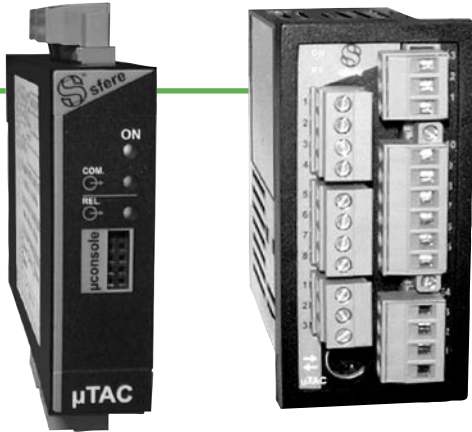


DIGITAL MEASURE TRANSMITTERS

Programmable by μ Console or by PC software



Series μ TAC

◆ This range is declined into 8 input versions which can be combined with output options according to your requirements.

μ TAC 50 Measuring of U, I, F

Single or 3-phase balanced networks, 12 parameters

μ TAC 100 / μ TAC 300 Sinusoidal signals

μ TAC 100 TA / μ TAC 300 TA Wave train and phase angle

μ TAC 100 PBUS / μ TAC 300 PBUS Digital output
RS485 Profibus DP

μ TAC 100 (400Hz) Networks at 400 Hz

◆ Output options according to versions

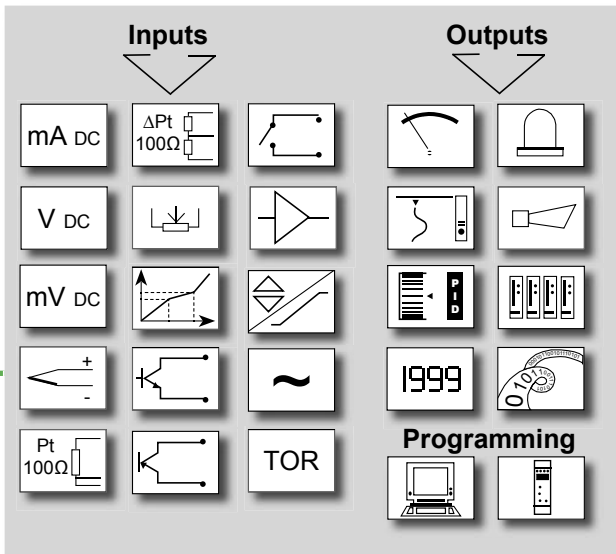
A, 2A, 4A Analog outputs :

1, 2 or 4 uni and bidirectional current and voltage outputs

R / 2R / 4R Relay outputs : 1, 2 or 4 relays
(mode setpoint / window or energy pulse)

N Insulated digital output : RS485 and RS422
(Modbus-Jbus or Profibus DP)

H Harmonics analysis



Introduction

Measurement, control and display of all the parameters of AC electrical networks, for DIN rail mounting.

A range of programmable converters which can be adapted closely to your applications.

They can be equipped with a μ Console (μ TAC50 - μ TAC100) with 4 green digits alphanumeric display, allowing direct access to the programming.

◆ Programming by PC : Software MC Vision

Software for programming and analysis (Windows environment); Allows :

Storage of configurations as files which can be consulted, modified, duplicated or loaded into the converters. Edition and printing of files with or without having a converter connected.

◆ Programming by μ Console

(not available on the series μ TAC300)

This miniaturised μ Console can be clipped on the front face of the instruments to allow :

Visualisation of the meas. and the state of the outputs.

Visualisation and modification of the programming.

Teleloading of programming files for duplication to other converters.



The friendly interface

Functions

◆ Self-diagnosis :

The instrument permanently watches some of its parameters. If an error is detected, it can be reported on the relays and on the analog output.

◆ Input scale overstepping :

The meter will indicate a caliber overstepping by an alarm message.

◆ Filtering of the measure :

Programmable integration indice, allows display stabilising in case of unsteady input.









◆ Phase ranks test and correction :

Version μ TAC300 only.



