

# STACC

## ZERO-FLUX™

### DC CURRENT



The STACC is a high precision DC current measuring system based on the zero-flux principle for currents up to 6000 A.

The Stacc is the economy version of our Zero-flux™ high-end product line. It is designed for lower qualified applications than the highly stable Topacc series and therefore uses no specially built components. It is however supplied with the same standard features that make our products so special, such as uninterrupted operation through power failures, automatic reset after overload and zero-current detection. The system can be switched on when the main current is already present. The system has a linearity better than 10 ppm.

The STACC is mainly used as a control/measuring unit in a feed-back loop in high performance power supplies and amplifiers, or as a replacement for resistive shunts. Because of its special features the bipolar Stacc system is widely applied in : Nuclear research projects, Plasma Physics experiments, Applied scientific research and Industrial calibration workshops.

#### The STACC features

- ◆ Available for currents up to 6000 Adc. Small signal bandwidth 500 kHz.
- ◆ Linearity better than 10 ppm.
- ◆ 10 V output voltage at users specified rated current.
- ◆ A high thermal stability.
- ◆ No extra power consuming temperature control electronics. No warming-up time.
- ◆ Unique peak detection method ensures perfect operation under all circumstances.
- ◆ Temperature coefficient even less than 1 ppm/K.
- ◆ True bipolar operation,  $\pm 10V$  full scale output.
- ◆ Low-sense output for minimum distortion by the load circuit.
- ◆ Saturation detection circuit with automatic reset.
- ◆ Zero-current detection and output valid signalling.
- ◆ Uninterrupted operation through power failures up to 30 msec.
- ◆ Can be switched on with main current already present.






## Specifications Stacc

Primary Circuit	rated current	up to 6000 A (bipolar)	
	permissible overcurrent	115 % of rated current (10s)	
	short-circuit current	1000 % of rated current (0.1s)	
	current slew rate	unlimited	
Output Circuit	rated voltage	± 10 V	
	maximum load current	5 mA	
	output impedance	< 10 mΩ	
	output slew rate	1.5 V/μs	
	small signal-bandwidth (< 5% of rated primary current)	0...500 kHz	
	rms value of output noise related to rated $V_{out}$	$I_{rated} < 1000 \text{ A}$	$I_{rated} > 1000 \text{ A}$
	0... 10 Hz	< 0.5 ppm	< 0.25 ppm
	0... 100 Hz	< 1 ppm	< 0.5 ppm
DC accuracy	0... 10 kHz	< 3 ppm	< 2 ppm
	<u>offset error</u> related to rated output voltage (adjustable)		
	- initial (at 25°C)	< 10 ppm	
	- versus temperature	< 1 ppm/K	
	- versus time	< 5 ppm/year	
	<u>ratio error</u> related to actual output voltage		
	- initial (at 25°C)	< 50 ppm	
	- versus temperature	< 1 ppm/K	
	- versus time	< 10 ppm/year	
	Signalling	<u>linearity error</u> related to actual output voltage	< 10 ppm
LED's + relay contacts			
General data	output valid	Up to 1.15 $I_n$	
	zero current detection	At 0.1 % of $I_n$	
	ambient temperature	measuring head	0...55 °C
		electronics module	10...40 °C
	Auto reset after overload. Starts with load at power on		




### Available types

ST06 → 0 ... 600 A, ST20 → 600 ... 2000 A, ST40 → 2000 ... 4000 A, ST50 → 4000 ... 5000 A, ST60 → 5000 ... 6000 A

### Available versions

ST**-1		* 1 (Eurocard) PCB for 3U sub-rack mounting	128.5x50.5x160 mm (3U,10HP)
		Supply voltages:	ST06,ST20,ST40=±24Vdc /ST50=±32Vdc /ST60=±40Vdc
ST**-3		* Eurocassette with 1 PCB for 3U sub-rack mounting	128.5x106.3x160 mm (3U,21HP)
		Supply voltages:	ST06,ST20,ST40=±24Vdc /ST50=±32Vdc /ST60=±40Vdc
ST**-5		* 2 (Eurocard) PCB's for 3U sub-rack mounting	128.5x50.5x160 mm (3U,10HP) / 128.5x50.5x160 mm (3U,10HP)
		Supply voltages:	115 or 230 Vac (state at ordering)
ST**-6		* Eurocassette with 2 PCB's for 3U sub-rack mounting	128.5x141x160 mm (3U,28HP)
		Supply voltages:	115 or 230 Vac (state at ordering)
ST**-8		* Chassis for 19" rack mounting	44x483x250 mm (1H, 19")
		Supply voltages:	115 or 230 Vac (state at ordering)

### Applied measuring heads

	Model		Dimensions (mm)	Bore (mm)	Weight	Test Voltage (kV,1 min)
	<b>A for ST06</b>	standard	Ø 65 H=35	25	0.3	2.5
	<b>B for ST20</b>	standard	Ø 120 H=60	50	2	2.5
		optional	145x125x150	45	3	5
	<b>E for ST40, ST50, ST60</b>	standard	Ø 220 H=110	65	10	2.5
		optional	225x225x180	60	15	5