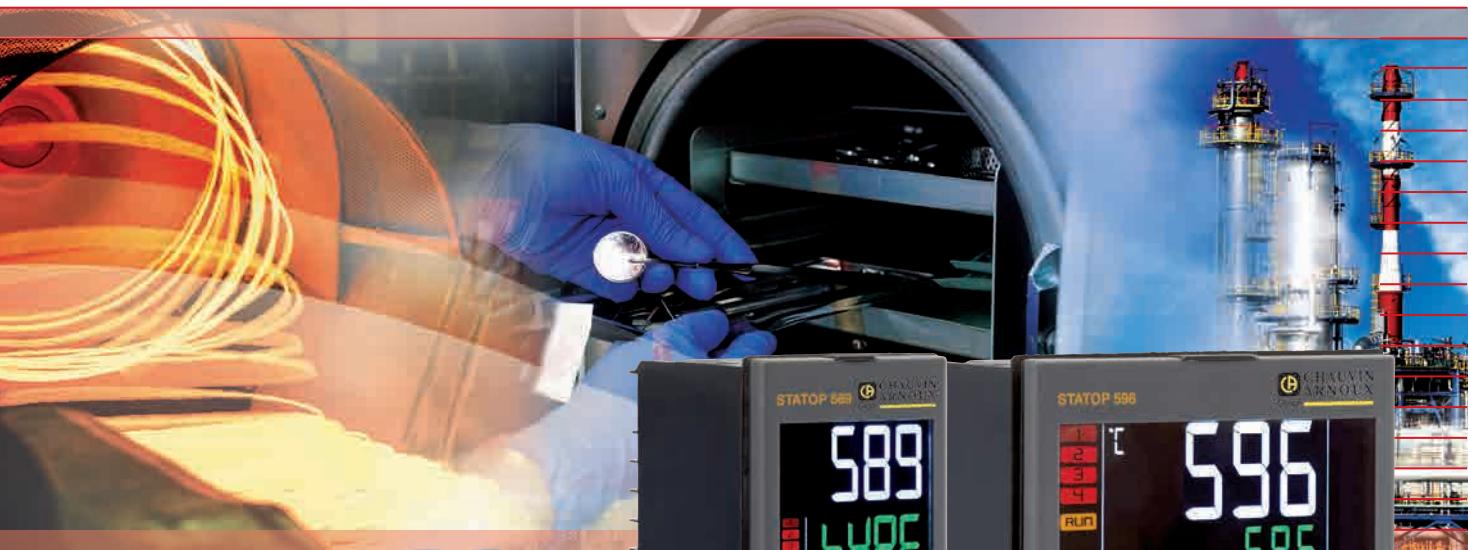


## STATOP 500 Series PID CONTROLLERS



- Simple, intuitive configuration
- Customizable messages
- Multiple configurable logic functions
- Advanced setpoint programmer



*Measure up*



## STATOP 500 Series

### Advantages & specific features

New generation of process controllers technological adva

#### High-level series

The STATOP 500 Series PID controllers form a family of products designed to control the temperature and other physical quantities (pressures, flow-rates, etc.) in industrial processes and manage the positioning of power-operated valves.

The 500 Series is a complete range of 3 high-performance models: STATOP 548 - 589 - 596. They are distinguished by their dimensions (1/16, 1/8 and 1/4 DIN), the amount of information displayed and the number of logic inputs offered.

#### Simple configuration

Configurable without the user's manual in just 7 steps and only a few minutes, directly using the controller keypad or with the PYROtools configuration software on a PC.



#### Advanced, customizable functions

The 500 Series offers a large number of functions such as the setpoint programmer, logical blocks, the timer, the energy monitor and alerts for preventive maintenance. Because they are configurable, these can be saved and reused for future applications.

#### Universal solution

With their universal input and Modbus RTU communication, the 500 Series is easy to integrate into all command systems or programmable logic controllers (PLCs).

#### Intuitive use

Equipped with a backlit LED display indicating all the process information, the 500 Series is simple and intuitive to use for any operator.



#### Smart display

More than 300 preconfigured and customizable alphanumeric messages provide clear, precise information on the process such as: diagnostics, alarms, process status.

Examples of display texts: ALARM, HERT, 4-20 MA,

Clear,  
simple  
operator  
interface

# industrial temperature and equipped with the latest nances



## More than just a simple controller...

With their logical blocks and their monitoring functions, the STATOP 500 Series can replace a small PLC or an energy monitor.

