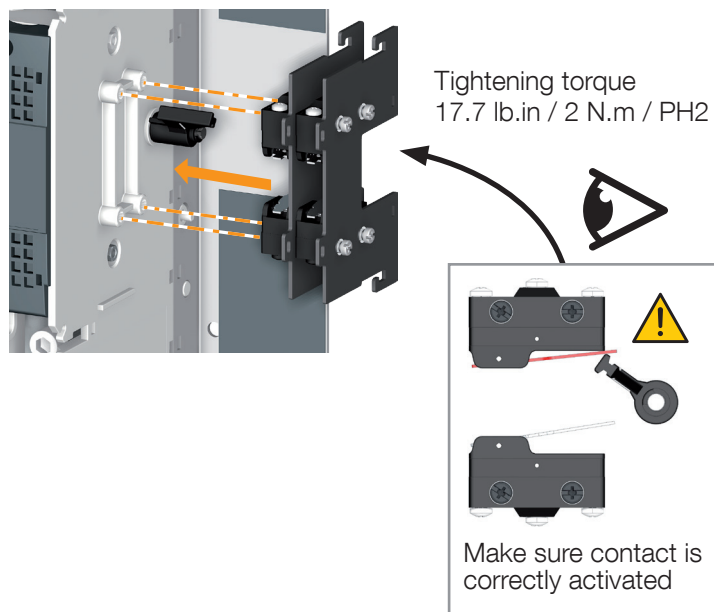


Pre-installed screws can be discarded.

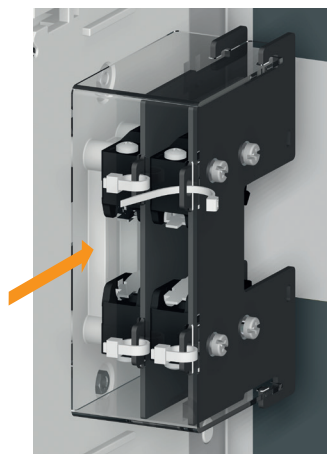
Then assemble the existing contacts as well as the contacts of the kits and the barriers using the screws supplied in the kit as shown below:



Then fix the assembled products on the switch:



Finally place the plastic cover, push the cover to clip into the two inter-contact barriers.

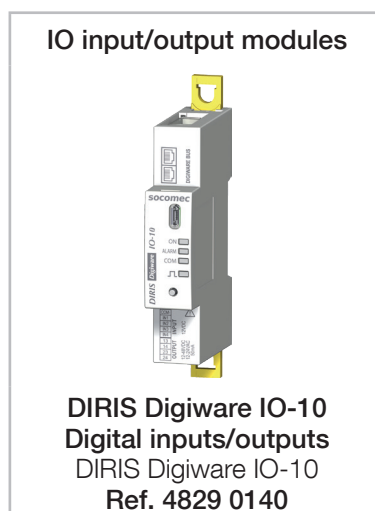


This barrier can then be locked in place using cable ties.

(To remove squeeze the top and bottom parts of the transparent piece and pull out).

6.5.4. I/O 10

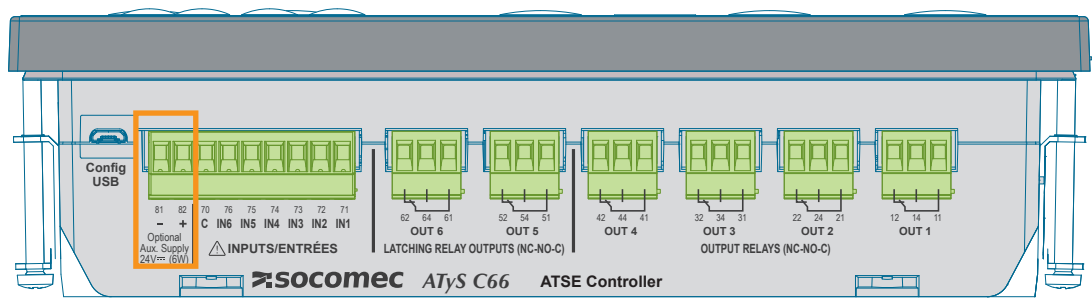
Digital I/O modules are accessories not delivered with the product. These optional modules can be ordered using the references below:



Digital I/O modules provide additional inputs /outputs to be used with/by the C66 controller.

The maximum length of the Digiware bus is 4000 feet (100 meters).

Note: the maximum number of I/O optional modules that can be added through the Digiware bus to the controller is 6; this is equivalent to 24 digital inputs and 12 digital outputs. In order to use the I/O modules the 24VDC input of the C66 controller must be supplied with 24 VDC.

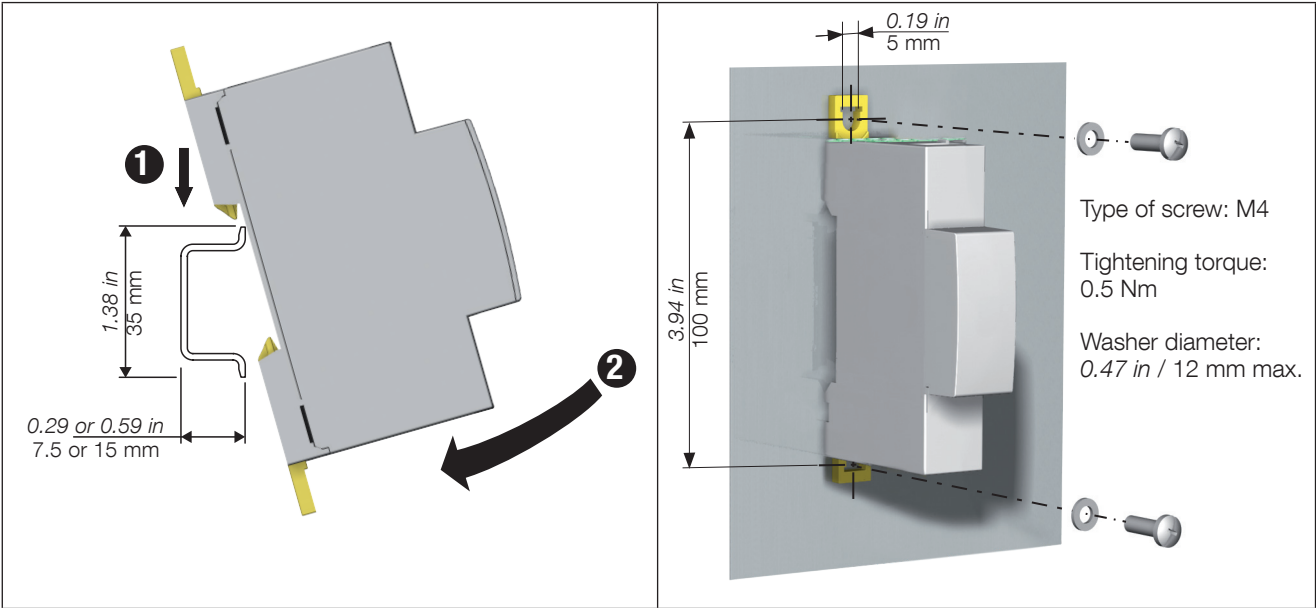


An end-of-the-bus resistor is necessary for a correct communication between the modules and the controller:

