



549691D



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ATyS p

125 A - 630 A

Motorised Source Changeover Switch
Automatic Transfer Switching Equipment

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 p
Qty 1 x Emergency handle and fixing clip
Quick Start Guide instruction sheet

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 SOCOMEC website.

- This product must always be installed and commissioned by qualified and approved personnel.
- Maintenance and servicing operations should be performed by trained and authorised 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).

- For 125 - 160 A (Uimp = 8 kV). Terminations must respect a minimum of 8 mm clearance from live parts to parts intended to be earthed and between poles.

- For 200 - 630 A (Uimp = 12 kV). Terminations must respect a minimum of 14 mm clearance from live parts to parts intended to be earthed and between poles.

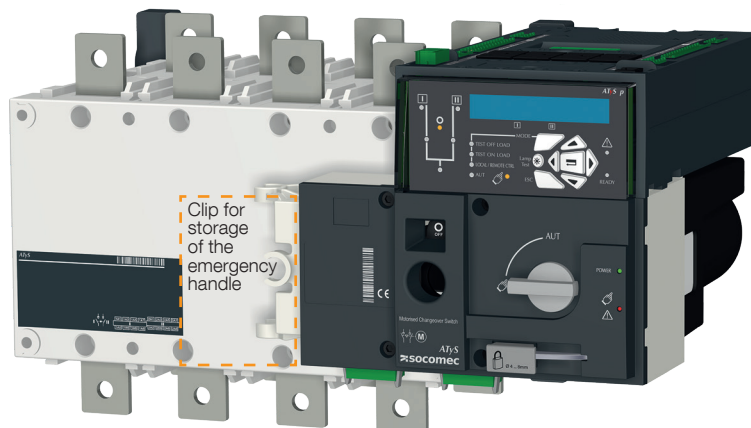
Failure to observe good engineering practises as well as to follow these safety instructions may expose the user and others to serious injury or death.

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

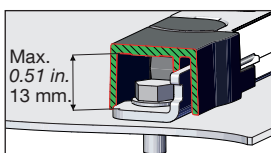
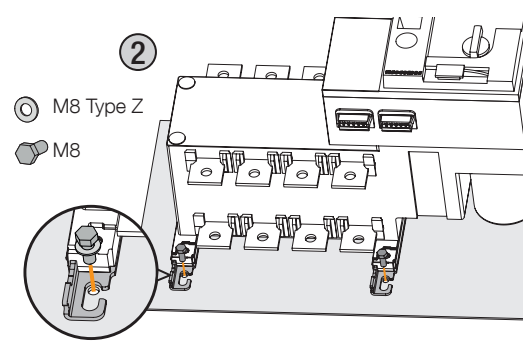
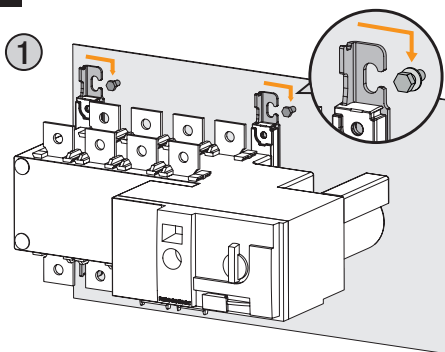
Accessories

- Bridging bars and connection kits.
- Control voltage transformer (400 VAC → 230 VAC).
- DC power supply (12/24 VDC → 230 VAC).
- Phase barriers.
- Terminal shrouds / Terminal screens.
- Auxiliary contacts (Additional).
- Padlocking in 3 positions (I - O - II).
- Lockout accessories (RONIS - EL 11 AP).
- Door escutcheon frame.
- ATyS D20 Interface (remote control / display unit).
- RJ45 cable for ATyS D20.
- Voltage sensing kit.
- Current transformers.
- Plug-in optional modules: RS485 MODBUS communication, 2 inputs/2 outputs, Ethernet communication, Ethernet communication + RS485 JBUS/MODBUS gateway, Analogue outputs, Pulse outputs.

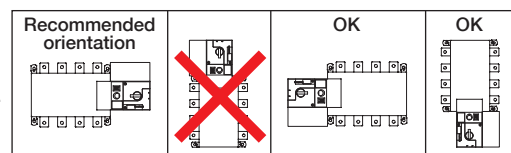
For further details refer to the product instruction manual under chapter "Spares and Accessories".



