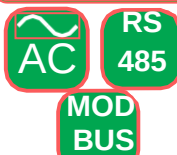


# P30P TRANSDUCER OF 1-PHASE POWER NETWORK PARAMETERS

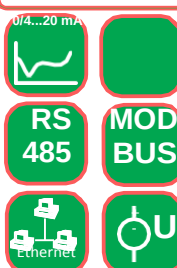
## FEATURES:



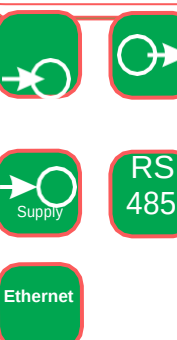
## INPUT:



## OUTPUT:



## GALVANIC ISOLATION:



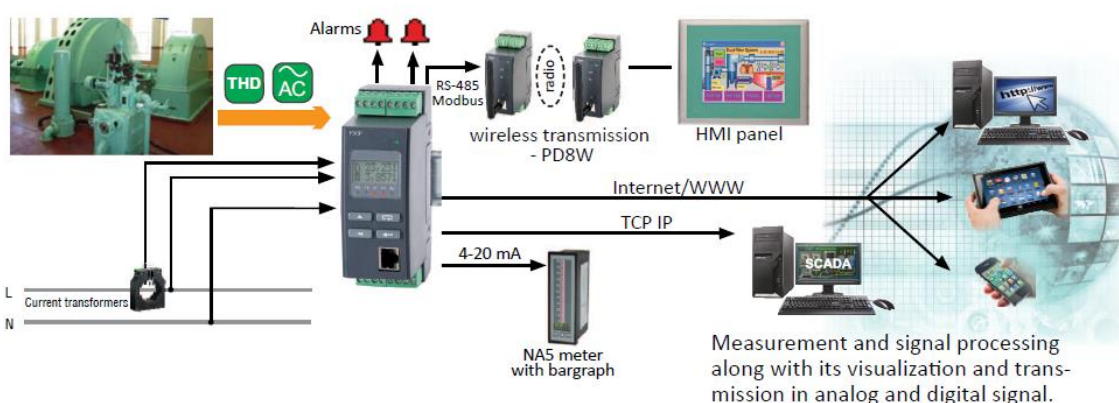
NEW!



Measurement of 1-phase power network parameters.

- Conversion of measured value in an output signal on the base of the individual characteristic.
- 1 or 2 alarm relays with NO contact operating in 6 modes.
- Additional supplying output 24 V d.c 30 mA switched-on/switched-off (option).
- Recording of input signals in internal memory, on SD/SDHC card (option) or internal file system memory (option).
- Interface RS-485 Modbus RTU.
- SD/SDHC support (option).
- RS-485 Master mode – possibility to poll 1 device.
- Interface Ethernet 10/100 BASE-T (option).
  - Protocol: Modbus TCP/IP, HTTP, FTP.
  - Services: www server, ftp server, client DHCP.

## EXAMPLE OF APPLICATION



## INPUTS AND MEASURING RANGES

|                                                                                        |                                                      | (for direct measurement, for ratios $K_i=K_u=1$ )                                                                      | (for averaging 1s)                                                                   |
|----------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| RMS current $I$ A,<br>Mean RMS current $I_{\Sigma}$ A                                  | 1 A<br>5 A                                           | <u>0.01 ... 1</u> ...1.200 A~<br><u>0.05 ... 5</u> ... 6.000 A~                                                        | $\pm 0.2 \%$                                                                         |
| RMS voltage $U$ V<br>(dependent on execution code) 230 V                               | 100 V                                                | <u>5.5 ... 100</u> ...120 V<br><u>12.5 ... 230</u> ... 300 V                                                           | $\pm 0.2 \%$                                                                         |
| Frequency $f$ Hz                                                                       | 2...40.0 ... 60.0 ... 100 Hz                         |                                                                                                                        | $\pm 0.1 \%$                                                                         |
| Active power $P$ W<br>Mean active power $P_{\Sigma}$ W                                 | 1 A, 100 V<br>5 A, 100 V<br>1 A, 230 V<br>5 A, 230 V | -144...-100 ... 100...144<br>-720...-500 ... 500...720<br>-360...-230 ... 230...360<br>-1800...-1150 ... 1150...1800   | $\pm 0.5 \%$ [W]<br>$\pm 1.0 \%$ [var]                                               |
| Reactive power $Q$ var<br>Apparent power $S$ VA<br>Apparent mean power $S_{\Sigma}$ VA | 1 A, 100 V<br>5 A, 100 V<br>1 A, 230 V<br>5 A, 230 V | <u>0 ... 100</u> ...144 VA<br><u>0 ... 500</u> ...720 VA<br><u>0 ... 230</u> ...360 VA<br><u>0 ... 1150</u> ...1800 VA | $\pm 0.5 \%$                                                                         |
| Active power factor (P/S) PF<br>Factor $\cos \varphi$                                  |                                                      | -1 .. 0 .. 1                                                                                                           | $\pm 0.5 \%$                                                                         |
| Tangent $\tan \varphi$ (Q/P) $\tan \varphi$                                            |                                                      | -1.2 .. 0 .. 1.2                                                                                                       | $\pm 1 \%$                                                                           |
| Active input/ output energy<br>$E_{\Sigma}$ kWh $E_{\Sigma}$ kWh                       |                                                      | 0 .. 9 999 999.9 kWh                                                                                                   | $\pm 0.5 \%$                                                                         |
| Reactive inductive/ capacitive energy<br>$E_L$ varh $E_C$ varh                         |                                                      | 0 .. 9 999 999.9 kvarh                                                                                                 | $\pm 1 \%$                                                                           |
| Apparent energy $E_{\Sigma}$ Vah                                                       |                                                      | 0 .. 9 999 999.9 Vah                                                                                                   | $\pm 0.5 \%$                                                                         |
| THD $\%U$ $\%I$                                                                        |                                                      | 0...100%                                                                                                               | $\pm 5 \%$                                                                           |
| Phase angle U, I                                                                       |                                                      | -180°...180°                                                                                                           | $\pm 1 \%$<br>(for $\varphi < -5^\circ ... 5^\circ$<br>$I > 10\% I$ , $U > 10\% U$ ) |