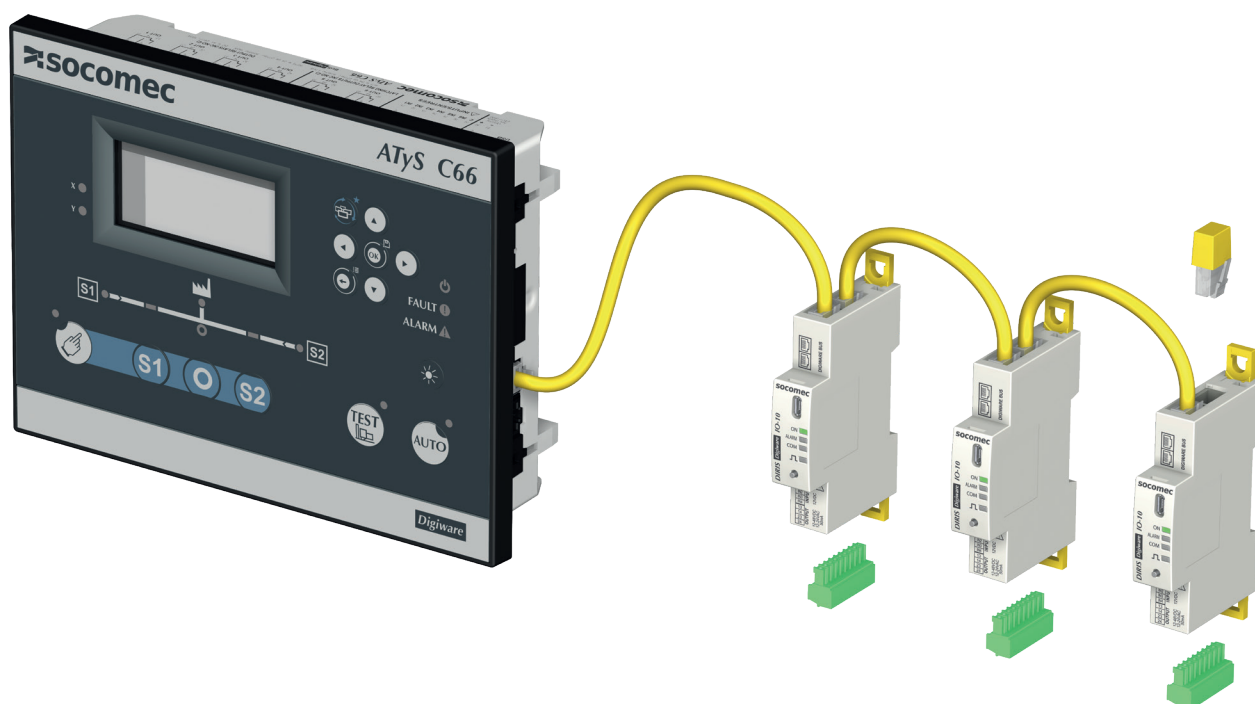
	Quantity	Part number
	1	4829 0180

Mounting the I/O modules:

Position the I/O modules on DIN rail or on backplate as shown on the image bellow.



The connection between modules and to the ATyS C66 Digiware input is on the side of the controller by means of an RJ45 connector and after this the other modules are daisy chained (up to 6 modules).



7. CONFIGURATION

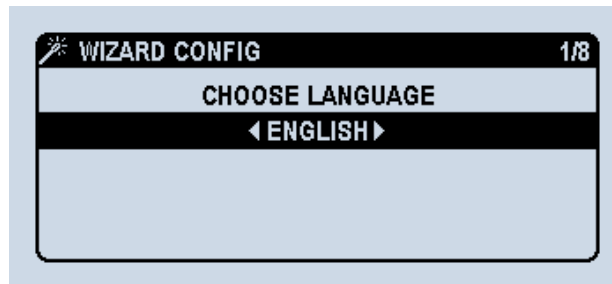
This document will cover basic programming of the C66 controller in the ATyS DT application, for more details on timers, specific function, input/output configurations and others refer to the ATyS C66 instruction sheet (549868) available on the Socomec website:

<https://www.socomec.us/range/atys-c66/>

When powered up for the first time the C66 will prompt users to go through the installation wizard.

The first out of 8 questions will be the language. User can choose between the following 3 languages:

- English
- French
- Spanish



Then it will follow the option to start the wizard with the following options:

- Start now
- Remind me the next power on
- Never ask me again

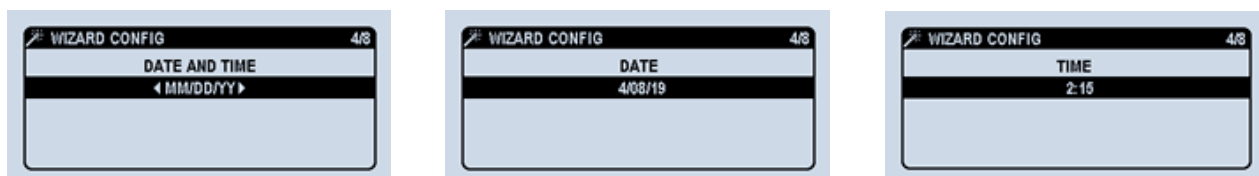
The wizard will remain accessible inside the menu PARAMETERS/WIZARD.

In case the decision taken is to begin with the wizard configuration, then the options are:

- To use the smart configuration: parameters like voltage, frequency and phase rotation will be auto detected and shown to users (at which point users can correct if auto-detection has not selected the correct parameters for the installation)
- To use the manual configuration: in this case users will enter all network parameters manually.

The controller will require the configurator 4-digit password before the configuration (**by default set to 1000**).

Once the configuration starts, the user needs to enter the date format, date and time as follows:



These time/date values will be saved and from that moment the RTC battery will keep the clock running even if the supply to the controller is lost.

Once these parameters are set, the next step is the source settings, where the user has to confirm the values proposed by the controller (in case of smart configuration) or enter the values (in case of manual configuration) for the number of poles of the switch / wires coming from the sources, nominal voltage, nominal frequency and phase rotation.

WIZARD CONFIG		5/8
SOURCES		
POLES & WIRES	◀ 3P + N ▶	⚡
NOMINAL VOLTAGE	◀ 400V ▶	⚡
NOMINAL FREQUENCY	◀ 50Hz ▶	⚡
PHASE ROTATION	◀ A-B-C ▶	⚡

Step 6 is about the installation parameters.

Application type stands for the type of sources coming to the controller. The options are:

- Main-Genset (by default): Power supply coming from a transformer on the priority source and from a Genset on the non-priority source.
- Main-Main: Power supply coming from a transformer for both sources 1 and 2.
- Genset-Genset: Power supply coming from a diesel generator for both sources 1 and 2.

Source priority stands for the preferred source in automatic mode when both sources are fully available.

The options are:

- Source 1: the source connected to source 1 sensing on the switch will become the preferred source and the transfer switch will automatically transfer to this source as long as it is available and the timers are respected.
- Source 2: the source connected to source 2 sensing on the switch will become the preferred source and the transfer switch will automatically transfer to this source as long as it is available and the timers are respected.

WIZARD CONFIG		6/8
INSTALLATION		
APPLICATION TYPE	◀ UTILITY - GEN ▶	
SOURCE PRIORITY	◀ SOURCE 1 ▶	
SWITCH TECHNOLOGY	◀ ATyS DT ▶	



Important: Switch technology must be set to “ATyS DT”.

The 7th step is not affecting the functioning of the transfer switch but permits the user to select a name for the product. As default, it's ATyS C66, but it can be changed for any combination of letters, numbers and signs, for instance, “Cooling”, “Line 1” or “DTC/21”.