## Control of energy costs

Equipped with an internal energy monitor, the STATOP 500 Series models calculate and indicate your energy consumption on the process tested, in kW and/or €.

## Integrated maintenance system

Particularly useful for programming preventive maintenance operations, the STATOPs handle counting of the commands and programming of the alarm thresholds. The operator is informed of the maintenance to be performed on the actuators by a message on the display.

## PYROtools assistant

The PYROtools software can be used to set up an extended configuration, create working recipes and update the controller's firmware via a PC without having to power the controller.

### All the information at a glance!

- 
- 1 Unit (°C/F) or no. of current program
  - 2 Output LEDs
  - 3 Unit (% A, kW, kWh)
  - 4 Controller operating status
  - 5 Bargraph (%)
  - 6 Output LEDs
  - 7 Programmable key (Auto/Man, Timer, etc.)
  - 8 Measurement value
  - 9 Setpoint value
  - 10 Text message
  - 11 Navigation key: menus, parameters
  - 12 Increment / decrement keys
  - 13 Configurable keys

## APPLICATIONS

### Temperature & processes

The 500 Series is equipped with a large number of function blocks that work in the field.

#### Choice of control type

The STATOP 500 models offer a choice between simple on-off control and PID control with the possibility of step-by-step valve control.

#### Quick, precise control



Thanks to extremely fast processing of the measurement in 120 or 60 ms, the sampling interval of the 500 Series enables a quick reaction to any change in your process.

#### Optimization of the settings

Advanced **tuning algorithms** guarantee optimum, stable settings, including with critical or extra-fast thermal systems. Depending on your control needs, these settings can be activated manually or automatically.

#### Fault detection

Complete diagnostics are performed if:

- ✓ the probe breaks or is connected incorrectly,
- ✓ the load is totally or partially cut off,
- ✓ there are variables outside the range and anomalies in the control loop.

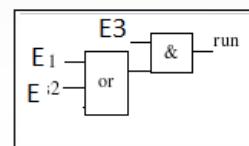


If a fault is reported quickly, it helps to limit production losses and achieve energy savings.

#### Functional application blocks

Sixteen AND, OR or Timer functional blocks can be used to create customizable logical sequences in order to ensure comprehensive, flexible control of the machine.

The controller's hardware resources are fully exploited, without requiring additional external equipment (e.g. timers and small PLCs).



#### Timer

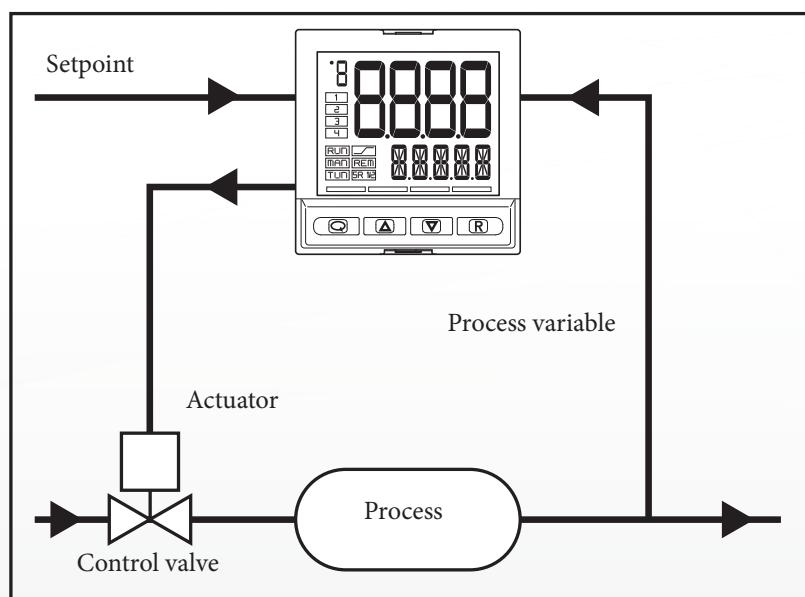


Three types of timer can be used to define:

- ✓ wait times before activation of the setting,
- ✓ setpoint hold times,
- ✓ scheduled setpoint changes.

#### Control of power-operated valves

The 500 Series is equipped with algorithms for controlling power-operated valves. This function can be used to manage **adjustment of the valves without feedback**. This practical function means that the valve's position is calculated and displayed on screen.



