Digital Power Transducer

HC 6600

Introduction

About the Digital Power Transducer HC 6600

HC 6600 digital power transducer is a conceptualized and designed to revolutionize the approach to traditional power transducer.

This power transducer is a compact, electronically advanced and programmable device. It is the answer to future generation of electrical transducers' needs and methodology.

Environmental Impact & Cost Saving

The HC 6600 can replace many units of conventional analog or digital instruments, and change over switches (e.g. Amp, Volt, KVA, KW, PF, KWH, KVarH, FQ ... etc.).

This saves the wiring material usage and reduces the cost on traditional transducers' needs.

Increase Productivity & Efficiency

The HC 6600 is specifically designed to meet the world's mostly and widely used ANSI / IEEE / IEC standards and it also fits the DIN rail mounting.

The HC 6600 greatly reduced cabling complexity and time. It is also a standardize hardware and suitable for either 3 phase 3 wires or 3 phase 4 wires system.

Improved Technical Superiority and Reliability

The HC 6600 is endowed with excellent technical specifications like overload capabilities, accuracy levels, long terms stability. Those specifications are for exceeding those of conventional instruments.

To meet the future transducer environments, the HC 6600 is equipped with a serial port (RS-485 or RS-232) to allow the connection to an open architecture computerized network. It can run on PC or data acquisition system, and complying the Modbus protocol. The software provides a simple yet practical solution to energy management in factories or plants, small industries, building services and etc.

Parameters Conversion

This microprocessor-based power transducer provides compatibility with Modicon Modbus system as a standard feature. The HC 6600 series provides more than 30 power and energy parameters.

Features

- ◎ For factory and building automation
- ◎ Modbus RTU
- ◎ Maximum 580V
- ◎ True RMS conversion
- ◎ Build in RTC (real time clock)
- ◎ Field programmable PT / CT ratio
- ◎ Accuracy up to 0.15%
- ◎ Data log
- ◎ 2 ports : RS485 + RS232
- ◎ Memory for all setup and energy data
- ◎ Comprehensive self test diagnostics
- ◎ Low input burden 0.1VA (5A / 120V)
- ◎ Wide Power supply range 80-260V AC/DC
- ◎ Compact physical configuration
- ◎ 2KV RMS input / output / power isolation
- ◎ Commonly for DIN rail-mounting
- ◎ Protective touch-proof terminals and enclosure meeting requirements of VBG4 & VDE 0106 part 100 (Germany)

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Factory & Building Automation (FA & BA)

The HC 6600 was developed for factory and building automation (FA & BA) applications. More of power and energy parameters can easily apply to wide range of AC switch-gear or industrial power distribution system.

PLC Modbus Compatible

The Modbus communication protocol allows information and data to be efficiently transferred between HC 6600 and Modicon programmable logic controller (PLC), or other third party Modbus compatible monitoring and control system. The HC 6600 can also establish a monitoring system just simply adopt an IPC-based centralized master display software. The RTU mode Modbus protocol with default baud rate 9600 bps, 8 data bit.

Build-in Real Time Clock (RTC)

The HC 6600 is with a build-in RTC (real time clock) that provides the internal time standard and time stamp for all records attached to each maximum and minimum energy measurements. RTC also provides the demand-control time period 15/30 minutes for maximum power demand control of utility load shedding.

Memory for all setup and energy data

All of the transducer status setting and energy data are retaining in memory while losing the power. The records include the watt-hour that been measured, the record of maximum demand value, date and time, PT and CT ration, the measured system configuration, the settings and related communication.

Field Programmability

In the site, the HC 6600 is able to set like CT & PT ratio, Modbus address, communication baud rate, parity etc. The HC 6600 can be programming by rear RS-485 / RS-232 communication port from a PC.

Accuracy up to 0.15%

With a well developed conversion, sampling and software compensation technology that makes HC 6600 successfully meet the accuracy requirements of modern transducer. The accuracy of voltage and current can be up to 0.15%, and other power can be up to 0.25%.

Comprehensive System Integration

The HC 6600 provides the Modbus (are compatible with the Modicon system as a standard feature for comprehensive system integration). The PLC compatible RS-485 / RS-232 Modbus communication protocol allows information and data to be efficiently transferred between HC 6600 and Modicon programmable logic controller (PLC) existing RTU Power SCADA system and DCS system, or software backup. We would like you to contact Hsiang Cheng Electric Corp. or our representative sales department for further information.