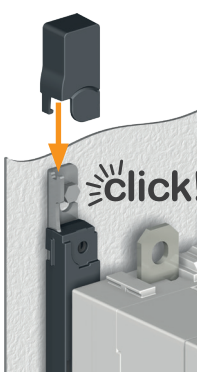
1 Installation



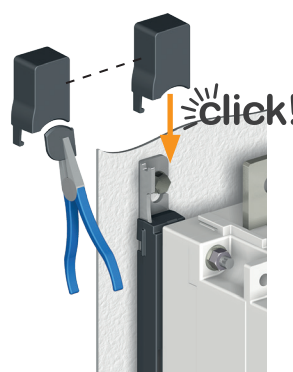
- ⚠ Caution: ensure that the product is installed on a flat rigid surface.



3 Mounting

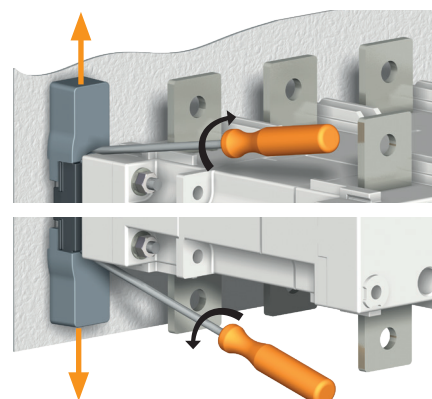


125 A to 400 A.



500 A, 630 A.

Removing covers



2 Power Terminal Connections

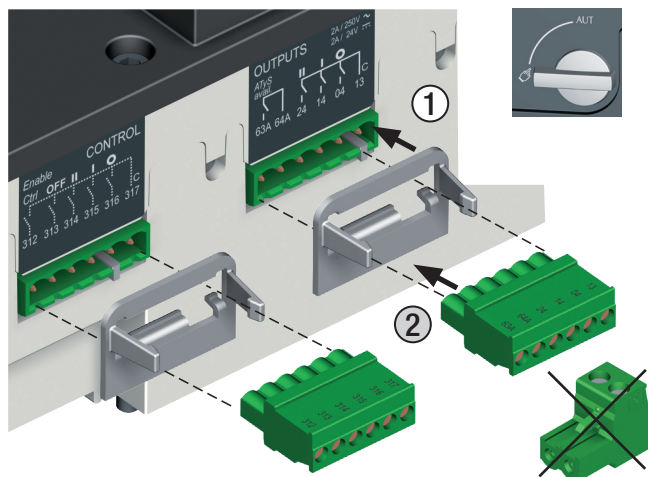
To be connected using terminal lugs, rigid or flexible busbars.

	FRAME B3			FRAME B4			FRAME B5	
	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A
Minimum cable section Cu (mm²)	35	35	50	95	120	185	2x95	2x120
Recommended Cu busbar cross-section (mm²)	-	-	-	-	-	-	2x32x5	2x40x5
Maximum Cu cable cross-section (mm²)	50	95	120	150	240	240	2x185	2x300
Maximum Cu busbar width (mm)	25	25	25	32	32	32	50	50
Type of screw	M8	M8	M8	M10	M10	M10	M12	M12
Recommended tightening torque (lb.in/N.m)	73.46/8.3	73.46/8.3	73.46/8.3	177.02/20	177.02/20	177.02/20	354.04/40	354.04/40
Maximum tightening torque (lb.in/N.m)	115.06/13	115.06/13	115.06/13	230.13/26	230.13/26	230.13/26	398.30/45	398.30/45