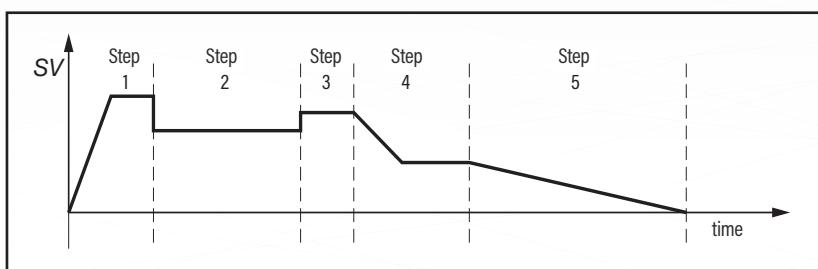
# equipped with a large screen for more effective

## Setpoint programmer



The temperature profiles can be programmed with up to 12 steps and can be grouped and stored in 4 programs, with programmable ramps, holds and event inputs and outputs.

The programmer function helps to avoid temperature overruns and ensure a smooth transition when passing from one setpoint to another.



## Remote configuration & control with PYROtools

The PYROtools software allows you to:

- ✓ read and write the configuration of the controller,
- ✓ store the recipes on a PC,
- ✓ display in graphic form all the parameters used by the Programmer function,
- ✓ display/configure logical operations,
- ✓ configure the parameters of the user configuration menu,
- ✓ configure alphanumeric messages,
- ✓ download Firmware upgrades



## Energy monitor



The **Energy Monitor function** can be used to calculate and monitor energy consumption, estimate energy costs and report any anomalies. Values indicated: in kW and/or in €.

## Preventive maintenance



This controller function allows you to monitor the life cycle of the actuators. It calculates the number of operations executed by the actuator or the duration of component operation. When compared with the average life cycle of the actuator, these data enable you to program its replacement preventively.

## Large number of alarm and threshold functions



The alarms monitor the measurements and/or the difference between the setpoint and the measurement, with the possibility of linking up to **4 programmable alarms** to an output. They ensure:

- ✓ protection of the production goods and the installation,
- ✓ quality monitoring by early detection of deviations from the optimum values and triggering of an alarm in the event of threshold overruns.