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Model & Ordering Number

Model : HC 6600

Ordering : HC 6600 – B – 5.0A – H – 3 – A

Version

Current Input
1.0A
5.0A

Power
H : AC 80-260V, DC 80-330V
L : DC 20-60V

Option
A : Data loggers
N : None
Y : Special ordering

Communication Part
3 : RS-485 + RS-232
Y : Special ordering

Specification

Programmable measurements / Accuracy / Display readouts

Parameter	Accuracy	Phase 1	Phase 2	Phase 3	Total
VP x 3	0.15% fs	VP1	VP2	VP3	VPE
VL x 3	0.15% fs	VL1	VL2	VL3	VLE
A x 4	0.15% fs	A1	A2	A3	
Watts	0.25% fs	W1	W2	W3	W
Vars	0.25% fs	Var1	Var2	Var3	Var
VA	0.25% fs	VA1	VA2	VA3	VA
PF	0.25% fs	PF1	PF2	PF3	PF
WH	0.8% rd				WH
VarH	0.8% rd				VarH
Hz	0.03% rd				
Phase rotation					

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■ Accuracy class coincident to auto-range scale

■ Stability

Temperature range (-25 to 55℃)

Maximum 100 ppm / ℃

■ Note

◎ VP1 / VP2 / VP3 / VPE, phase to neutral voltage

◎ VL1 / VL2 / VL3 / VLE, line to line voltage

◎ A1 / A2 / A3 / AE, phase current

◎ VPE / VLE / AE, 3 phase averaged

◎ PF1 / PF2 / PF3, coincident to conversion element

◎ WH / VarH accuracy vs limited input range

Voltage ≧ 50V ; Current ≧ 10% of rating

PF ≧ 0.5

Main AC power input

■ Phase and wires

◎ 3 phase 4 wires ◎ 3 phase 3 wires

■ Range

◎ Voltage : 10~580V

◎ Current : suitable for CT secondary rating (optional)

Maximum 6A for 5A rating

Maximum 1.2A for 1A rating

◎ Power maximum 6500 (W/Var/VA)

◎ Frequency : 40~70Hz

■ Burden

◎ Voltage < 0.4VA at 600V / phase

< 0.04VA at 120V / phase

◎ Current rating < 0.1VA / phase

■ Overload capability

◎ Current (5A)

2 x rated continuous 10 x rated 30 seconds

25 x rated 2 seconds 50 x rated 1 second

◎ Voltage

750V continuous 1000V 10 seconds

1200V 3 seconds

■ Communication port

RS-485 / RS-232 : Modbus RTU protocol only

■ RTC

Maximum deviation 5 second in 24 hours

Time for year / month / day / hour / minute / sec

■ User programming

◎ Communication to baud rate and address

Baud 1.2K / 2.4K / 4.8K / 9.6K / 19.2K bits

◎ Measuring system to 3 phase 3 wires / 3 phase 4 wires

PT ratio 0.1 - 5000.0 ; CT ratio 0.1 - 5000.0

■ Dielectric strength

IEC 255-5

2KV ACrms 1 minute between input / output / power

■ Impulse and surge test

ANSI/IEEE C37.90.1-1989 (3KV) SWC test

IEC 255-22-1 class Ⅲ SWC test

IEC 255-22-4 class Ⅳ (IEC 801-4) SWC test

IEC 255-5 1.2x50 us (5KV) impulse test

■ Stability

Temperature range (-25 to 55℃)

Maximum 100 ppm / ℃

Long term stability : 0.15% drift maximum per year

■ Operating condition

Temperature range -25 to +60℃

RH 20-95% non-condensed

■ Storage condition

Temperature range -25 to +70℃

RH 20-95% non-condensed

■ Power supply

AC 80~260V, 40~70Hz, DC 80~330V

DC 20~60V (option), dissipation maximum 4 watts

■ Dimension

100 x 70.3 x 115.5 mm DIN Rail-mounting

Data logger (Option)

■ Trend logger

Maximum 8 parameter with time-stamped (A1, A2, A3, Ae, Van, Vbn, Vcn, Vpe, Vab, Vbc, Vca, Vle, Watt, Var, VA, PF, FQ)