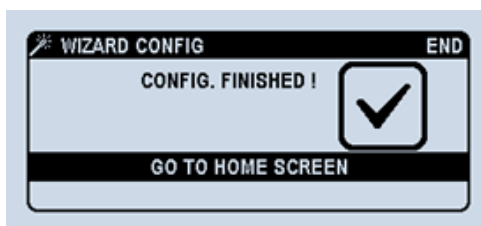
WIZARD CONFIG		7/8
PRODUCT NAME		
TyS Cxx		

To finalize the configuration, the wizard asks for the communication parameters, such as the slave address (by default 6) and the communication parameters:

WIZARD CONFIG		8/8
COMMUNICATION RS485		
BAUDRATE:	◀ 38400 ▶	
STOP:	◀ 1 BIT ▶	
PARITY:	◀ NONE ▶	

WIZARD CONFIG		8/8
COMMUNICATION ADDR		
ADDRESS:	006	

After entering and confirming these parameters, the wizard informs that the minimum parameters needed for the transfer switch to work are set and invites to go to the menu home screen where the user can set more parameters and functions manually (see next chapter).



Note: Configuring input 5 to cover OPEN:

Wizard will not configure IN5 to COVER OPEN, however it is strongly recommended to do so. In order to program input 5, go to "MAIN MENU" > "PARAMETERS" > "I/O" > "INPUTS". Select "INPUT 5" and configure to "COVER OPEN".

8. MAINTENANCE



WARNING ! Maintenance on the product and any other associated equipment including but not limited to servicing operations must be performed by adequately trained and qualified personnel.

8.1. Mechanical manual operations for maintenance purposes



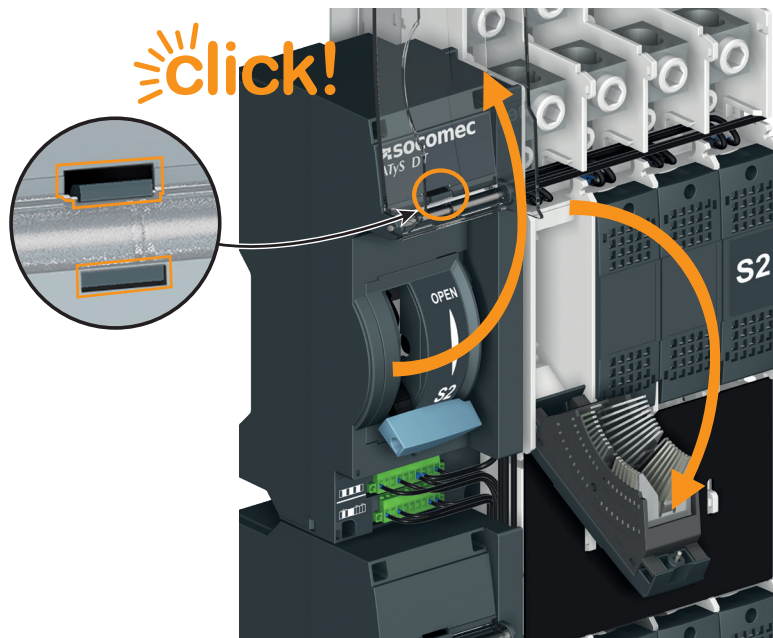
DANGER ! More than one live circuit! Disconnect all sources of supply before servicing and/or using the manual operation.



Unscrew both handle cover to access the handle and unscrew the arc chute cover top screw to inspect contacts.



Note: controller will be "NOT IN AUTO" mode which will inhibit controller automatism and show the corresponding message, when the cover is unscrewed.



Push back the plastic cover until it is clearly fixed in place, for contact inspection, the arc chute clamp will be maintained in the open position if the switch is mounted vertically in the enclosure.

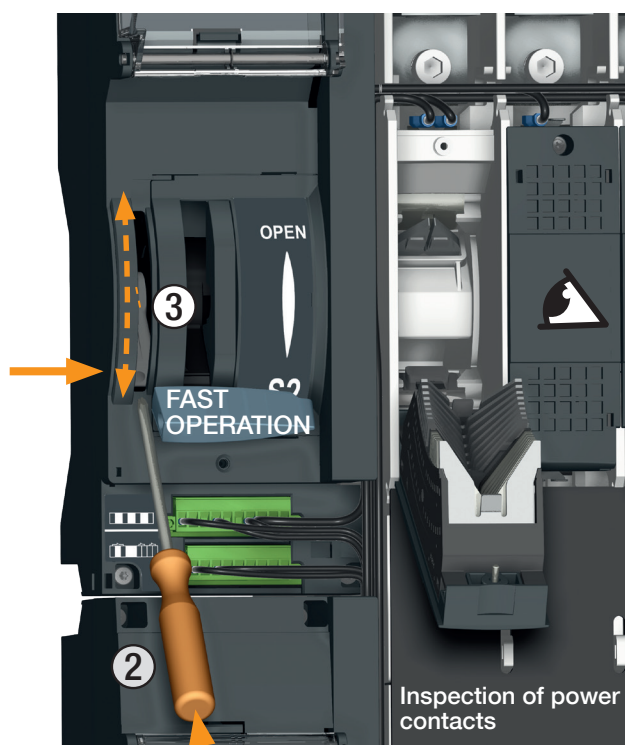
Once the handle cover is open users will have access two operating modes:

- Using Standard operation handle (marked “FAST OPERATION” on the image below) which will operate contacts at the same speed as they would normally operate using electrical operation, independently of the speed used to operate the handle.
- Using the maintenance operation handle accessible by sliding the cover indicated by the orange arrow below and inserting a screwdriver (0.25 in / 6mm diameter max) in the socket revealed, the screwdriver can then be used as a handle to change the switch position.

When using this handle the movement of the contacts will directly be linked to the movement of the handle, this allows users to move the contacts slowly for easier inspection of switch mechanisms and contacts.



Note: after using the maintenance operation it is recommended to do at least one manual operation with the Standard operation handle (Fast operation) before putting back in service.



0.25 in / 6mm diam max.
SLOW OPERATION



CAUTION ! Once all manual operations are completed make sure to screw back the arc chutes and plastic protection cover in place, tightening torque 17.7 Lb.in (2 N.m) using PH2 type screwdriver.

When using the handles to change position:



1. Connecting to source 2:

To connect the load to Source 2 (S2) position both handle to the bottom position (top handle to S2, bottom handle to OPEN).

2. Connecting to source 1

To connect the load to Source 1 (S1) position both handle towards the top (top handle to OPEN, bottom handle to S1).

3. Connecting to center off

To connect the load to center off (OPEN) position the top switch handle to the top position and the bottom switch handle to the bottom position.

4. Interlocking mechanism

The mechanical interlock ensures that S1 and S2 are mutually exclusive and inhibits one switch from being closed unless the other switch is open.



WARNING ! When manually switching always place one of the two handles in the OPEN position BEFORE switching the second handle.

8.2. Electrical manual operation

Manual Operation (CTRL mode): it allows the user to take the control of the commands sent by the controller and the automatic procedure is disabled.

To enter manual mode, click the Manual operation button:



The LCD will prompt the user to enter the operator password. The Manual mode LED will light up and the manual operation buttons will be enabled. Select **S1** to switch to source 1, **S2** to go to source 2 and **O** to go to center off position (if existing).



Note: in manual mode, if a source is lost, the genset (if any) will start and the controller will not force an automatic transfer. The controller will remain in manual mode until reverted to Auto by the user.

8.3. LOAD TEST and NO LOAD TEST

Test Mode : This allows an authorized maintenance person to perform a transfer to backup source (default Source 2) and to decide when to go back to the priority source (default Source 1). The testing of the ENGINE START can be performed using a NO LOAD TEST test in the menu or assigning the TEST button to this function. The TEST mode can be launched from both MANUAL or AUTOMATIC modes.

To switch to TEST mode, make sure there are no external inhibitions and click the automatic Test button:



The LCD will prompt the user to enter the operator password. The TEST mode LED will light up.



Note: the switch may transfer as soon as TEST mode has been enabled, respecting the elevator timers, in-phase timers (for open transition switches with positions I-II) and center-off position timer (if the switch has a 0 position).