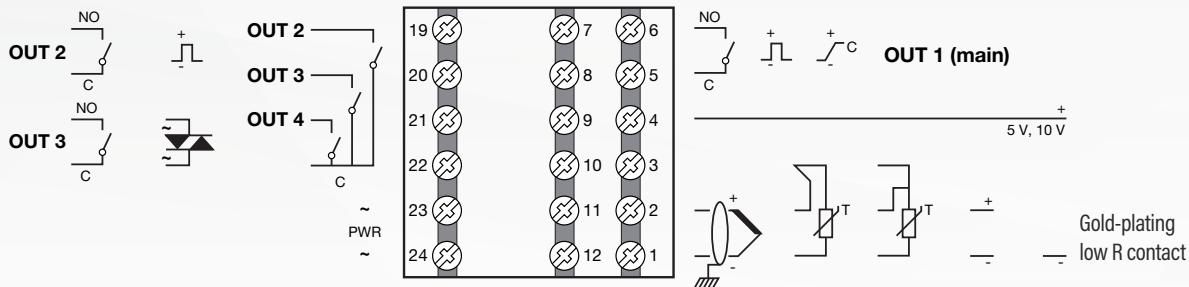
# PID CONTROLLERS - 500 SERIES

## TECHNICAL SPECIFICATIONS

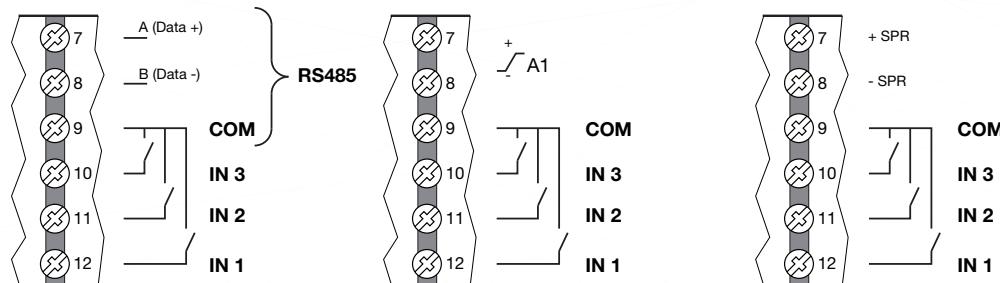
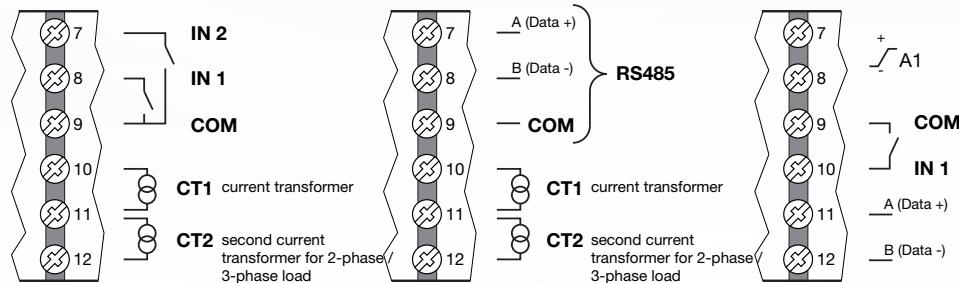
		STATOP 548	STATOP 589	STATOP 596
ALARMS	Continuous (C)	Number: 1 max Current: 4...20mA $R_{out} < 500 \Omega$ Resolution: 12 bit Isolated from main input		
	Analog retransmission (A1)	Number: 1 max Signal: 10V, 0/4...20mA 0...10 V, max 20 mA, $R_{out} > 500 \Omega$ 0...20 mA, 4...20 mA, $R_{out} < 500 \Omega$ Resolution: 12 bit Isolated from main input		
	Number of alarm functions	4 max, assignable to an output		
	Possible configurations	Maximum, minimum, symmetric, absolute/relative, exclusion at firing, memory, reset from keypad and/or contact, LBA, HB, HBB Hold Back Band if enabled with Programmer function		
<b>CONTROL FUNCTIONS</b>				
CONTROL	Type	Single loop		
	Control	PID, ON/OFF, single action heat or cool, double action heat/cool		
SETPOINT PROGRAMMER	Control output	Continuous or ON/OFF Cycle time: constant or optimized (BF)		
	Control output for motorized valves	OPEN/CLOSE for floating motorized valve on Relay, Solid-state, Triac outputs		
MULTIPLE SETPOINTS	Number of programs	Max 4, Start / Stop / Reset / Skip via digital inputs and/or outputs from logic operations Output state: Run / Hold / Ready / End		
	Number of steps	Max 12, each with own setpoint, ramp time and hold time; Times settable in HH:MM or MM:SS Max 4 consents, configurable for ramp and for hold Max 4 events, configurable in ramp and in hold		
MULTIPLE SETPOINTS	Number of setpoint	Max 4, selectable from digital input Each setpoint change is subject to set ramp, different for up and down ramp		
LOGIC <sup>1</sup> OPERATIONS	Function blocks	Max 16, with 4 input variables per block. The result can act on the state of the controller, of the programmer on alarms and outputs. Each function contains an incorporated timer block timer.		
TIMER FUNCTION	Modes	START / STOP STABILIZATION (timer is on when PV enters a band set around setpoint; at end of count you can activate an output, shut down SW or change SP1/SP2) FIRING (timed activation of control after power on)		
ENERGY COUNTER		Calculation done on nominal line voltage and nominal load power or on rms current measured on load via CT		
DIAGNOSTIC		Short circuit or open circuit (LBA alarm) Interrupted or partially interrupted load (HB alarm) Short circuit of control output (SSR alarm)		
RETENTIVE MEMORY	Type	EEPROM		
	Max. number of writes	1,000,000		
<b>SERIAL INTERFACE</b>				
		Type: RS485 Baudrate: 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600, 115,200 bit/s Protocol: MODBUS RTU Isolated from main input		
<b>GENERAL DATA</b>				
POWER SUPPLY	Operating voltage	100...240 VAC/VDC ±10%, 50/60 Hz (on request 20...27 VAC/VDC ±10%)		
	Power dissipation	5 W max	10 W max	10 W max
	Protections	Overvoltage 300 V / 35 V		
CONNECTIONS	Connection	Screw terminals and crimp connector, max. wire section 1 mm	2	
	Serial configuration port (for USB connection)	Connector: microUSB		
	Inputs and outputs	Screw terminals and crimp connector, max. wire section 2,5 mm	2	
AMBIENT CONDITIONS	Use	Indoor		
	Altitude	2000 m max		
	Operating temperature	-10 ... +55 °C (as per IEC 68-2-14)		
	Storage temperature	-20 ... +70 °C (as per IEC 68-2-14)		
	Relative humidity	20...85% RH non-condensing (as per IEC 68-2-3)		
PROTECTION LEVEL		IP 65 on front panel (as per IEC 68-2-3)		
ASSEMBLY	Positioning	On panel, removable faceplate		
	Installation regulations	Installation category: II; Pollution degree: 2, Isolation: double		
DIMENSIONS		48X48 mm (1/16 DIN), Depth.: 80 mm	48X96 mm (1/8 DIN) Depth.: 80 mm	96X96 mm (1/4 DIN) Depth.: 80 mm
WEIGHT		0.16 kg	0.24 kg	0.24 kg
CE STANDARDS	EMC (electromagnetic compatibility)	EMC p(electromagnetic compatibility): conforms to directiv 2014/30/EU with reference to standard EN 61326-1 emission in industrial environment class A for models 650 LV emission in residential environment class B for models 650 HV Safety LVD: conforms to directiv 2014/35/EU with reference to standard EN61010-1		
	UL	Conformity C/UL/US File no. E494863		
<b>OTHER ELEMENTS</b>				
ACCESSORIES		Programming cable for PC, USB - micro USB connectors, lenght 1,8 m		
		Current transformer (CT) 50/0.05 A		
		Current transformer (CT) 25/0.05 A		