# P30P TRANSDUCER OF 1-PHASE POWER NETWORK PARAMETERS

## OUTPUTS

| Output type                                                           | Properties                                                                     | Remarks            |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------|
| Analog OUT1, OUT2<br>(1 or 2 outputs - depends on transducer version) | OUT1                                                                           |                    |
|                                                                       | current: 0/4...20 mA, load resistance $\leq 500 \Omega$                        | accuracy class 0.1 |
|                                                                       | voltage: 0...10 V, load resistance $\geq 500 \Omega$                           |                    |
| OUT2                                                                  |                                                                                |                    |
|                                                                       | current: 0/4...20 mA, load resistance $\leq 250 \Omega$                        | accuracy class 0.5 |
|                                                                       | voltage: 0...10 V, load resistance $\geq 500 \Omega$                           |                    |
| Relay OUT2,OUT3<br>(1 or 2 outputs - depends on transducer version)   | 1 or 2 relays; voltageless contacts – NO – maximum load 5A 30V d.c., 250V a.c. |                    |
| Additional supplying output OUT3                                      | 24 V d.c. / 30 mA (optional)                                                   |                    |

## DIGITAL INTERFACE

| Interface type                    | Properties                                        | Remarks                                                         |
|-----------------------------------|---------------------------------------------------|-----------------------------------------------------------------|
| Ethernet 10/100 Base-T (optional) | Modbus TCP/ IP HTTP, FTP                          | www, ftp server, client DHCP                                    |
| RS-485                            | Modbus RTU: 8N2, 8E1, 8O1, 8N1<br>Address 1...247 | baud rate: 4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4, 256 kbit/s |

## EXTERNAL FEATURES

|                    |                                         |                     |
|--------------------|-----------------------------------------|---------------------|
| Overall dimensions | 45 120 100 mm                           |                     |
| Weight             | < 0.25 kg                               |                     |
| Protection grade   | for housing: IP40/ IP30                 | for terminals: IP20 |
| Readout field      | LCD 2 x 8 characters with LED backlight |                     |

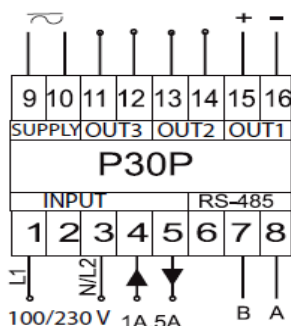
## RATED OPERATION CONDITIONS

|                  |                                                                        |                           |
|------------------|------------------------------------------------------------------------|---------------------------|
| Supply voltage   | • 85...253 V a.c., 85...300 V d.c.<br>• 20...40 V a.c., 20...60 V d.c. | power consumption 5 VA    |
| Temperature      | ambient: -25...+55°C                                                   | storage: -30...+70°C      |
| Humidity         | 25...95 %                                                              | inadmissible condensation |
| Working position | any                                                                    |                           |

## SAFETY AND COMPATIBILITY REQUIREMENTS

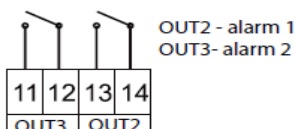
|                                |                                                                           |                      |
|--------------------------------|---------------------------------------------------------------------------|----------------------|
| Electromagnetic compatibility  | noise immunity                                                            | acc. to EN 61000-6-2 |
|                                | noise emissions                                                           | acc. to EN 61000-6-4 |
| Isolation between circuits     | basic / reinforced (see user's manual)                                    | acc. to EN 61010-1   |
| Pollution level                | 2                                                                         |                      |
| Installation category          | III for input voltage up to 300 V d.c.,<br>with additional resistance D5, |                      |
|                                | II for input voltage 600...1000 V d.c.<br>with additional resistance D5   | acc. to EN 61010-1   |
|                                |                                                                           |                      |
| Maximal phase-to-earth voltage | • for supply and input circuits 300 V                                     |                      |
|                                | • for other circuits 50 V                                                 |                      |
| Altitude above sea level       | < 2000 m                                                                  |                      |