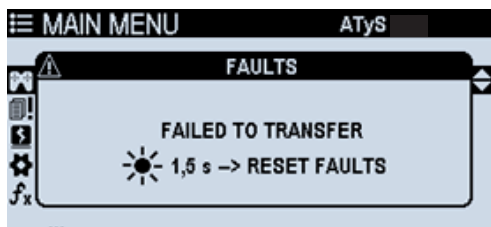
8.4. Clearing faults

For faults with a pop-up, the pop-up will either be cleared when the fault is cleared or by pressing any button on the front face of the controller. The total number of faults logged on the controller is dynamic, whilst the total number of “faults + alarms” is 100. Total events excluding faults and alarms 3000 and uses a FIFO listing.

To clear Faults through the HMI, it is possible through the LOG/FAULTS menu with the option “PRESS OK TO CLEAR FAULTS”, using the configurator profile password. There is also a shortcut by holding the  button for 1.5s and validating on the pop-up that appears. If the fault is still active, it will be inside the log “in progress” but the fault

LED and output will be off. If the faults are no longer active, they will be logged in the “history” log.

Clearing the fault will be automatically proposed by the controller through a pop-up:



8.5. Recommendations for maintenance

To clean the front face of the equipment, use a soft cloth with water and non-abrasive liquids.

The ATyS C66 controller is conceived to be a maintenance free controller however, it is recommended to perform visual inspections periodically on the device, checking the connections, that the display screen is functional and the LED using the lamp test button and ensuring the correct functioning with the switching device and with any possible associated software.

As a best practice, perform at least one full cycle with your equipment (solution with the controller + transfer switch) every year.

The ATyS DT shall be maintained in accordance with industry standards and as per this manual.

As per NFPA 110 requirements for emergency and standby power systems the ATyS DT should be inspected and should be exercised under load at least monthly.

Refer to the manufacturer's instructions for any manual, non-electric, offload operations recommended for service.

There are no user serviceable parts in the controller except for the RTC replaceable battery. In case of a malfunction, do not attempt to open the product and contact your local supplier. In this case the model, firmware version and serial number of the unit will be useful to provide and can be found inside the ABOUT menu as well as on the product labels and QR code on the rear side of the controller.

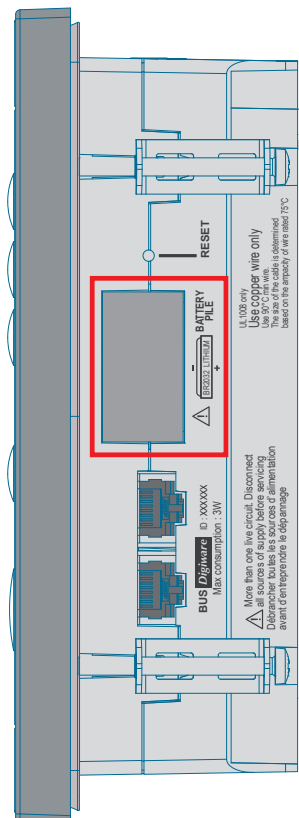
RTC Battery replacement

Depending on the working and environmental conditions the battery will need to be replaced when the controller displays a message «RTC Low Battery». A low battery may result in the time & date at power up to be incorrect.

To replace the RTC battery:

1. Safely disconnect all power and voltage to the ATS controller
2. Disconnect all terminals from the controller
3. Release the cover on the side of the controller containing the battery
4. Remove the old battery with an appropriate plastic tool
5. Place the new battery on the correct side (polarity) in the holder from the pcb and push with the finger until it reaches the position of the old one.
6. Put back the plastic cover on the side of the controller and pressure slightly until it perfectly fits.
7. Connect back the terminals to the controller
8. Power up and adjust time and date

For battery replacement, use a BR2032 coin-type battery cell.



9. TROUBLE SHOOTING

Fault on screen	Description (Potential cause)	Action
Unexpected transfer	The controller receives information that position has been changed without having sending a position change order.	Make sure that the "COVER OPEN" input is correctly configured (input 5) and that the cable on input 5 is intact.
Failed to transfer	Position order has been sent to the the switch but position was not reached.	- Make sure that the voltage is present on the source of destination and that it is within the coil operation range of 194-304 VAC. - Check that position inputs are correctly configured (Input 1 : Position 1, input 2 position 2) and that the cable is not damaged.
Maximum operation per minutes	The maximum number of operations has been reached.	- Wait a few minutes before sending new orders to transfer. - Check that the controller voltage and frequency thresholds are adapted to your network.
Maximum password attempts reached	The user has entered too many incorrect passwords.	Will automatically reset after a certain time (time to reset is user configurable using the controller maintenance password).
Genset Fail start	Genset has not started within the configured time.	- Check your genset. - Increase the genset startup timer to allow more time to start the genset.
COVER OPEN	Input 5 linked to the switch manual handle cover is active.	Check that the cover protecting the manual handle is correctly screwed in place.