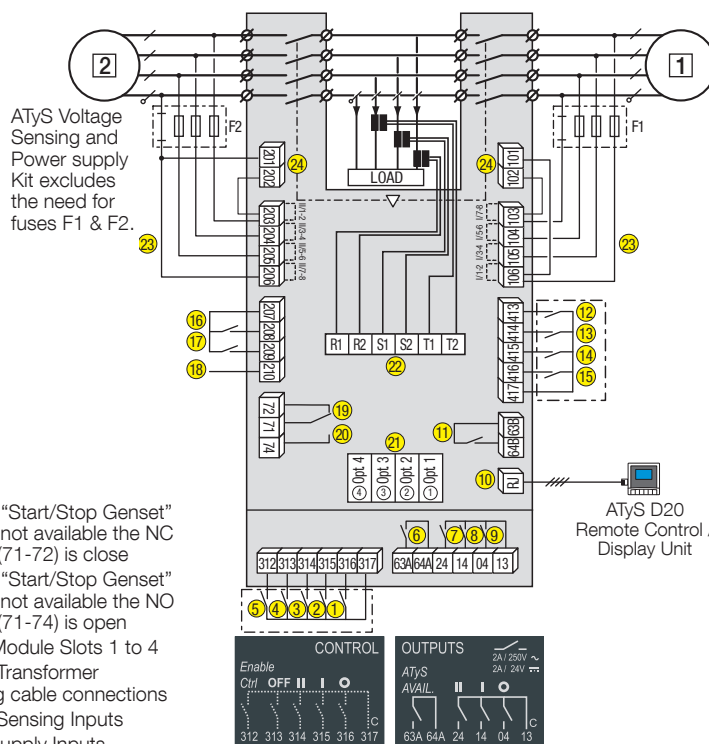
3 CONTROL / COMMAND Terminals

Ensure that the product is in Manual Mode.



4 Power Supply, Sensing and Control wiring (ATS Controller)

Example: Control wiring for a 400 VAC application having a 3 phase and neutral supply.



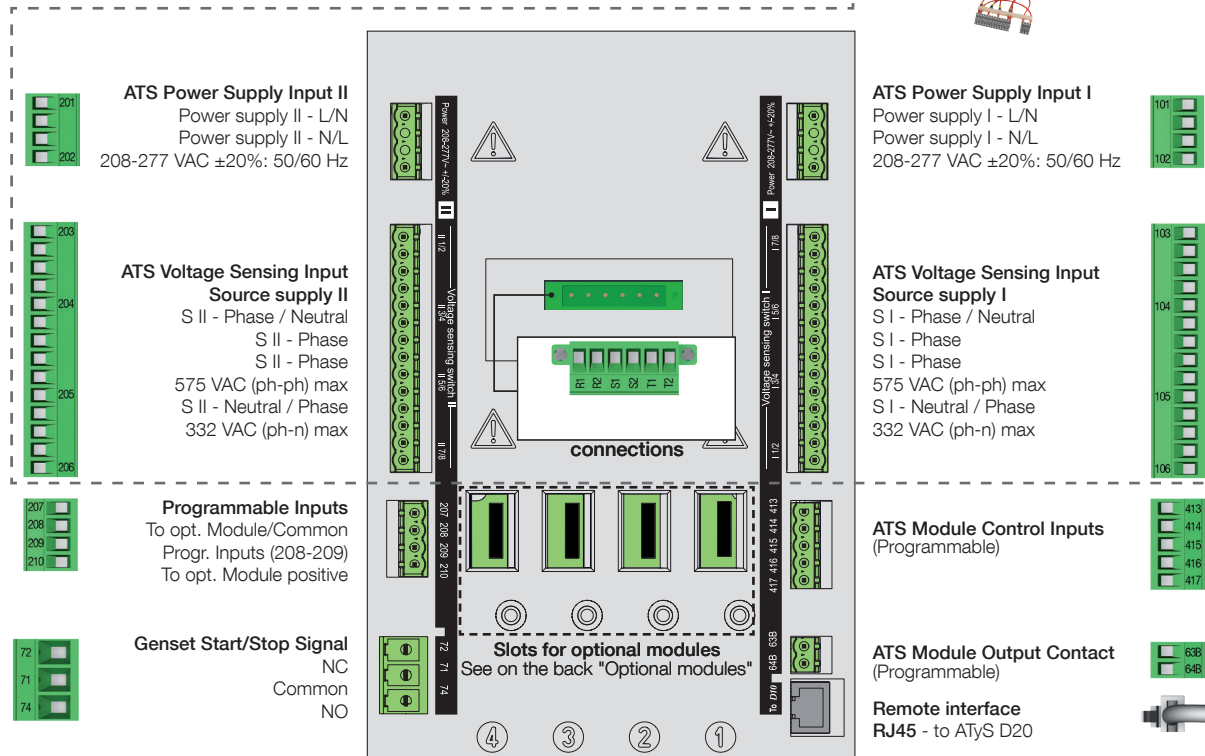
- 1 preferred source
- 2 alternate source
- 1. Position 0 order
- 2. Position 1 order
- 3. Position 2 order
- 4. Zero position priority order
- 5. Remote Control Enable (Priority over Auto)
- 6. Product Available output (Motor)
- 7. Position II aux contact
- 8. Position I aux contact