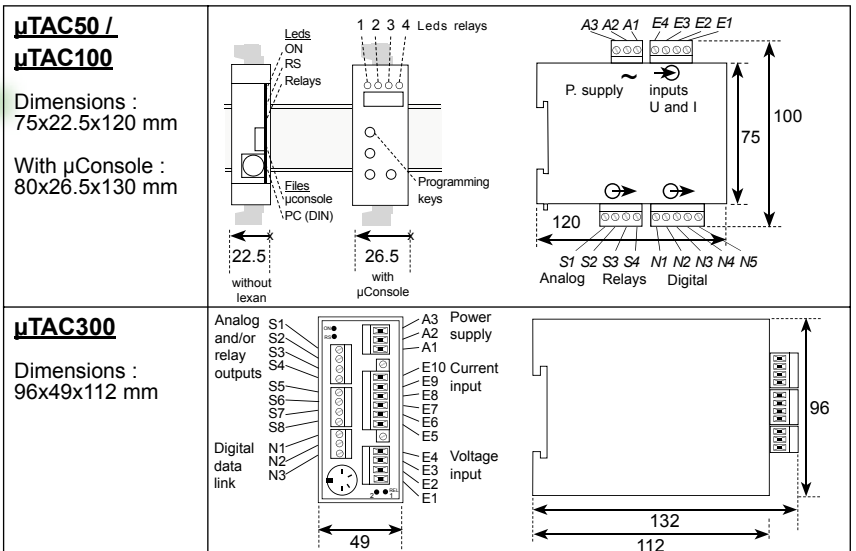
CONVERTER

Input features




Names of the transmitters	Parameters	Input features	Accuracy (at + 25 °C)
Meas. of U, I, F μTAC 50 	3 measurable parameters : 2 voltages, current, frequency	2 programmable current or voltage calibers (1) Frequency : 45...50...65Hz Measure cycle : 55ms <i>Single phase, 3/4 wire balanced networks</i>	U, I : 0.2
<i>Single or 3-phase balanced networks with or without neutral</i>			
Sinusoidal signals μTAC 100 	15 measurable parameters : 2 voltages, current, 5 powers (P,Q,S), frequency, cosine, 4 energies	2 programmable current or voltage calibers (1) Frequency : 45...50...65Hz Measure cycle : 55ms <i>Single phase, 3/4 wire balanced networks</i>	U, I : 0.2 P : 0.5 E act : 1
Wave train and phase angle μTAC 100 TA 	12 measurable parameters : 2 voltages, current, 3 powers (P,S), cosine, 2 energies (active), current and voltage MAX	2 programmable current or voltage calibers (1) Frequency : 50 Hz (60 Hz by programming) Measure cycle programmable from 20ms to 250s, or automatic - <i>Single phase, 3, 4, 6 wire balanc. networks</i> <i>Captions (details) : AP:phase angle TA:wave train</i>	AP : U, I:0.5 P:1 E: 2(5A) 3(1A) TA : U, I:0.2 P:0.5 E : 1(5A) 2(1A)
Networks at 400 Hz μTAC 100 (400Hz) 	12 measurable parameters : 2 voltages, current, 5 powers, frequency, cosine, energies	2 programmable current or voltage calibers (1) Frequency : 300...400...800Hz Measure cycle : 55ms <i>Single phase, 3/4 wire balanced networks</i>	U, I : 0.2 P : 0.5 E act : 1
<i>All types of networks, balanced or not</i>			
Sinusoidal signals μTAC 300 	31 measurable parameters : 6 voltages, 3 currents, distortion rate, 2 harmonics, 9 powers, frequency, 4 cosines, leak current, 7 energies	2 programmable current or voltage calibers (1) Frequency : 45...50...65Hz Measure cycle : 55ms <i>3 or 4 wire networks</i>	U, I : 0.2 P : 0.5 E act : 1
Wave train and phase angle μTAC 300 TA 	23 measurable parameters : 6 voltages, 3 currents, 5 powers (P,S), 4 cosines, 2 energies (active), current and voltage MAX	2 programmable current or voltage calibers (1) Frequency : 50 Hz (60 Hz by programming) Measure cycle programmable from 20ms to 250s, or automatic - <i>3, 4, 6 wire networks</i> <i>Captions (details) : AP:phase angle TA: wave train</i>	AP : U, I:0.5 P:1 E: 2(5A) 3(1A) TA : U, I:0.2 P:0.5 E : 1(5A) 2(1A)
Profibus DP network μTAC 300 PBUS 	31 measurable parameters : 6 voltages, 3 currents, 9 powers, frequency, 4 cosines, leak current, 7 energies	2 programmable current or voltage calibers (1) Frequency : 45...50...65Hz Measure cycle : 55ms <i>3 or 4 wire networks</i>	U, I : 0.2 P, Q, S : 0.5 E act : 1 E reac : 2
Networks at 400 Hz μTAC 300 (400Hz) 	31 measurable parameters : 6 voltages, 3 currents, 9 powers, frequency, 4 cosines, leak current, 7 energies	2 programmable current or voltage calibers (1) Frequency : 300...400...800Hz Measure cycle : 55ms <i>3 or 4 wire networks</i>	U, I : 0.2 P : 0.5 E act : 1
Programmable current or voltage calibers : (1) U : 150Vac and 500Vac - Un : 150Vac and 500Vac I : 1Aac and 5Aac - In : 1.2Aac and 6Aac Oversteppings 1.2Un - 1.2 In Pemanent overload : U=750V and I=10A Overload during 10s : U=1000V and I=50A Impedance : Voltage : resistances ≥1MΩ - Current : <0.2VA		Thermic drift : <200ppm/°C Test voltage : 2kV/50Hz/1min. Energies saved every 5 minutes. Measuring method : Real time simultaneous sampling of the voltages and the currents. Digital computation on 32 bits. Measuring of the deformed signals.	