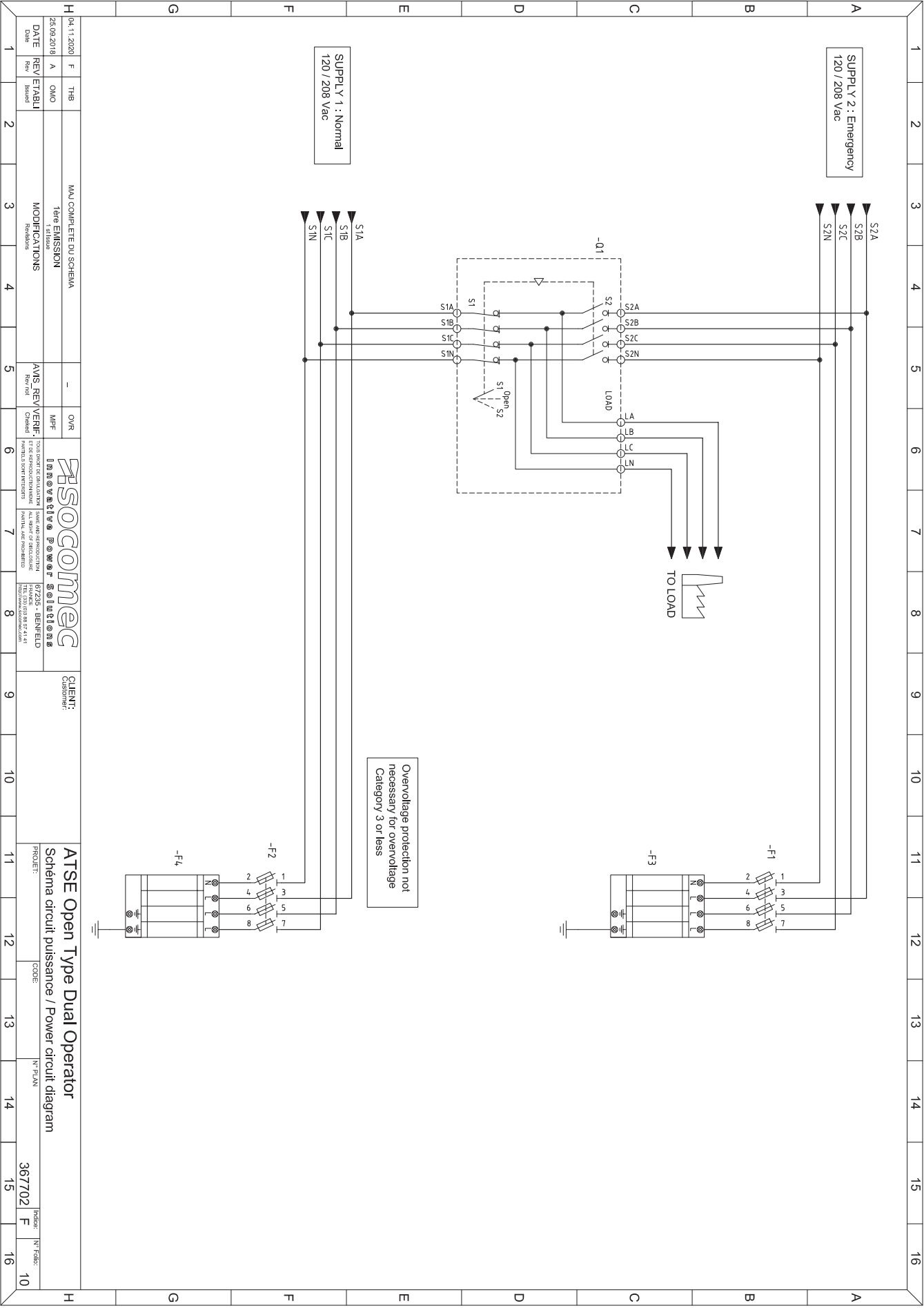
ANNEX I. SINGLE LINE DIAGRAMS

ATSE Open Type Dual Operator

ATyS DT
Wiring Diagram : 120 / 208 Vac 3P+N

[illegible]

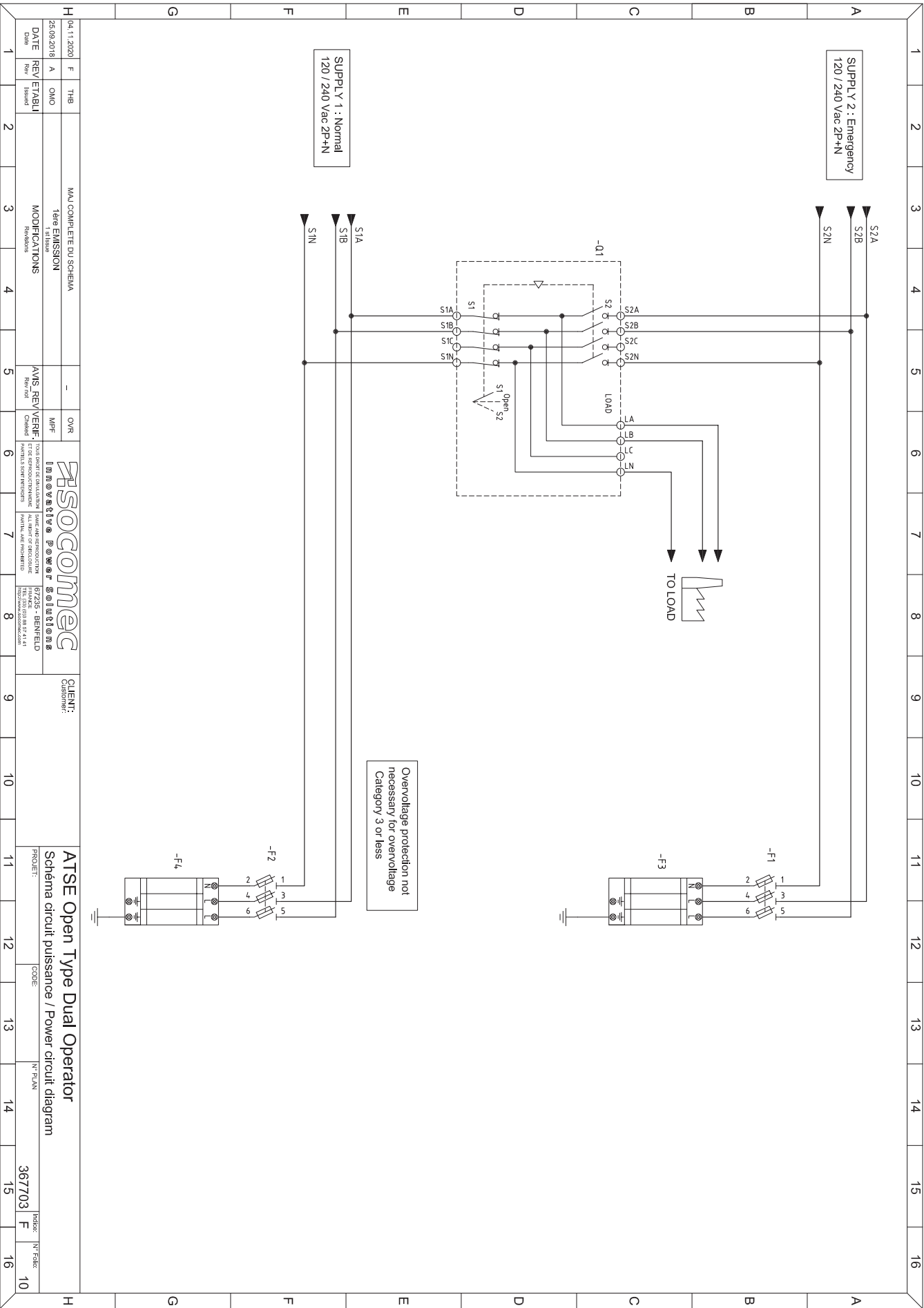
[illegible]