- 9. Position 0 aux contact
- 10. O/P to ATyS D20 remote unit
- 11. Programmable Output Contact. By default set to ATS Product Available - Normally Open
- 12-15. Programmable Inputs 1-4
- 16-17. Programmable Inputs 5-6
- 18. Aux. Supply (207/210) to be used with ATyS optional I/O modules

- 19. Contact "Start/Stop Genset" : if S1 is not available the NC contact (71-72) is close
- 20. Contact "Start/Stop Genset" : if S1 is not available the NO contact (71-74) is open
- 21. Option Module Slots 1 to 4
- 22. Current Transformer incoming cable connections
- 23. Voltage Sensing Inputs
- 24. Power Supply Inputs

Connect the product with a cable of section of 1,5 to 2,5 mm².

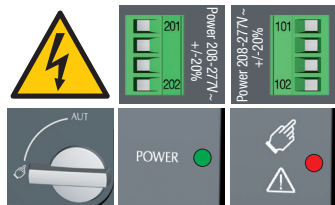
Screw M3 - Tightening torque: min.: 0.5 Nm - max.: 0.6 Nm / min.: 4.43 lbin - max.: 5.31 lbin



5 Check

Whilst in manual mode, check the wiring and if ok power up the product.

LED "Power" Green: ON
LED Manual/Fault Red: ON



6 Programming the ATyS p

The ATyS p is to be programmed powered up and after wiring verification tests. This may either be done through the front of the ATS Controller using the keypad or with the user-friendly Easy Config software.

For convenience, we recommend to use the Easy Config software. (Downloadable free from www.socomec.com).

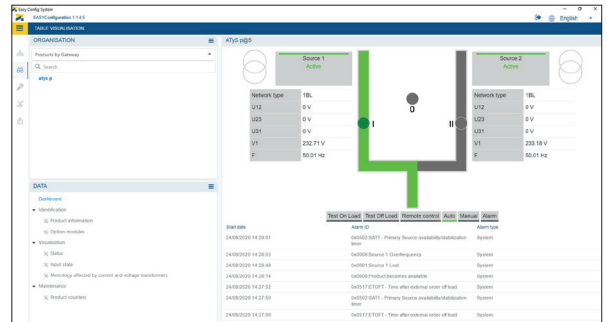
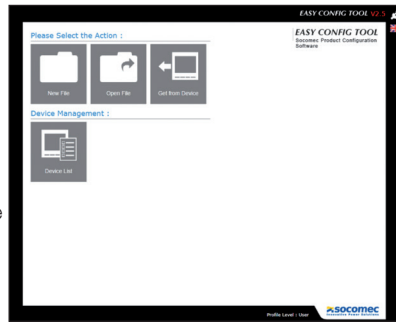
The ATyS p is delivered with default setting values based on most used customer application requirements. The minimum configuration parameters that must be programmed are the type of network and application together with the voltage and frequency nominal values. ATyS p Auto Configuration makes the setup of Volts, Hz, Phase rotation and Neutral Position quick and easy.

A - Programming with Easy Config Software

To program the ATyS p using Easy Config software simply follow the setting boxes from left to right until all desired settings in each window have been completed. Help pop ups are included to show the minimum and maximum setting values allowed. The software includes most SOCOMEC products so before programming click NEW and select the product "ATyS p" from the list of products available.

When the ATyS p is powered and communicating, the software will include a screen to monitor and display the ATyS p status.

Control through software (such as changing switch position I-O-II) is also possible when in Super User Mode.