Sample rate 1/5/15/30/60 minute per sample

Maximum 10000 data

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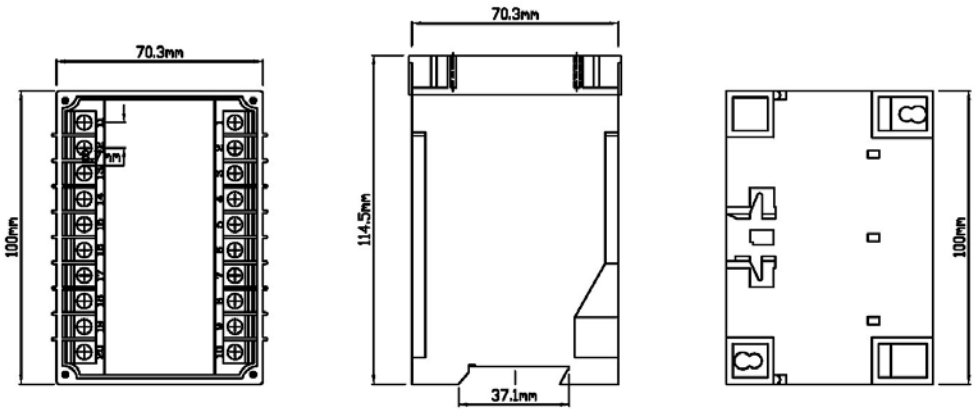
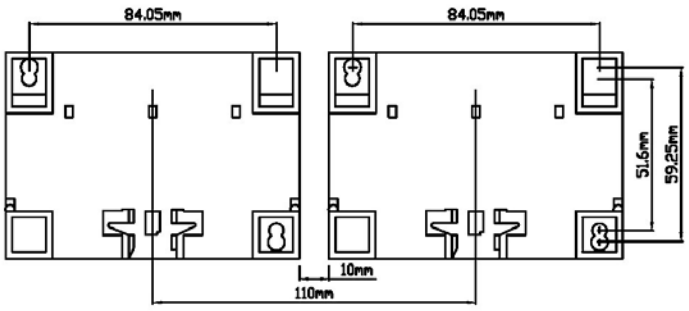
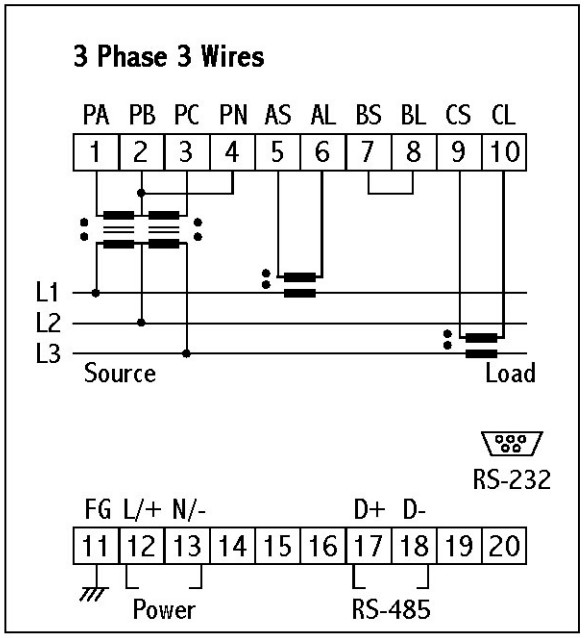
Dimension