# PID CONTROLLERS - 500 SERIES

## STATOP 548 connections



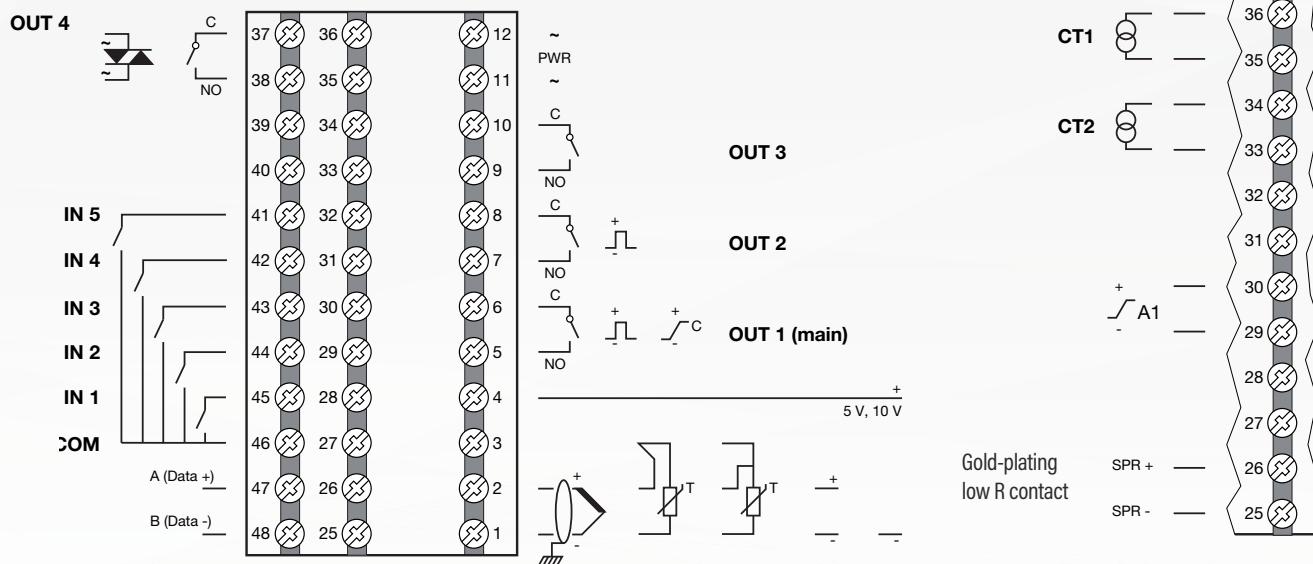
### OPTIONS



### LEGEND

~ PWR	Power supply	Isolated digital inputs	Relay output	Logic output
~				
+	Linear input in voltage / current	Thermocouple input	Long-life solid state relay output	RS485 serial line
-				
+	Input for current transformer	Input PT100 JPT100 2 / 3 wires	DC analog output	
-				
+ SPR	Remote Set-point			
- SPR				