B - Programming with the ATyS p keypad

1	2	3	4	5	6	7	8
SETUP	VOLT. LEVELS	FREQ. LEVELS	PWR. LEVELS	TIMERS VALUE	I-O	COMM (10)	DATE/TIME
NETWORK 4NBL	OV. U I 115%	OV. F I 105%	OV.P I 0000 kVA	1FT 0003 SEC	IN 1 --- NO	DHCP NO (9)	YEAR
AUTOCONF NO (7)	OV. U HYS I 110%	OV. F HYS I 103%	OV.P HYS I 0000 kVA	1RT 0300 SEC	IN 2 --- NO	IP 1-2 192.168. (9)	MONTH
NEUTRAL AUTO	UND. U I 085%	UND. F I 095%	OV.P II 0000 kVA	2FT 0003 SEC	IN 3 --- NO	IP 3-4 .002.001	DAY
ROT PH. ---	UND. U HYS I 095%	UND. F HYS I 097%	OV.P HYS II 0000 kVA	2RT 0005 SEC (2)	IN 4 --- NO	GAT1-2 000.000.	HOUR
CHECK ROT YES	UNB. U I 00%	OV. F II 105%		2AT 0005 SEC (1)	IN 5 --- NO	GAT3-4 .000.000	MINUTE
NOM. VOLT 400 V	UNB. U HYS I 00%	OV. F HYS II 103%		2CT 0300 SEC (1)	IN 6 --- NO	MSK1-2 255.255. (9)	SECOND
NOM. FREQ 50 Hz	OV. U II 115%	UND. F II 095%		2ST 0030 SEC (1)	IN 7 --- NO (8)	MSK3-4 .255.000 (9)	
APP M-G	OV. U HYS II 110%	UND. F HYS II 097%		DBT 0003.0 SEC	IN 8 --- NO (8)	ADDRESS 005	
PRIO TON NO (1)	UND. U II 085%	(1) When «APP» is set to «M-G»		TOT UNL (1)	IN 9 --- NO (8)	BDRATE 9600	
PRIO EON NO (3)	UND. U HYS II 095%	(2) When «APP» is set to «M-M»		TOT 0010 SEC (1)	IN10 --- NO (8)	STOP BIT 1	
PRIO NET 1 (2)	UNB. U II 00%	(3) When one of the I/P is set to «EON»		T3T 0000 SEC (1)	IN11 --- NO (8)	PARITY NONE	
RETRANS NO	UNB. U HYS II 00%	(4) When one of the I/P is set to «EOF»		TFT UNL (1)	IN12 --- NO (8)		
RTO OFF		(5) When one of the O/P is set to «LSC»		TFT 0600 SEC (1)	IN13 --- NO (8)		
CT PRI 100		(6) When one of the O/P is set to «EES»		E1T 0005 SEC (3)	IN14 --- NO (8)		
CT SEC 5		(7) If the product is in manual mode		E2T UNL (3)	OUT 1 POP NO		
S1=SW2 NO		(8) With optional I/O modules		E2T 0010 SEC (3)	OUT 2 --- NO (8)		
BACKLGHNT INT		(9) With Ethernet module		E3T 0005 SEC (3)	OUT 3 --- NO (8)		
CODE P 1000		(10) Only when a comm module is used		E5T 0005 SEC (4)	OUT 4 --- NO (8)		
CODE E 0000		(11) When LOAD CTRL function is activated		E6T LIM (4)	OUT 5 --- NO (8)		
BACKUP SAVE		(12) When RTO is different to OFF		E6T 0600 SEC (4)	OUT 6 --- NO (8)		
LOAD CTRL NO		(13) When ONDELAY is different to OFF		E7T 0005 SEC (4)	OUT 7 --- NO (8)		
ONDELAY OFF				LST 0004 SEC (5)	OUT 8 --- NO (8)		
AUXSUPPLY NO (1)				EET 0168 H (6)	OUT 9 --- NO (8)		
COMMIT NO				EDT 1800 SEC (6)			

MODE

TEST OFF LOAD

TEST ON LOAD

LOCAL / REMOTE CTRL

AUT

ESC

17

14

ATyS p devices may also be programmed through the ATS controller keypad. This programming method is necessary for products not equipped with Ethernet or Modbus communication modules that facilitate programming through Easy Config software described above. The keypad is a useful interface and programming method most especially when changing a few parameters or simply interrogating the product.

Programming access: Press and hold for 5 s "Validation" push button (17). Access through the keypad is possible in Automatic or Manual mode, when the product is in a stable position (I, 0 or II) with at least one supply source available. Programming is not accessible whilst any cycle sequence is running.

To change the configuration: Enter code (factory code = 1000) using navigation push buttons (14).

Programming exit: Press and hold for 5 s "Validation" push button (17).

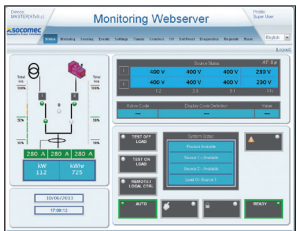
Note 1: Values as listed above are the setting values by default.