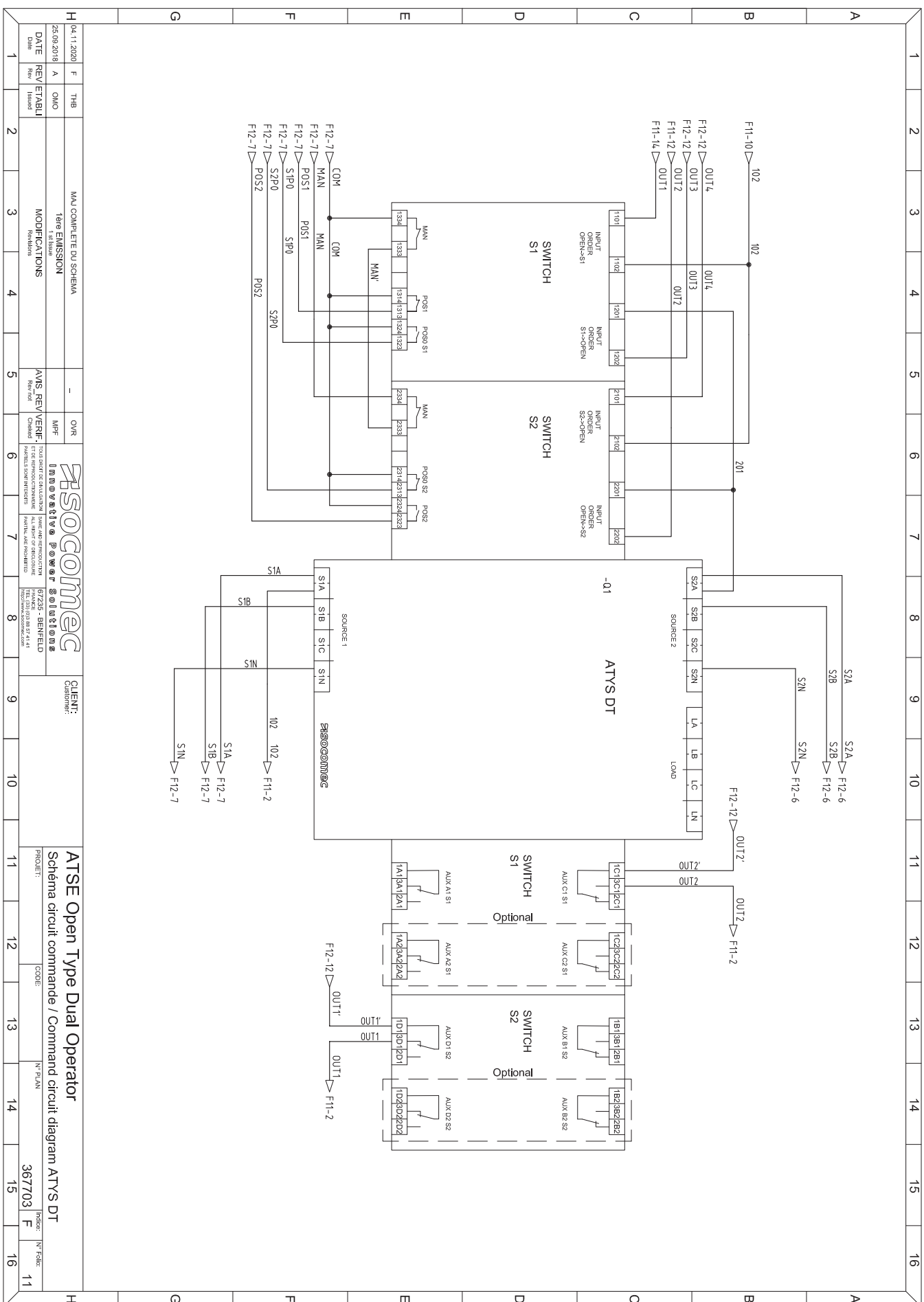


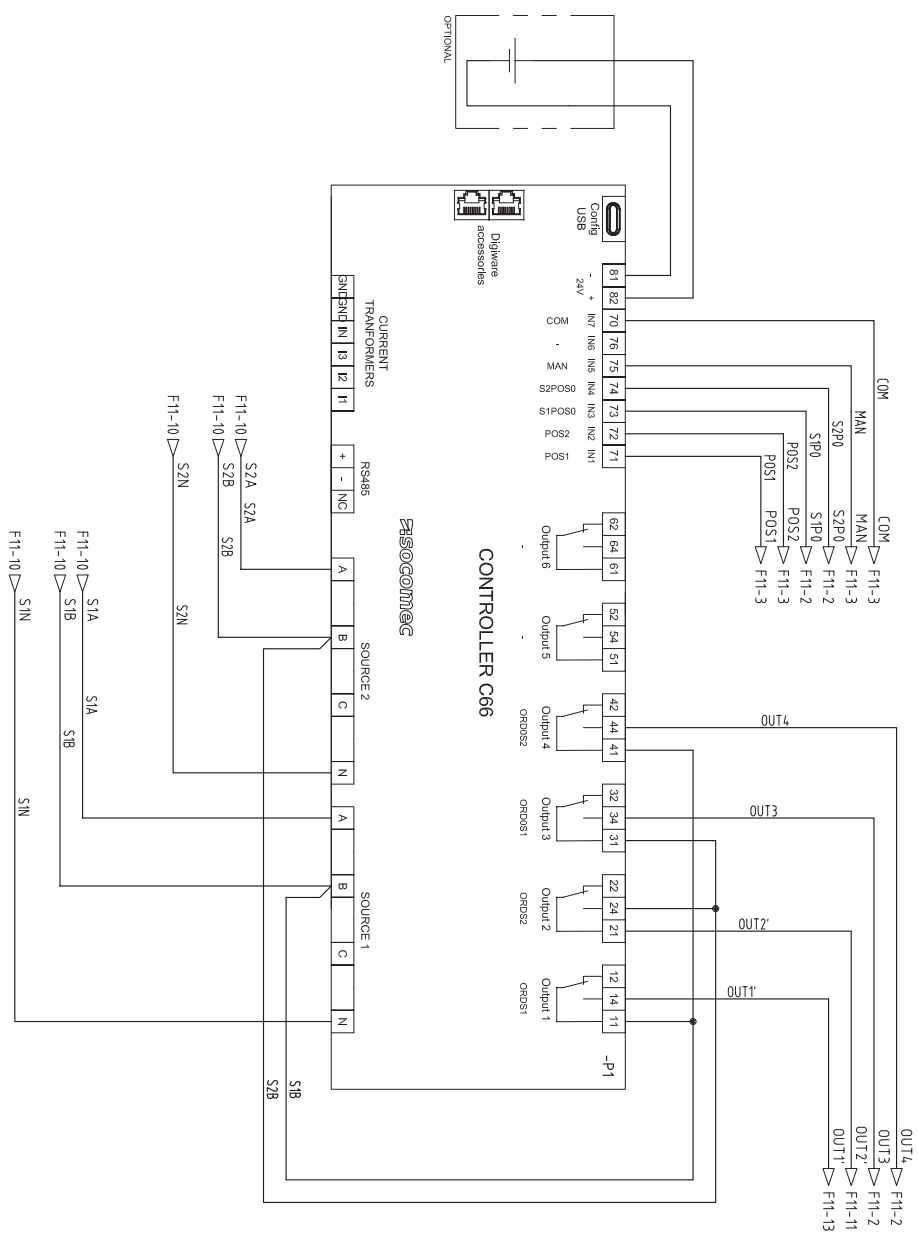
ATSE Open Type Dual Operator

ATyS DT
Wiring Diagram : 120-240 V ac 2P+N

[illegible]







H	04.11.2020	F	THB	MAL COMPLETÉ DU SCHEMA				O/R	-	ASOCOMEc				CUSTOMER:	ATSE Open Type Dual Operator						H
	25.09.2018	A	OMO	1ère EMISSION			1st Issue	N/P		Innovative Power Solutions					Schéma circuit commande / Command circuit diagram CONTROLLER C66						
	DATE REV ET/OU REVISI	REVISION	MODIFICATIONS	Revisions	AVIS REVENIR	Revised	TOTAL SHEET DE DRAUGHTING	SAME AND REPRODUCTION	67235 - BENFIELD					PROJECT:	CODE:	N° PLAN	Info:	N° Folio:	12		
	1	2	3	4	5	6	7	PARTIELS NON PERMIS	TEL: 020 90 88 74 41 Fax: 020 90 88 74 41 info@asocomec.com	8	9	10	11	12	13	14	15	16			

