

# ELECTRICAL NETWORK ANALYSERS

## Single or 3-phase balanced / unbalanced networks

### 3, 4 wire

# Series DIVA

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

- Single or 3 phase balanced networks -  
Up to 18 parameters

**DIVA 5** Electrical network analyser  
**DIVA 5C** DC network analyser  
**DIVA 5 TA** Wave train and phase angle

- Single or 3-phase balanced/unbalanced 3, 4 wire networks - Network analyser - Up to 32 parameters

**DIVA 15** Sinusoidal signals  
**DIVA 15 TA** Wave train and phase angle  
**DIVA 15 PBUS** Digital output RS485 Profibus DP  
**DIVA 16** Network at 400 Hz  
**DIVA 17** 2 independent insulated digital outputs



◆ Output options acc. to versions

**A** Insulated analog outputs :  
1 or 2, active or passive current,  
or voltage output.  
Return value in case of self-  
diagnosis error.

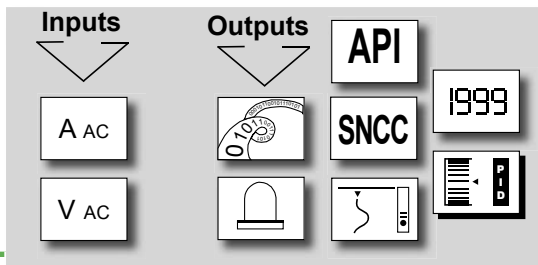
**R1 / R / R4**  
Relay outputs : 1, 2 or 4 relays  
(mode setpoint / window or energy pulse)

for 2 programmable logic outputs

**N** Insulated digital outputs : RS485 and RS422  
(Modbus-Jbus and Profibus DP)

**H** Harmonics analysis

**B** Bargraph display



PANEL METERS

## Introduction

Measuring, control and display of all the parameters of AC electrical networks for panel mounting.

A range of electrical network analysers fully programmable by the keyboard on front face, allowing direct access to the programming displayed in clear language, or programming by PC software.

The display allows a comfortable reading of the measure, even at a remote distance.

## 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.

◆ **Test and correction of the phase ranks :**

DIVA 15 and DIVA 15 Pbus only.











The friendly interface

## Description

	DIVA 5 / DIVA 5TA	Other DIVAs
Dimensions	48 x 96 x 124 mm  Case tightenings External seal	96 x 96 x 86 mm  Case tightenings on the sides or above / under
Housing	Self-extinguishing black UL94VO ABS	Self-extinguishing black UL94V1 polycarbonate
Latching	2 tightening pads - Mounting on panel. Cut out 44 x 91mm (maximum panel thickness 30)	2 tightenings - Mounting on panel. Cut out 92 x 92mm (maximum panel thickness 30)
Connectors	Plug-off connectors on rear face for screwed connectings (2.5mm <sup>2</sup> , flexible or rigid)	
Protection	Case/terminals : IP 20 Front face : IP 65	Case/terminals : IP 20 Front face : IP 40 (IP 65 optional)
Display	one ±10000 points high brightness indicator (14 mm high electroluminescent red digits).	Three 1000 points high brightness indicators (14 mm high electroluminescent red digits).
Weight	from 150g to 250g	from 375g to 510g






