HCW43 TRANSDUCER OF POWER NETWORK PARAMETERS

FEATURES

MOD BUS, RTC, LPConfig Program, P,Q, C L L C

INPUT:

AC

OUTPUTS:

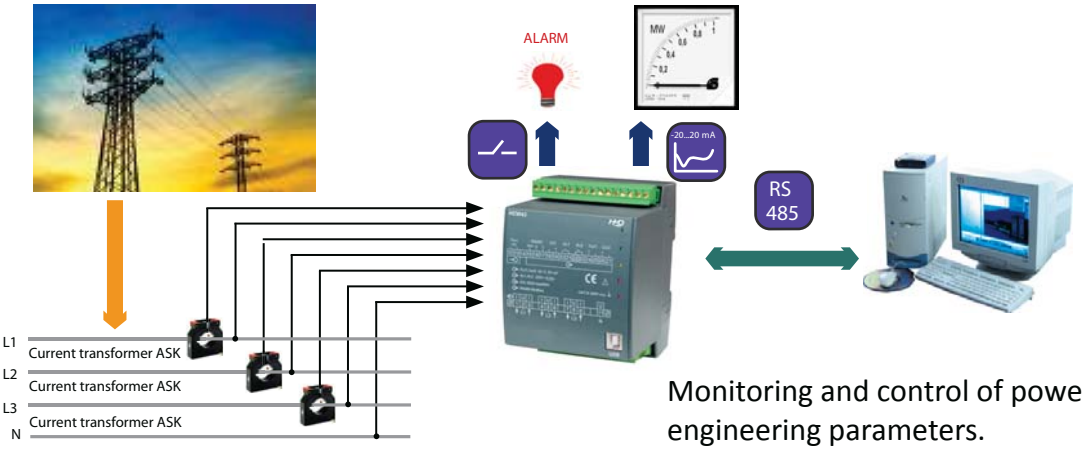
-20...20 mA, RS 485, USB

GALVANIC ISOLATION:

Supply, RS 485

- Measurement and conversion of power network parameters in 3 or 4-wire balanced or unbalanced systems.
- Tetraquadrantic energy measurement (Ep+, Ep-, EQL, EQc).
- Measurement of 15, 30 or 60 minutes' mean active power (synchronization by an internal clock or a walking window) with the archiving function of 1000 last samples.
- Programmable current and voltage transformer ratios.
- Programmable parameters through the RS-485 interface or USB when using the free LPCon program.
- RS-485 communication interface with MODBUS protocol.
- Detection and signalling of incorrect phase sequence.

EXAMPLE OF APPLICATION



Monitoring and control of power engineering parameters.

MEASURED QUANTITIES AND MEASURING RANGES

Measured value	Measuring range	L1	L2	L3	Σ	Basic error
Current 1/5A L1...L3	0.02...6 A a.c.*	●	●	●		±0.2%
Voltage L-N	2.9...276 V a.c.*	●	●	●		±0.2%
Voltage L-L	10...480 V a.c.*	●	●	●		±0.5%
Frequency	45.0...100.0 Hz	●	●	●		±0.2%
Active power	-1.65 kW...1.4 W...1.65 kW*	●	●	●	●	±0.5%
Reactive power	-1.65 kvar...1.4 var...1.65 kvar*	●	●	●	●	±0.5%
Apparent power	1.4 VA...1.65 kVA*	●	●	●	●	±0.5%
Tangens ⍰	-1.2...0...1.2	●	●	●	●	±1%
Power factor PF	-1...0...1	●	●	●	●	±0.5%
Angle between U and I	-180° ... 180°	●	●	●		±0.5%
Input active energy	0 .. 99 999 999.9 kWh*				●	±0.5%
Output active energy	0 .. 99 999 999.9 kWh*				●	±0.5%
Inductive reactive energy	0...99 999 999.9 kvarh*				●	±0.5%
Capacitive reactive energy	0...99 999 999.9 kvarh*				●	±0.5%

* - for ratio Ki=Ku=1. Current ratio Ki programmable in the range 1...1000. Voltage ratio Ku programmable in the range 1...4000

OUTPUTS

Type of output	Properties
Relay output	2 relays, voltageless NO contacts, load: 250 V a.c./ 0.5 A a.c.
Impulse energy output	O/C passive, acc. to EN 62053-31, impuls constant: 5000 imp/kWh, independent on Ki, Ku ratio settings
Analog output	2 programmable outputs: -20...0..20 mA, R_{load} = 0...500 Ω , accuracy 0.2%

DIGITAL INTERFACE

Type of interface	Transmission protocol	Mode	Rate
RS-485 Modbus	MODBUS RTU	8N2, 8E1, 8O1, 8N1	4.8; 9.6; 19.2; kbit/s
USB 1.1/ 2.0	MODBUS RTU	8N2	9.6 kbit/s