ATSE Open Type Dual Operator

ATyS DT

Wiring Diagram : 240 V ac 2P

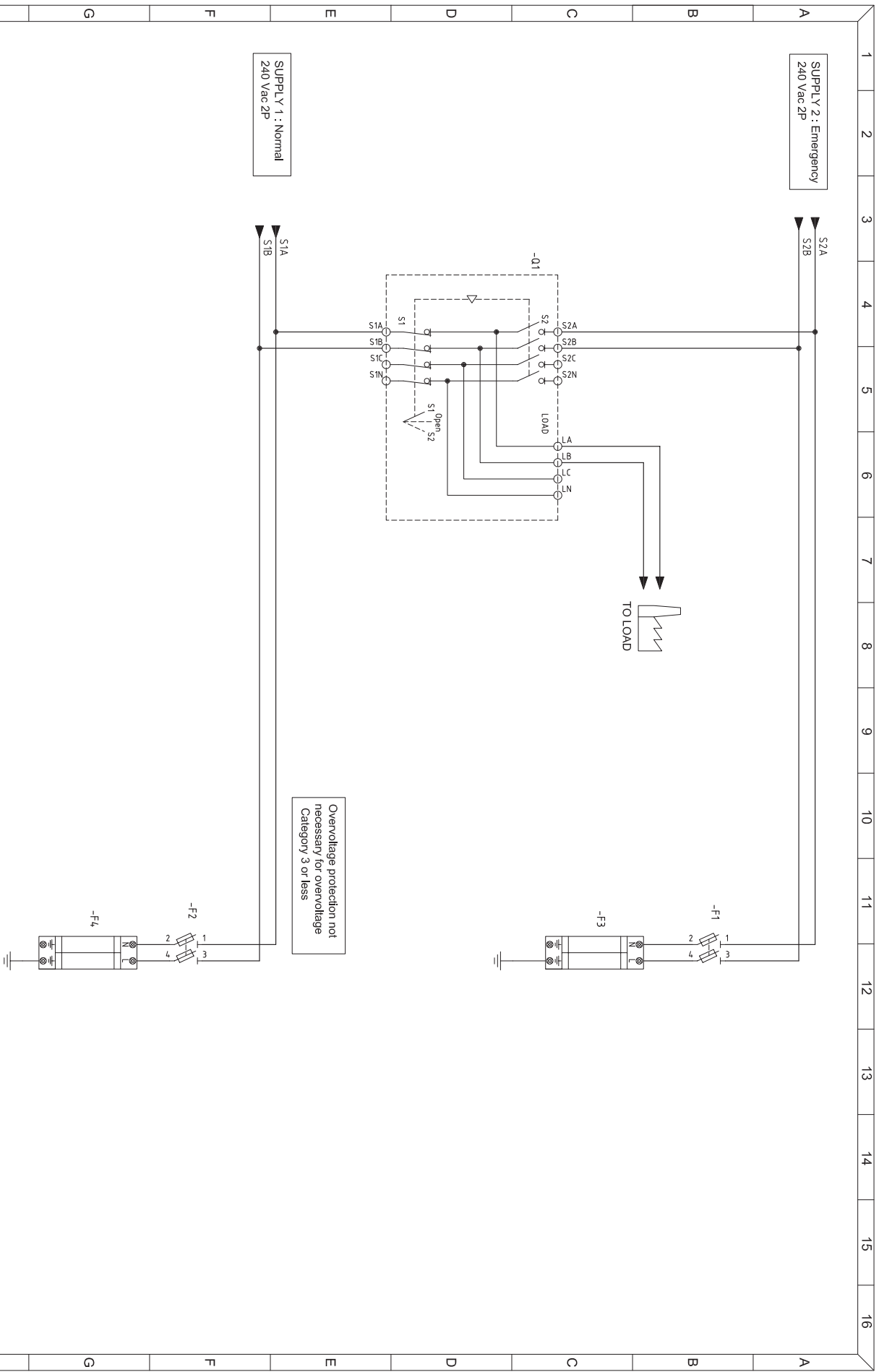


ATSE Open Type Dual Operator

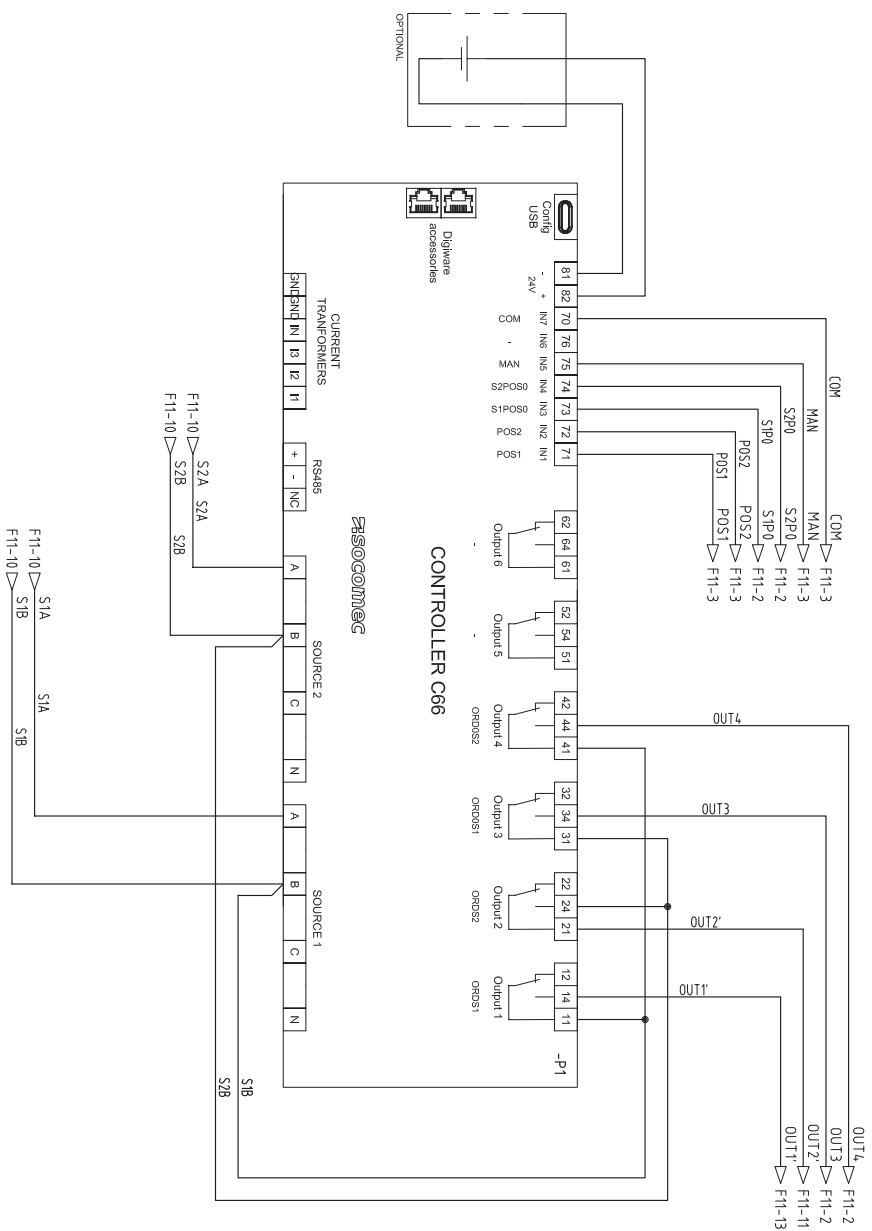
ATYS DT

Wiring Diagram : 240 Vac 2P





H															
A															
04.11.2020		1ère EMISSION													
A		1st Issue													
DATE		REVISED													
Date		Rev													
1		2		3		4		5		6		7		8	