## STATOP 589 / 596 connections



### LEGEND

~ PWR	Power supply	Isolated digital inputs	Relay output	A (Data +)
~				RS485 serial line
+ -	Linear input in voltage/current	Thermocouple input	Long-life solid state relay output	B (Data -)
	Input for current transformer	Input PT100 JPT100 2 / 3 wires	Isolated analog output	
SPR +	Remote Set-point		Logic output	
SPR -				

## STATOP 548 / 589 / 596 Input/Output specifications

~ PWR	Power supply	Isolated digital inputs	Relay output	Logic output
~				
+ -	Linear input in voltage / current	Thermocouple input	Long-life solid state relay output	RS485 serial line
	Input for current transformer	Input PT100 JPT100 2 / 3 wires	DC analog output	
+ SPR	Remote Set-point		Isolated analog output	
- SPR				

# PID CONTROLLERS - 500 SERIES

## To order

### STATOP 548 controller

Power supply 100...240 VAC

Code	Model	Values	Programmer	Inputs			Outputs					RS485	Logic functions	Total Number of Outputs
				Digital	CT	SPR	Relay	Triac	Logic	Analog I	Analog V/I			
LST548C-002	STATOP548C-D-R00-00000-1-P						1		1					
LST548C-001	STATOP548C-R-R00-00000-1-P						2							
LST548C-004	STATOP548C-D-R00-00120-1-P	2	1				1		1					
LST548C-003	STATOP548C-D-RR0-00000-1-P						2		1					
LST548C-005	STATOP548C-R-RR0-00000-1-P						3							
LST548C-009	STATOP548C-R-RTO-00000-1-P						2	1						
LST548C-010	STATOP548C-D-RR0-00030-1-P	3					2		1					
LST548C-007	STATOP548C-D-RR0-00200-1-P		2				2		1					
LST548C-006	STATOP548C-C-RR0-00000-1-P						2			1				
LST548C-008	STATOP548C-D-R00-01030-1-P	3					1		1		1			
LST548C-014	STATOP548C-R-R00-01030-1-P	3					2				1			
LST548C-012	STATOP548C-R-RR0-00101-1-P		1				3					•		
LST548C-011	STATOP548C-D-RRR-00000-1-P						3		1			1		
LST548C-015	STATOP548C-R-RRR-00000-1-P						4							
LST548C-013	STATOP548C-D-RRR-00220-1LFP	2	2				3		1					
LST548C-016	STATOP548C-D-RRR-00031-1LFP	3					3		1			•		
LST548C-019	STATOP548C-D-RRR-00201-1LFP		2				3		1			•		
LST548C-020	STATOP548C-D-RR0-01011-1LFP	1					2		1		1	•		
LST548C-017	STATOP548C-C-RRR-10030-1LFP	3		1			3			1		•		
LST548V-018	STATOP548V-R-RRR-00000-1-P						4							
LST548V-022	STATOP548V-R-RRR-00030-1-P	•	3				4					•		
LST548P-023	STATOP548P-D-RRR-00000-1-P	•	3				3		1			•		
LST548P-021	STATOP548P-D-RRR-00030-1LFP	•	3				3		1		1	•		
LST548C-024	STATOP548C-D-RRR-01030-1LFP	3					3		1		1	•		