# Input features

Names of the DIVAs	Parameters	Input features	Accuracy (at +25°C)
<i>Single or 3-phase balanced networks with or without neutral</i>			
Network analyser <b>DIVA 5</b> 	<b>12 measurable parameters :</b> voltages, currents, frequency, power factor, 3 powers (active, reactive and apparent), 4 energies (active, reactive).	2 programmable current or voltage calibers (2) Frequency : 45...50...65Hz Measure cycle : 55ms <i>3 or 4 wire networks</i> <i>Protection of the programming by access code</i>	U, I : 0.2 P : 0.5 E act. : 1
DC network analyser <b>DIVA 5 C</b> 	<b>3 measurable parameters :</b> Voltage, current, power.	2 programmable current or voltage calibers (2) Internal or external shunt to be specified on order Measure cycle : 55ms <i>Protection of the programming by access code</i>	
Wave train and phase angle <b>DIVA 5 TA</b> 	<b>12 measurable parameters :</b> 2 voltages, line current, 3 powers (active, apparent), cosine, 2 active energies, maximum voltage and current.	2 programmable current or vottage calibers (2) Frequency : 50 Hz (60 Hz by programming) Measure cycle programmable from 20ms to 250s or automatic - 3, 4 networks  <i>Captions (details) : AP:phase angle TA:wave train</i>	AP:U,I:0.5 P : 1 TA:U,I:0.2 P : 0.5 E : 1 (5A) and 2 (1A)
<i>Single or 3-phase balanced / unbalanced networks with or without neutral</i>			
Sinusoidal signals <b>DIVA 15</b> 	<b>32 measurable parameters :</b> 6 voltages, 3 currents, 9 powers (active, reactive, apparent), frequency, 4 cosines, leak current, 7 energies (active, reactive).	2 programmable current or voltage calibers (2) 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 <b>DIVA 15 TA</b> 	<b>24 measurable parameters :</b> 6 voltages, 3 currents, 5 powers (active, apparent), 4 cosines, 2 energies (active), maximum voltage and current.	2 programmable current or voltage calibers (2) Frequency : 50 Hz (60 Hz by programming) Measure cycle programmable from 20ms to 250s, or automatic - 3, 4 or 6 wire.  <i>Captions (details) : AP:phase angle TA:wave train</i>	AP:U,I:0.5 P : 1 TA:U,I:0.2 P : 0.5 E : 1 (5A) and 2 (1A)
Profibus DP networks <b>DIVA 15 PBUS</b> 	<b>32 measurable parameters :</b> 6 voltages, 3 currents, 9 powers (active, reactive, apparent), frequency, 4 cosines, leak current, 7 energies (active, reactive).	2 programmable current or voltage calibers (2) 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 <b>DIVA 16</b> 	<b>32 measurable parameters :</b> 6 voltages, 3 currents, 9 powers (active, reactive, apparent), frequency, 5 cosines, leak current, 7 energies (active, reactive).	2 programmable current or voltage calibers (2) Frequency : 300...400...800Hz Measure cycle : 55ms <i>3 or 4 wire networks</i>	U, I : 0.2 P : 0.5 E act. : 1
2 independent digital outputs <b>DIVA 17</b> 	<b>32 measurable parameters :</b> 6 voltages, 3 currents, 9 powers (active, reactive, apparent), frequency, 5 cosines, leak current, 7 energies (active, reactive).	2 programmable current or voltage calibers (2) Frequency : 45...50...65Hz Measure cycle : 55ms <i>3 or 4 wire networks</i>	U, I : 0.2 P : 0.5 E act. : 1
<b>(2)Programmable current or voltage calibers :</b> U : 150Vac and 500Vac - Un : 150Vac and 500Vac I : 1Aac and 5Aac - In : 1.2Aac and 6Aac Overstepping : 1.2Un - 1.2 In DIVA 5 C : U:150 Vdc and 500 Vdc I =1 Adc and 5 Adc (internal shunt) Or 20 mV and 100 mV (external shunt)		Permanent overload : U=750V and I=10A Overload during 10s : U=1000V and I=50A  Impedance : Voltage : resistors ≥1MΩ - Current : <0.2VA Thermic drifts : <200ppm /°C Energies saved every 5 minutes Reading of the energies on 6 digits.	