Description

	μTAC50 / μTAC100	μTAC 300
Housing	Self-extinguishing black UL94VO ABS	
Latching	Case for latching on symmetrical DIN rail (μTAC50/μTAC100 : mount the cases vertically and provide a 2 mm space between each)	
Connectors	Plug-off connector for screwed connections (2.5mm ² , flexible or rigid)	
Protection	Case/terminals : IP 30	Case/terminals : IP 20
Display μConsole	4 digit green alpha-numerical display	-
Weight	230 g	from 200g to 400g



Options

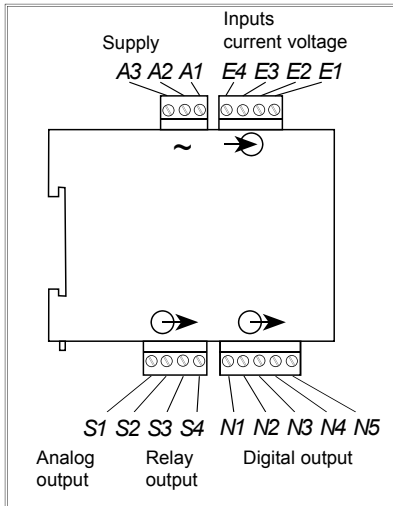
Designation	Type	Features
Analog output A, 2A or 4A 	<u>3 types of outputs avail. according to versions :</u> A : 1 analog output (μ TAC50 and μ TAC100) 2A : 2 analog outputs (μ TAC300) 4A : 4 analog outputs (μ TAC300) <u>Programmable current output (mA)</u> -20/20 -10/10 -5/5 0/5 0/10 0/20 4/20 mA (for option 4A, 2 of the outputs are uni-directional) Galvanic partition : 2kV eff.50Hz-1min. (option 4kV : available on versions μ TAC300)	Scale setting : 0 to 100% of the measure range by programming Admissible load : $0\Omega < L_r < 600\Omega$ (20 mA) Resolution of the board : 24000 points. Accuracy of the board : $<0.1\%$ of the full scale on -20/20mA (in relation to the display) . $<0.2\%$ on -5/5 mA. Residual ripple : $\pm 2.5mV$ (peak to peak) on 50 Ω load. Response time : version TA : $<120ms$ for U_{max} . and I_{max} ., 2x (measure cycle) for the other values. Response time : other versions : from 50ms ($<120ms$ input \rightarrow output). Thermic drifts : $< 100ppm$ ($\pm 20mA$) $<200ppm$ (0/20mA)
Relay outputs R, 2R or 4R 	<u>3 types of outputs are avail. according to versions :</u> R : 1 programmable setpoint relay (μ TAC50 : setp.) 2R : 2 independently programmable relays 4R : 4 independently programmable relays Combinable relays : Setpoints or/and pulses Type of contact : potential free. Galvanic partition : 2.5kV eff.50Hz-1min. (option 4kV : available on versions μ TAC300) Rated load : 5A - 250Vac Response time : versions TA : 100ms for U_{max} . and I_{max} ., 2x (measure cycle) for the other values. 100ms for the other μ TAC.	<u>Energy pulse output</u> Count rate : 1 to 4 pulses per second max. Width of the pulses : 100 to 400ms by programming Weight of the pulses : programmable <u>Setpoint relay</u> Setting of the setpoints : 0 to 100% of the measure range by programming Switching hysteresis : 0 to 15% of the setpoint by programming Time delay : 0 to 15s. by programming, in 1s. increments
Digital outputs N 	<u>Versions PBUS</u> : RS485 Insulated (2kV) PROFIBUS DP. Transmission speed from 9600 to 12 Mbauds. Format of the data : integer 16 bits. Sub-D9 point female connecting. <u>Other versions</u> : RS 485 or 422 insulated (2kV) (2 or 4 wire) Modbus Jbus RTU 8 bits : Programmable parity. 1 or 2 stop bits. Format of the data : integer 16 bits. Slave number programmable from 1 to 250 with a transmission speed of 4800 / 9600 / 19200 bauds. (option 4kV : available on versions μ TAC300)	
Harmonics analysis H	<u>Versions PBUS</u> : PROFIBUS DP retransm. of the odd harmonics and the THD of the 3 voltages and the 3 currents from rank 3 to 29. <u>Other versions</u> : Display of the harmonics and the THD (harmonics distortion rate) of the 3 voltages and the 3 currents from rank 2 to rank 50 (odd and even). Retransmission possible in Modbus.	
Power supply 2 or 3	High voltage (2) : 90 to 270Vac and 88 to 350Vdc or Low voltage (3) : 20 to 40Vac and 20 to 60Vdc (40/60/400Hz)	