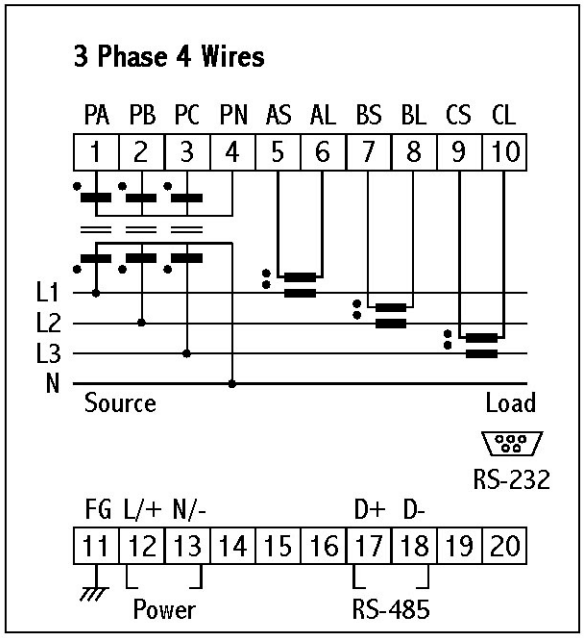


Installation instructions



Wiring





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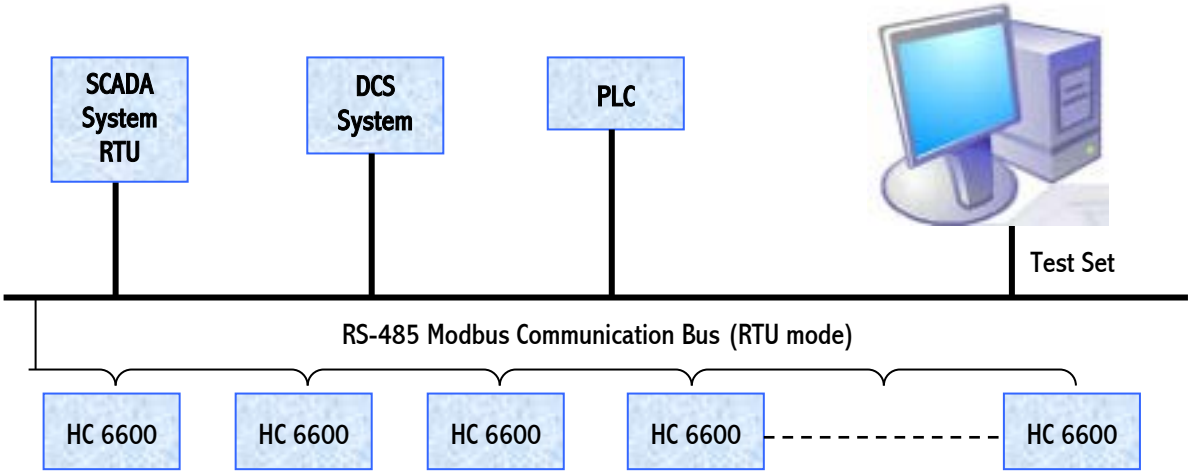
Applications

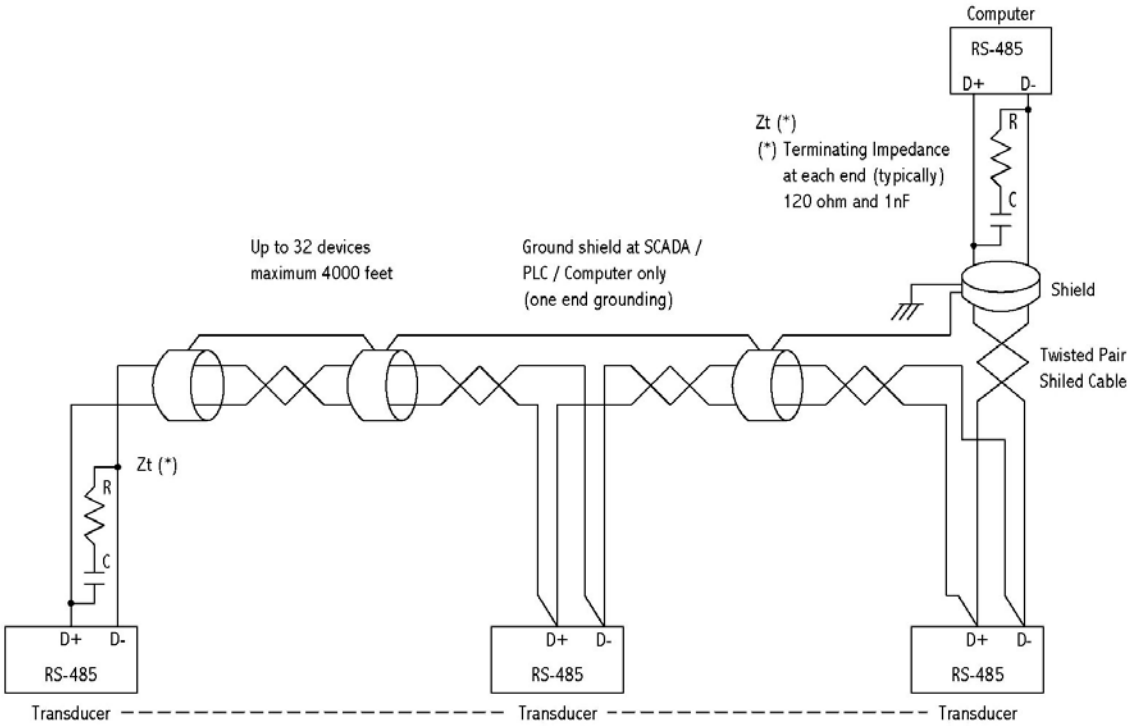
The HC 6600 PC tool a utility program that can help user to connect to "HC 6600 Power Transducer" rapidly. The HC 6600 PC Tool is provided along with every HC 6600, which allows easy access to all meter setup information and actual values via a personal computer running Windows 95/98 and one of the PC's communication ports (COM1 or COM2). The PC Tool is able to do the function as bellows:

◎ Program / Modify setup information
◎ Load / save setup information files from / to disk
◎ Read actual "Basic" value (current / voltage / power / frequency)

The HC 6600 PC Tool can be used as stand-alone without a HC 6600 to create or edit HC 6600 setup information file.



Communication wiring



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