Note 2: Ensure that the Default Network Setting and Application match the installation or change accordingly before using Auto Configuration.

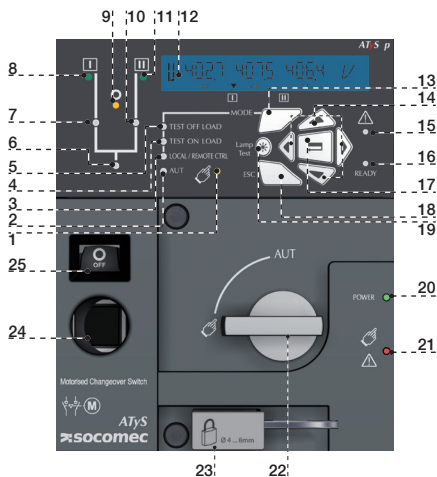
3 phase / 4 wire	3 phase / 3 wire	2 phase / 3 wire	2 phase / 2 wire	1 phase / 2 wire
4NBL 4BL 1 2 3 N	3NBL 3BL L1 L2 L3 NM	2NBL 2 3 1	2BL 3 1	1BL N 1

Setup by Auto Configuration (Volts, Hz, Neutral pos., Ph rotation)	
Press 5s	
Go To	1 SETUP
Scroll to	AUTOCONF
Enter code	1000
Set to	YES
Press 60 ms	
LEDs flash	
Save : press 5s	
Note: Source I or source II must be available to set by Auto Configuration.	

Communication between the software and the ATyS p may be done through the Ethernet/Modbus TCP or Modbus RTU modules that are available as an option. The ETHERNET / MODBUS modules are to be installed in one of the slots provided in the ATYS p ATS control unit. Easy Config may be installed on a PC connected through ETHERNET or MODBUS modules for a direct ATyS configuration, either isolated with possibility to create a specific configuration for a later upload and use in ATyS.



1. **MANUAL Mode LED indication.** (Yellow steady light when in Manual Mode).
2. **AUTO Mode LED indication** Green steady light when in Auto mode with no timers running.
Green flashing light when in Auto with timers running.
3. **LOCAL / REMOTE CONTROL Mode LED indication.**
Yellow steady light when in Local / Remote control mode.
Remote control mode is achieved with the Auto/Manu selector switched to Auto and terminals 312 closed with terminal 317.
Remote control orders are received through closing 314 to 316 with 317.
REMOTE Control is also achievable through Easy Config ATyS p software when connected to the product through Ethernet or MODBUS. (Optional modules). Local Control selectable and operable through the ATyS p keypad.
4. **TEST ON LOAD CONTROL Mode LED indication.** (Yellow steady light when in TONEON mode)
5. **TEST OFF LOAD CONTROL Mode LED indication.** (Yellow steady light when in TOF/EOF mode).
6. **Load Supply ON LED.** (Green when the load is supplied).
7. **Switch 1 LED position indication.** (Green when in position 1).
8. **Source supply I availability LED indication.** (Green when supply I voltage is within the set limits).
9. **Zero position LED indication.** (Yellow when in position 0).
10. **Switch 2 LED position indication.** (Green when in position 2).
11. **Source supply II availability LED indication.** (Green when supply II voltage is within the set limits).
12. **LCD Display Screen :** (Status, measurement, timers, counters, events, faults, programming . . .)
13. **MODE key** to shift between operation modes.
14. **Navigation Keys** to browse through the ATyS p menus without software.
15. **FAULT LED indication.** (Red steady light in case of an ATS controller internal fault. Switch the product from Auto to Manual and back to Auto to reset a fault condition).
16. **READY LED indication.** (Green steady light : Product is powered and in AUTO, Watchdog OK, The Product is Available to changeover).
17. **Enter Key** used to enter Prog Mode (Press and hold for 5 seconds) and to validate the settings programmed through the keypad.
18. **ESC key** used to escape from a specific screen up to the main menu.
19. **Lamp test key** to check the LED's and LCD screen.
20. **Green LED Indication:** Power
21. **Red LED Indication:** Product Unavailable / Manual Mode / Fault Condition
22. **Auto / Manual mode selector switch** (Key version available as an option)
23. **Padlocking facility**
(Up to 3 padlocks of dia. 4 - 8mm)
24. **Emergency manual operation shaft location** (Accessible only in manual mode)
25. **Switch position indication window:**
I (On switch I) O (Off) II (On switch II).