## CONNECTION DIAGRAM

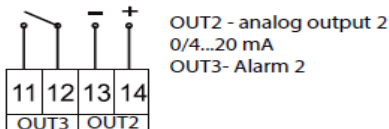


SUPPLY - supply  
OUT2 - output no.2 (alarm or analog output)  
OUT3 - output no.3 (alarm or supplying output 24V)  
OUT1 - main analog output no.1  
INPUT - measuring input  
RS-485 - interface RS-485

### P30P-XXX11XXXXX



### P30P-XXX21XXXXX



**SEE ALSO:**



transformers

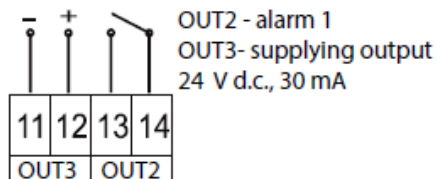


software.

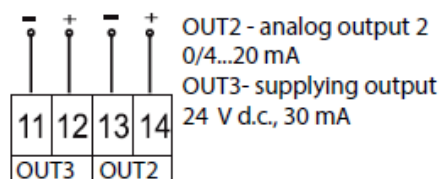
# P30P TRANSDUCER OF 1-PHASE POWER NETWORK PARAMETERS

## CONNECTION DIAGRAM

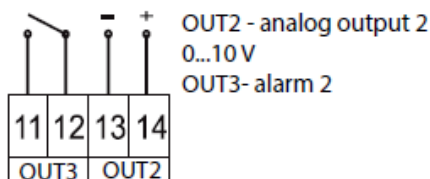
### P30P-XXX12XXXXX



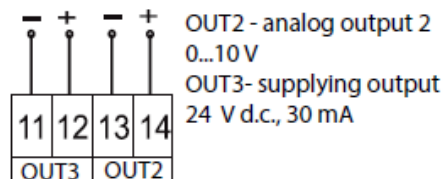
### P30P-XXX22XXXXX



### P30P-XXX31XXXXX



### P30P-XXX32XXXXX



## ORDERING

|                                                        |    |   |   |   |   |    |   |   |
|--------------------------------------------------------|----|---|---|---|---|----|---|---|
| P30P -                                                 | X  | X | X | X | X | XX | X | X |
| voltage 100 V, current 1/5 A                           | 1  |   |   |   |   |    |   |   |
| voltage 230 V, current 1/5 A                           | 2  |   |   |   |   |    |   |   |
| current (0/4...20 mA)                                  | 1  |   |   |   |   |    |   |   |
| voltage (0...10 V)                                     | 2  |   |   |   |   |    |   |   |
| without                                                | 0  |   |   |   |   |    |   |   |
| with external SD/SDHC card                             | 1  |   |   |   |   |    |   |   |
| with Ethernet interface and archive file system memory | 2  |   |   |   |   |    |   |   |
| relay A1, 5A, 30V d.c., 250V a.c.                      | 1  |   |   |   |   |    |   |   |
| analog current output (0/4...20 mA)                    | 2  |   |   |   |   |    |   |   |
| analog voltage output (0...10 V)                       | 3  |   |   |   |   |    |   |   |
| relay A2, 5A, 30V d.c., 250V a.c.                      | 1  |   |   |   |   |    |   |   |
| power output 24 V d.c. / 30 mA                         | 2  |   |   |   |   |    |   |   |
| 85...253 V a.c., 85...300 V d.c.                       | 1  |   |   |   |   |    |   |   |
| 20...40 V a.c., 20...60 V d.c.                         | 2  |   |   |   |   |    |   |   |
| standard                                               | 00 |   |   |   |   |    |   |   |
| custom-made*                                           | XX |   |   |   |   |    |   |   |
| Polish                                                 | P  |   |   |   |   |    |   |   |
| English                                                | E  |   |   |   |   |    |   |   |
| other*                                                 | X  |   |   |   |   |    |   |   |
| without extra requirements                             | 0  |   |   |   |   |    |   |   |
| with an extra quality inspection certificate           | 1  |   |   |   |   |    |   |   |
| acc. to customer's request*                            | X  |   |   |   |   |    |   |   |

\* after agreeing with the manufacturer

### Order Example :

**P30P - 11112100E1** means the transducer P 30 P in standard version with: input range 100 V and 1/5 A with analog current output 0/4...20 mA, external SD/SDHC card, relay and power output 24 V/30 mA, supply 85...235 V a.c./d.c., user's manual in English and an extra quality inspection certificate.



3-phase power network meter/analyzer -ND1.



3-phase power network meter - ND20.



Analog meters

For more information about ST products please visit our website:  
[www.sifamtinsley.com](http://www.sifamtinsley.com)

Sifam Tinsley Instrumentation Inc.  
3105 Creekside Village Drive, Suite 801  
Kennesaw, GA 30144, USA  
Email:  
[info@sifamtinsley.com](mailto:info@sifamtinsley.com)  
Toll Free: 800-879-6171  
[www.sifamtinsley.com](http://www.sifamtinsley.com)