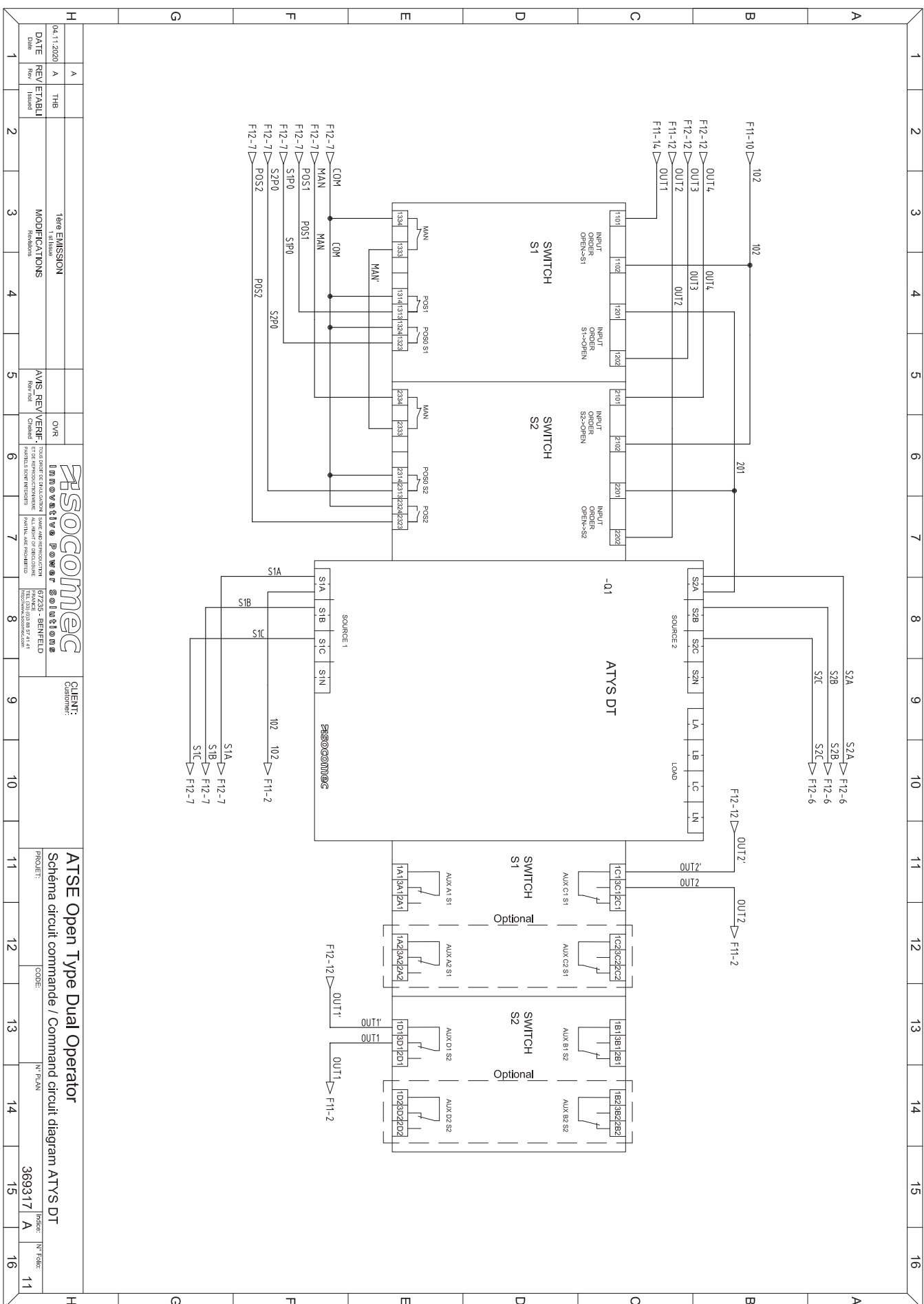
[illegible]

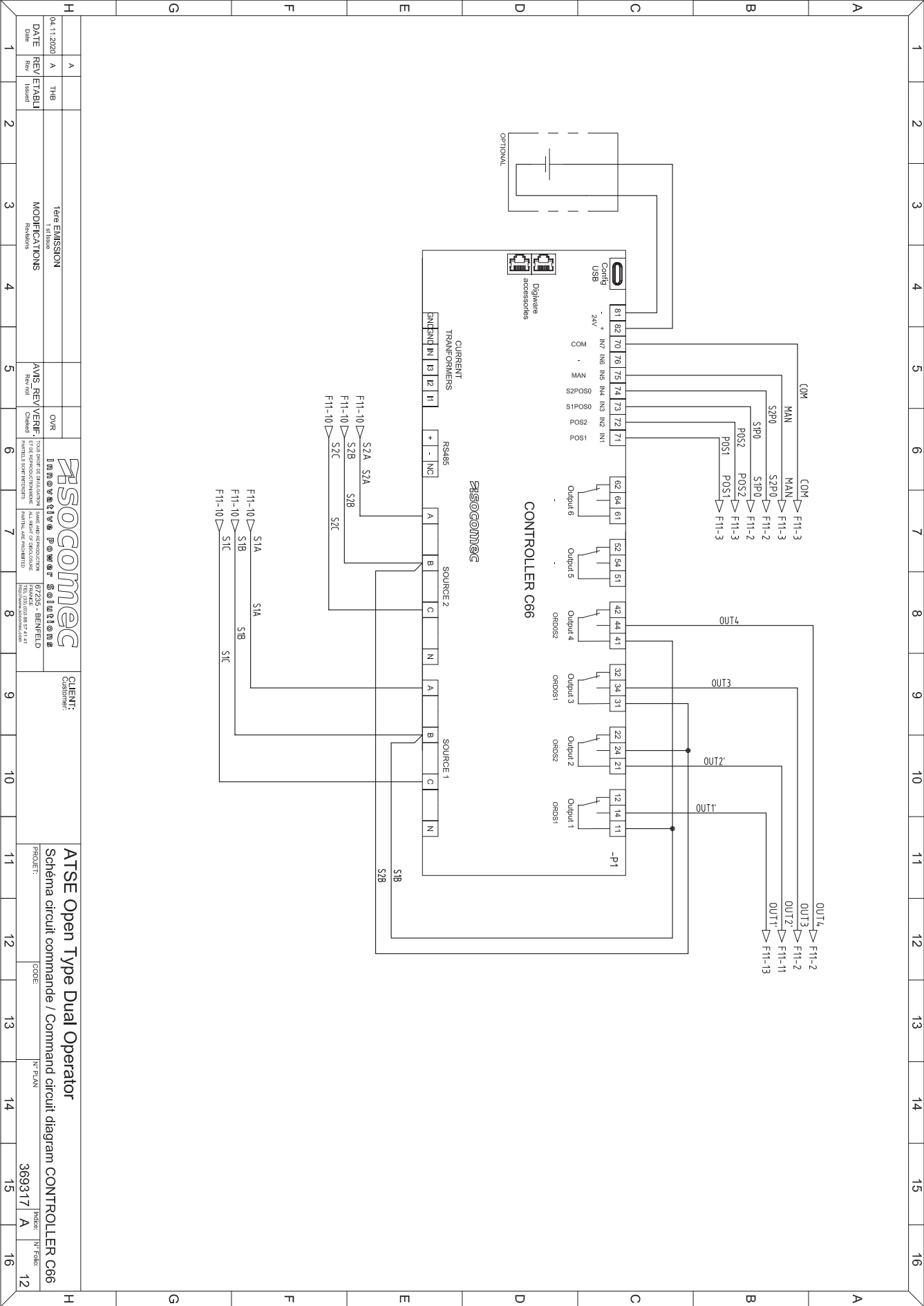
ATSE Open Type Dual Operator

ATYS DT Wiring Diagram : 208 Vac 3P

[illegible]

1																2																3																4																5																6																7																8																9																10																11																12																13																14																15																16															
A																B																C																D																E																F																G																H																																																																																																																																															
FOLIO																DESIGNATION FOLIO																INDICE																DATE																																																																																																																																																																																																															
01																Page de garde / Cover sheet																A																04.11.2020																																																																																																																																																																																																															
02																Liste des folios / Sheet list																A																04.11.2020																																																																																																																																																																																																															
10																Schéma circuit puissance / Power circuit diagram																A																04.11.2020																																																																																																																																																																																																															
11																Schéma circuit commande / Command circuit diagram ATYS DT																A																04.11.2020																																																																																																																																																																																																															
12																Schéma circuit commande / Command circuit diagram CONTROLLER C66																A																04.11.2020																																																																																																																																																																																																															





ATSE Open Type Dual Operator

ATyS DT
Wiring Diagram : 277 / 480 Vac 3P+N

[illegible]

[illegible]

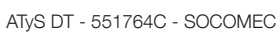
ATSE Open Type Dual Operator

ATyS DT

Wiring Diagram : 480 Vac 3P

[illegible]

[illegible]



CORPORATE HQ CONTACT:
SOCOMECSAS
1-4 RUE DE WESTHOUSE
67235 BENFELD, FRANCE

www.socomec.com



551764C

 **socomec**
Innovative Power Solutions