Ensure that the emergency handle is not inserted in the product and turn the mode selector to the AUT position.



Figure 1: Schematic representation of the experimental design. The figure is divided into two main sections: 'Impulse logic' and 'Contactor logic'. Each section contains a 3x3 grid of task conditions. The rows are labeled 'order I', 'order 0', and 'order II' on the left, and 'position I', 'position 0', and 'position II' on the right. The columns are labeled 'Impulse logic' and 'Contactor logic' at the top. Each cell in the grid shows a horizontal bar chart with green and grey segments. A red dashed vertical line is present in each chart. A legend at the bottom indicates that the grey segment represents 'Imp. >60ms' and the green segment represents 'maintained'.

To enable control, close contact 312 with 317. For contactor logic bridge contact 316 with 317. To operate: close the contact corresponding to the desired position. To force the product to 0 position "OFF" bridge contact 313 with 317.

Fig. 7.38

Front view of the component showing overall dimensions and details:

- Overall width: F
- Overall height: B
- Top flange thickness: 9.04
- Total height from base to top of top flange: 229.5
- Base thickness: 0.83
- Distance from left edge to center of first hole: A
- Distance between centers of two holes: X
- Distance from center of last hole to right edge: C
- Distance between centers of two holes: T
- Mounting point: **Fix. M**

DETAIL A

Dimensions for Detail A:

- Outer diameter: $\varnothing 16.2$
- Inner diameter: $\varnothing 8.6$
- Flange thickness: 0.64
- Distance from center to mounting point: 0.34
- Distance from center to mounting point: 0.49
- Distance from center to mounting point: 12.5

DETAIL B

Dimensions for Detail B:

- Outer diameter: $\varnothing 16.2$
- Inner diameter: $\varnothing 8.6$
- Flange thickness: 0.34
- Distance from center to mounting point: 0.30
- Distance from center to mounting point: 7.5

DETAIL C

Dimensions for Detail C:

- Width: U
- Height: W
- Distance from center to mounting point: CA

	125 A				160 A				200 A				250 A			
	3 P		4 P		3 P		4 P		3 P		4 P		3 P		4 P	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
C	9.61	244	9.61	244	9.61	244	9.61	244	9.61	244	9.61	244	9.61	244	9.61	244
CA	0.39	10	0.39	10	0.39	10	0.39	10	0.39	10	0.39	10	0.59	15	0.59	15
F	11.28	286,5	12.48	317	11.28	286,5	12.48	317	11.28	286,5	12.48	317	12.91	328	14.88	378
M	4.72	120	5.91	150	4.72	120	5.91	150	4.72	120	5.91	150	6.30	160	8.27	210
T	1.42	36	1.42	36	1.42	36	1.42	36	1.42	36	1.42	36	1.97	50	1.97	50
U	0.79	20	0.79	20	0.79	20	0.79	20	0.79	20	0.79	20	0.98	25	0.98	25
W	0.35	9	0.35	9	0.35	9	0.35	9	0.35	9	0.35	9	0.43	11	0.43	11
X	1.10	28	0.87	22	1.10	28	0.87	22	1.10	28	0.87	22	1.30	33	1.30	33

	315 A				400 A				500 A				630 A			
	3 P		4 P		3 P		4 P		3 P		4 P		3 P		4 P	
	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>
C	9.61	244	9.61	244	9.61	244	9.61	244	12.64	321	12.64	321	12.64	321	12.64	321
CA	0.59	15	0.59	15	0.59	15	0.59	15	0.59	15	0.59	15	0.79	20	0.79	20
F	12.91	328	14.88	378	12.91	328	14.88	378	14.84	377	17.20	437	14.84	377	17.20	437
M	6.30	160	8.27	210	6.30	160	8.27	210	8.27	210	10.63	270	8.27	210	10.63	270
T	1.97	50	1.97	50	1.97	50	1.97	50	2.56	65	2.56	65	2.56	65	2.56	65
U	1.38	35	1.38	35	1.38	35	1.38	35	1.26	32	1.26	32	1.77	45	1.77	45
W	0.43	11	0.43	11	0.43	11	0.43	11	0.55	14	0.55	14	0.51	13	0.51	13
X	1.30	33	1.30	33	1.30	33	1.30	33	1.67	42,5	1.48	37,5	1.67	42,5	1.48	37,5