# Environment

	DIVA 5 / DIVA 5C / DIVA 5 TA	Other versions
Standards	CE marking (89/336 rev.92/31). Complies with standards IEC 61000-6-2 on immunity, IEC 61000-6-4 on emissions. Test standard EN55011 cl. A	
Relative dampness	80 % annual average	
Operating T°	-5°C to +55°C	0°C to +55°C
Storage T°	-30 to +80°C	-25°C to +70°C
Power draw	8 VA	6 VA

# Options

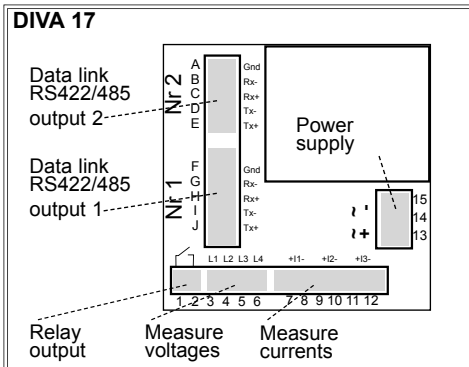
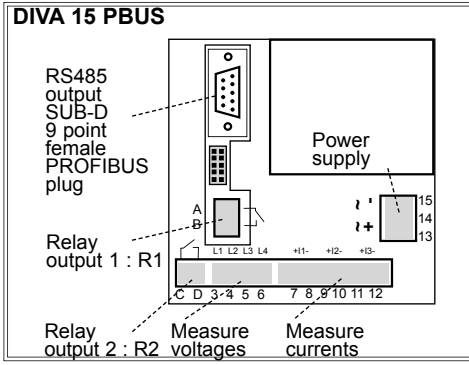
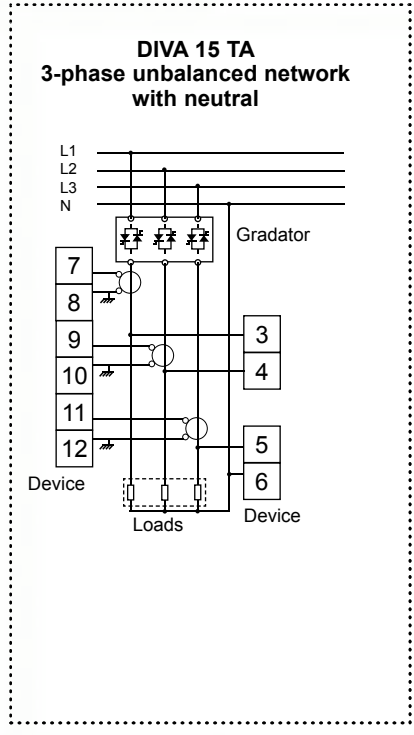
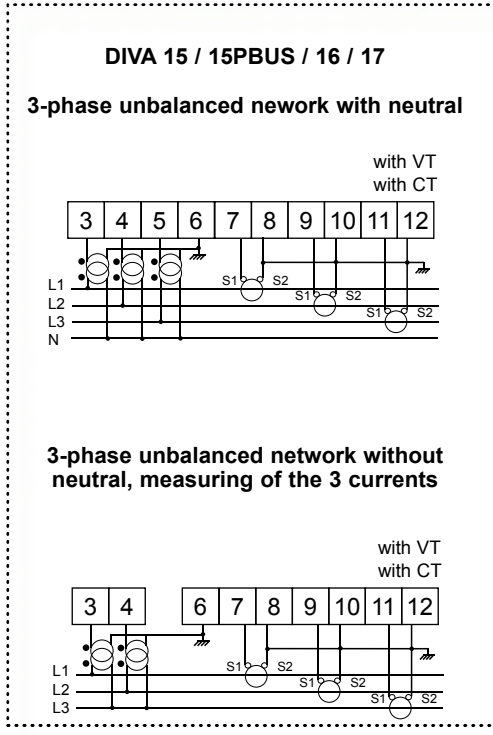
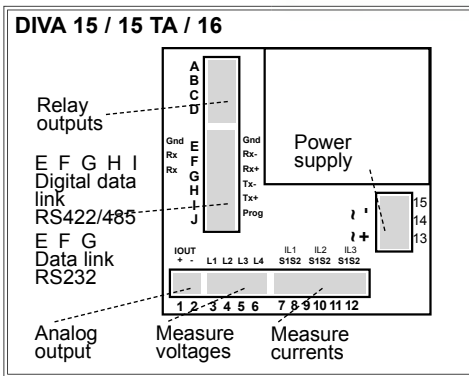
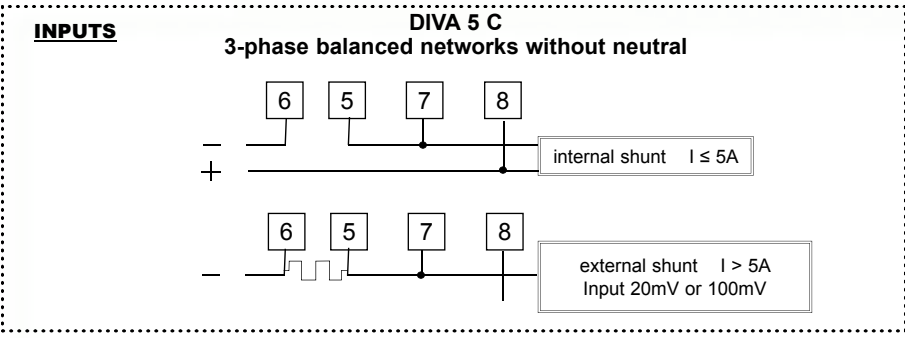
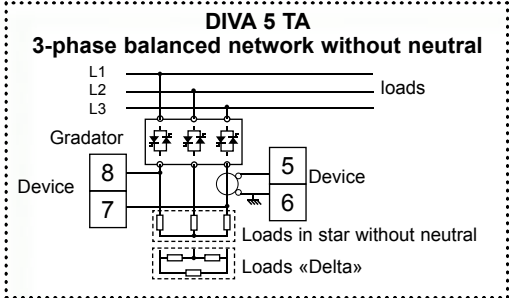
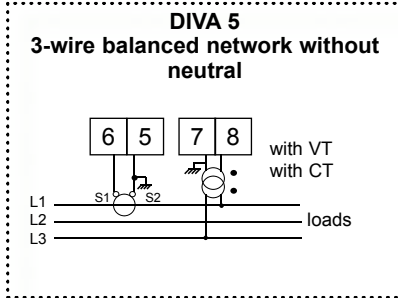
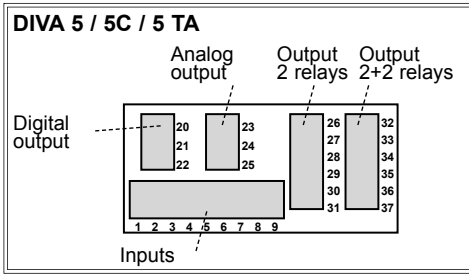
Name	Type	Features
<b>Analog output</b> A1, A2, A3	<u>DIVA 5 / DIVA 5C</u> : <u>3 Types of outputs on choice</u> : Active current 0/4-20 mA Passive current 0/4-20 mA (Vmax. = 30Vdc) Voltage 0-10V Programmable scale ratio with enlarging effect. Return value in case of self-diagnosis error. Galvanic partition : 2,5kV eff.50Hz-1min.	Scale setting : 0 to 100% of the measure range by programming Admissible load : $0\Omega < R_c < 500\Omega$ (current) and $L_r > 2k\Omega$ (voltage). Resolution of the board : 24000 points. Accuracy : 0.1% of the full scale (in relation to the display). Residual ripple $\leq 0.2\%$ . Response time : 40 ms. Thermic drifts : $< 100ppm (\pm 20mA) < 200ppm (0/20mA)$
		