DISTRIBUTEUR CONSEIL DEPUIS 1985

Contact :
hvssystem@hvssystem.com

Tél : 0326824929
Fax : 0326851908

Siège social :
2 rue René Laennec
51500 Taissy
France

www.hvssystem.com

HCW43 TRANSDUCER OF POWER NETWORK PARAMETERS

EXTERNAL FEATURES

Overall dimensions	96 X 120 X 100 mm	fixing on a 35mm DIN rail
Weight	0.3 kg	
Protection grade	for casing: IP40	for terminals: IP10

RATED OPERATING CONDITIONS

Supply voltage	85 .. 253 V a.c. (40 .. 400 Hz) or d.c. or 20 .. 40 V a.c. (40 .. 400 Hz) or d.c.	Power input ≤ 6 VA
Power input	in voltage circuit ≤ 0.05 VA	in current circuit ≤ 0.05 VA
Input signal	• 0 .. 0.005 .. 1.2 In; 0.05 .. 1.2 Un for the measurement of current and voltage; • 0 .. 0.1 .. 1.2 In; 0 .. 0.1 .. 1.2 Un or the measurement of coefficients Pf_i, $tg\phi_i$	• signal frequency 45 .. 66 .. 100 Hz • sinusoidal signal (THD ≤ 8%)
Power factor	-1 .. 0 .. 1	
Analog outputs	-24 .. -20 .. 0 .. 20 .. 24 mA	
Temperature	ambient: -10...23...55°C	storage: -30...70°C
Humidity	25 .. 95%	inadmissible condensation
Additional error (in % of the intrinsic error)	from output signals frequency < 50%	from ambient temperature changes < 50%/ 10%
Operating position	any	
External magnetic field	0 .. 400 A/m	
Short duration overload (5 s)	voltage input: 2 Un (max. 1000 V)	current input: 10 In
Admissible peak factor	current intensity: 2	voltage: 2

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	acc. to EN 61010-1
Pollution level	2	acc. to EN 61010-1
Installation category	III	
Maximal phase-to-earth voltage	600 V	
Altitude a.s.l.	< 2000 m	

ADDITIONAL ERRORS IN % OF THE INTRINSEC ERROR

From frequency of input signals	< 50%
From ambient temperature changes	< 50%/ 10%
For THD > 8%	< 100%

CONNECTION DIAGRAM

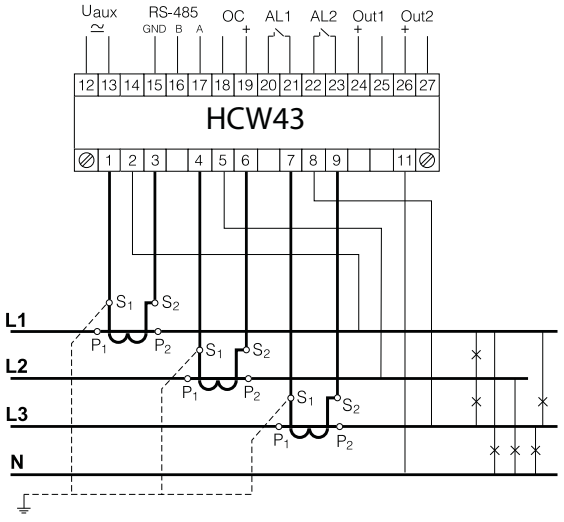


Fig. 1 Exemplary connection diagram for 4-wire network.

ORDERING

HCW43 -	X	X	X	XX	X
Input current:					
1 A (X/1)	1				
5 A (X/5)	2				
Input voltage(phase/phase-to-phase) Un:					
3 x 57.7/ 100 V		1			
3 x 230/ 400 V		2			
Supply voltage:					
85...253 V d.c./a.c.			1		
20...40 V d.c./a.c.			2		
Version:					
standard				00	
custom-made*				XX	
Acceptance tests:					
without extra quality requirements					8
with an extra quality inspection certificate					7
according to customer's request*					X

* version code will be established by the manufacturer

Example of order:
The code: **HCW43 - 2 2 1 00 7** means:
HCW43 - transducer of P43 type
2 - input current: 5 A
2 - input voltage: 3 x 230/400 V
1 - supply voltage: 85..253 V d.c./a.c.
00 - standard version
7 - with an extra quality inspection certificate.

SEE ALSO:

PROGRAMMABLE TRANSDUCER

HCU12

TRANSDUCER SUPPLIED FROM A CURRENT LOOP

HC15

DIGITAL PANEL METER

HI20

MICROPROCESSOR CONTROLLER

HR20

DISTRIBUTEUR CONSEIL DEPUIS 1985

Contact :
hvssystem@hvssystem.com

Tél : 0326824929
Fax : 0326851908

Siège social :
2 rue René Laennec
51500 Taissy
France

www.hvssystem.com