Coding

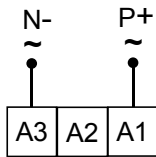
Measuring of U, I, F	μ TAC 50	A	R			R : Setpoint relay output only
<i>Single or 3-phase balanced/unbalanced networks with or without neutral</i>						
Sinusoidal signals	μ TAC 100	A	R	N	H	R : Setpoint relay or pulse output N : Digital data link RS485/422 Modbus
Wave train and phase angle	μ TAC 100 TA	A	R	N		
Network at 400 Hz	μ TAC 100 (400Hz)	A	R	N		
<i>All network types</i>						
Sinusoidal signals	μ TAC 300	2A or 4A	2R or 4R	N	H	1 to 4 combinable analog and/or relay outputs N : Digital data link RS485/422 Modbus <u>Options</u> : Voltage outputs 0-10V (specify) Insulation at 4kV (specify)
Wave train and phase angle	μ TAC 300 TA	2A or 4A	2R or 4R	N		
Network at 400 Hz	μ TAC 300 (400Hz)	2A or 4A	2R or 4R	N		
Digital output RS485 Profibus	μ TAC 300 PBUS	2A or 4A	2R or 4R	H		1 to 4 combinable analog and/or relay outputs Digital data link RS485 Profibus DP <u>Options</u> : Voltage output 0-10V (specify) Insulation at 4kV (specify)
<u>Example</u> : For a μ TAC100 with an analog output and 1 relay, supplied in 230 Vac, request reference : μ TAC100 AR 2			<u>Example</u> : For a μ TAC300 TA with 2 analog outputs plus 2 relays and digital output, supplied in 230 Vac, request reference : μ TAC300 TA 2A2RN 2			

Wiring

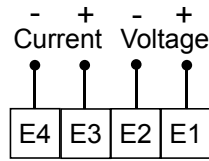
μTAC50 / μTAC100



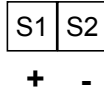
Power supply



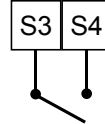
Inputs



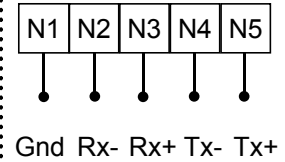
Analog output



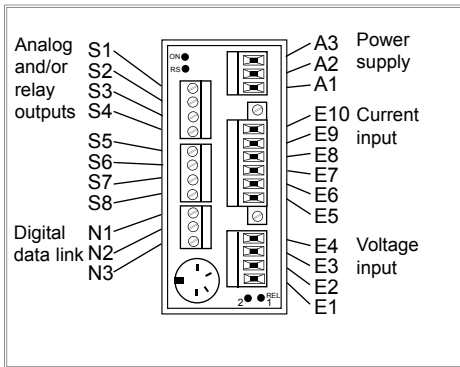
Relay output



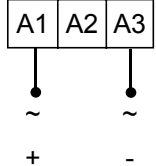
Digital output



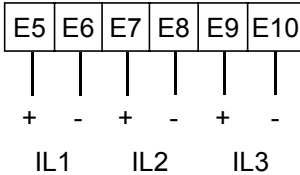
μTAC300



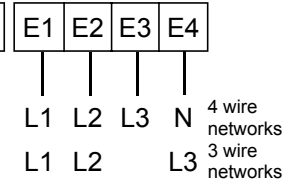
Supply



Inputs : current

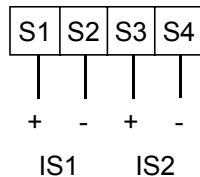


: voltage

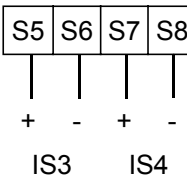


Analog outputs

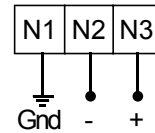
Bidirectionnall



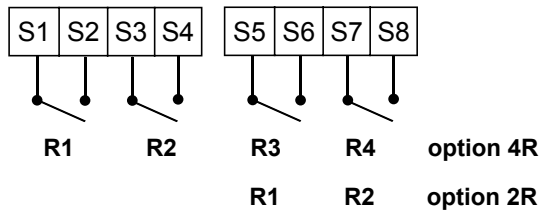
Unidirectionnall



Digital data link RS485



Relay outputs



(for the details of the wiring see the manual delivered with the instrument)

This instrument is dedicated to industrial applications. It has to be installed in an electrical switchbox, or equivalent.

Your representative

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