<b>Analog output</b> A	<u>DIVA 15 / 15TA / 16</u> : Programmable current output (mA) -20/20 -10/10 -5/5 0/5 0/10 0/20 4/20 mA <u>DIVA 5 TA</u> : Programmable current output (mA) 0/5 0/10 0/20 4/20 mA Galvanic partition : 2kV eff.50Hz-1min.	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 $\Omega$ load. Response time 50ms ( $< 120ms$ input $\rightarrow$ output). Thermic drifts : $< 100ppm (\pm 20mA) < 200ppm (0/20mA)$
		
<b>Relay outputs</b> R1, R or R4	<u>3 Types of outputs available accor. to versions</u> : R1 : 1 programmable setpoint relay R : 2 independ. programmable setpoint relays R4 : 4 independ. programmable setpt. relays Combinable relays : Setpoints or/and pulses Type of contact : potential free contact. Galvanic partition : 2kV eff.50Hz-1min. Rated load : 5A - 250Vac	<u>Energy pulse output (except DIVA 5C)</u> Count rate : 1 to 4 pulses per second max. Pulse width : 100 to 400ms by programming Weight of the pulses programmable <u>Setpoint relays</u> Setting of the setpoints : 0 to 100% of the measure range by programming Switching hysteresis : 0 to 15% of the setpoint by programming (0 to 100% for DIVA5/5C) Time delay : 0 to 15s. (25s DIVA 5) by programming in 1s. increments (0.1s for DIVA5/5C)
		
<b>Digital outputs</b> N	<u>DIVA 5/5C</u> : RS485 (2wire) Insulated (2,5kV) Modbus Jbus RTU 8 bits : Programmable parity. 1 start bit, 8 parityless bits, 1 stop bit. Format of the data : integer and double integer. Slave number programmable from 1 to 255 with a transmission speed between 1200 and 19200 bauds. <u>DIVA 15PBUS</u> : RS485 Insulated (2kV) PROFIBUS DP. Sub-D9 points female connecting. Transmission speed from 9600 to 12 Mbauds. Format of the data : integer 16 bits. <u>DIVA 5TA / 15 / 16 / 17 / 15 TA</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 programmable, integer 16 bits. Slave number programmable from 1 to 250 with a transmission speed of 4800 / 9600 / 19200 bauds.	
		
<b>Harmonics analysis</b> H	<u>DIVA 15PBUS</u> : PROFIBUS DP retranmi. of the odd harmonics and the THD of the 3 volt. and the 3 currents from rank 3 to 29. <u>DIVA 15 &amp; 17</u> : Dipslay of the harmonics and the THD (harmonics distortion rate) of the 3 voltages and the 3 currents from rank 3 to rank 50 (even and odd). Retransmission possible in Modbus.	
<b>Bargraph display</b> B	<u>DIVA 5/5C</u> : 16 led display Adjustable brightness	Allows a quick evaluation of the measured value variations. Scale factor programmable.
		
<b>Power supply</b> 2 or 3	High voltage (2) : 90-270Vac and 88-350Vdc or Low voltage (3) : 20-53Vac and 20-75Vdc (40/60/400Hz)	

# Coding

Single or 3-phase balanced networks with or without neutral						
Electrical network analyser	<b>DIVA 5/ DIVA 5C</b>	A*	R or R4	N	B	* Output I or U : specify A1, A2 or A3 Output RS485 Modbus
Wave train and phase angle	<b>DIVA 5 TA</b>	A	R	N		Output I - Output RS485 Modbus
Single or 3-phase balanced/unbalanced networks with or without neutral						
Sinusoidal signals	<b>DIVA 15</b>	A	R	N	H	Output I - RS485/422 Modbus output
Wave train and phase angle	<b>DIVA 15 TA</b>	A	R	N		Output I - RS485/422 Modbus output
Digital output RS485 Profibus DP	<b>DIVA 15 PBUS</b>	1R or R		H		RS485 Profibus DP output
Network at 400 Hz	<b>DIVA 16</b>	A	R	N		Output I - RS485/422 Modbus output
2 independent insulated digital outputs	<b>DIVA 17</b>	1R		H		2 RS485/422 Modbus outputs
<u>Example</u> : For a DIVA 5TA with an analog output (mA passive) and 2 relays supplied in 230 Vac, request reference : DIVA 5TA A2R 2		<u>Example</u> : For a DIVA 15 with an analog output and 2 alarm set-points supplied in 230 Vac, request reference : DIVA 15 AR 2				

# Connectings

View of the rear face of the instruments / location of the connection terminals  
Wiring examples :



*These instruments are dedicated to industrial applications. They have to be installed in an electrical switchbox, or equivalent.*

Your representative

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