### STATOP 589 controller

Power supply 100...240 VAC

Code	Model	Values	Programmer	Inputs			Outputs					RS485	Logic functions	Total Number of Outputs
				Digital	CT	SPR	Relay	Triac	Logic	Analog I	Analog V/I			
LST589C-001	STATOP589C-D-R00-00000-1-P						1		1					
LST589C-002	STATOP589C-R-R00-00000-1-P						2							
LST589C-003	STATOP589C-D-R00-00150-1-P	5	1				1		1					
LST589C-004	STATOP589C-D-RR0-00000-1-P						2		1					
LST589C-005	STATOP589C-R-RR0-00000-1-P						3							
LST589C-006	STATOP589C-D-RR0-00050-1-P	5					2		1					
LST589C-007	STATOP589C-D-RR0-00200-1-P		2				2		1					
LST589C-008	STATOP589C-C-RR0-00000-1-P						2			1				
LST589C-009	STATOP589C-D-R00-01050-1-P	5					1		1		1			
LST589C-010	STATOP589C-R-R00-01050-1-P	5					2				1			
LST589C-011	STATOP589C-R-RR0-00101-1-P		1				3					•		
LST589C-012	STATOP589C-D-RRR-00000-1-P						3		1					
LST589C-013	STATOP589C-R-RRR-00000-1-P						4							
LST589C-015	STATOP589C-R-RRT-00000-1-P						3	1						
LST589C-014	STATOP589C-D-RRR-00250-1LFP	5	2				3		1			•		
LST589C-016	STATOP589C-D-RRR-00051-1LFP	5					3		1			•		
LST589C-017	STATOP589C-C-DRR-00051-1LFP	5					2		1	1		•		
LST589C-018	STATOP589C-D-RRR-00201-1LFP		2				3		1		•			
LST589C-019	STATOP589C-C-RRR-10050-1LFP	5	1				3			1		•		
LST589V-020	STATOP589V-R-RRR-00000-1-P	•					4							
LST589V-021	STATOP589V-R-RRR-00050-1-P	•	5				4							
LST589P-022	STATOP589P-D-RRR-00000-1-P	•					3		1					
LST589P-023	STATOP589P-D-RRR-00050-1LFP	•	5				3		1			•		
LST589C-024	STATOP589C-D-RRR-01050-1LFP	5					3		1	1		•		

## STATOP 596 controller

Power supply 100...240 VAC/VDC

Code	Model	Valves	Programmer	Inputs			Outputs			Logic functions	Total Number of Outputs	
				Digital	CT	SPR	Relay	Triac	Logic	Analog I	Analog V/I	RS485
LST596C-001	STATOP596C-D-R00-00000-1-P						1		1			
LST596C-002	STATOP596C-R-R00-00000-1-P						2					
LST596C-003	STATOP596C-D-R00-00150-1-P			5	1		1		1			
LST596C-004	STATOP596C-D-RRO-00000-1-P						2		1			
LST596C-005	STATOP596C-R-RRO-00000-1-P						3					
LST596C-006	STATOP596C-D-RRO-00050-1-P			5			2		1			
LST596C-007	STATOP596C-D-RRO-00200-1-P				2		2		1			
LST596C-008	STATOP596C-C-RRO-00000-1-P						2			1		
LST596C-009	STATOP596C-D-R00-01050-1-P			5			1		1		1	
LST596C-010	STATOP596C-R-R00-01050-1-P			5			2				1	
LST596C-011	STATOP596C-R-RRO-00101-1-P				1		3				•	
LST596C-012	STATOP596C-D-RRR-00000-1-P						3		1			
LST596C-013	STATOP596C-R-RRR-00000-1-P						4					
LST596C-014	STATOP596C-R-RRT-00000-1-P						3	1				
LST596C-015	STATOP596C-D-RRR-00250-1LFP			5	2		3		1			•
LST596C-016	STATOP596C-D-RRR-00051-1LFP			5			3		1			•
LST596C-017	STATOP596C-C-DRR-00051-1LFP			5			2		1	1		•
LST596C-018	STATOP596C-D-RRR-00201-1LFP				2		3		1			•
LST596C-019	STATOP596C-C-RRR-10050-1LFP			5		1	3			1		•
LST596V-020	STATOP596V-R-RRR-00000-1-P	•					4					
LST596V-021	STATOP596V-R-RRR-00050-1-P	•		5			4					
LST596P-022	STATOP596P-D-RRR-00000-1-P	•					3		1			
LST596P-023	STATOP596P-D-RRR-00050-1LFP	•		5			3		1			•
LST596C-024	STATOP596C-D-RRR-01050-1LFP	5				3	1		1			•



The **STATOP Series** is also available with a **20...27 VAC/ VDC power supply**.

Find all the references of the 500 Series at our website [www.pyrocontrole.com](http://www.pyrocontrole.com)  
Our teams are always ready to listen.

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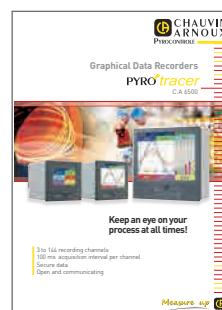
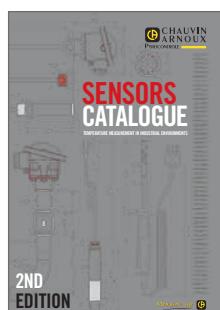
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