



NICXs-300 & NICXs-400

“New Generation
of Panel Meters”



DESCRIPTION

NICXs-300 & 400 Series

The NICXs -300 and 400 series are Class1.0 multifunction power and energy meters manufactured by Siliconixs. They are the ideal choice for the monitoring and controlling of power distribution systems. Some of the Default features and electrical power parameters available on the NICXs Series, All monitored data are available via a digital Rs485 communication port running Modbus RTU protocol.

With its flexible, modular I/O and communication options, the NICXs 300 & 400 series is the most versatile and cost-effective metering solution on the market.

True-RMS Measuring Parameter
IEC 62053-21-22(Class 0.5)

Demand Controller

Universal Power Supply

THD of Voltage and Current

Individual Harmonics Up to 31st order

Optional Add On Models

- Communication - Rs485
- Demand Controller (Tripping Control 1 Relay),
- Max 2 Digital / Pulse Outputs
- Max 3 Digital Inputs

Applications

- ▶ Metering of distribution feeders, transformers, generators.
- ▶ High Harmonics Content Loads
- ▶ Power Quality Analysis
- ▶ Commercial, industrial, utility
- ▶ Automation Control and PLC Applications
- ▶ Energy management System
- ▶ Special OEM Applications

Specifications

METERING

Parameters	Accuracy		Resolution	Range
	Class 1.0	Class0.5		
Voltage	0.2 %	0.2%	0.1V	20 V- 999.9 MVA
Current	0.5%	0.2%	0.1 mA	10mA - 9999 A
Power	1%	0.5%	1w	0-99.99MW
Reactive Power	1%	0.5%	1Var	0- 99.99MVar
Apparent Power	1%	0.5%	1VA	0-99.99MVA
Power Factor	1%	0.5%	0.001	Lag-Unity-Lead
Power Demand	1%	0.5%	1w	0-99.99Mw
Apparent Power Demand	1%	0.5%	1VA	0-99.99MVA
Energy	1%	0.5%	0.1kWh	0-9999999.9kWh
Reactive Energy	2%	2%	0.1 kVArh	0-9999999.9kVArh
Apparent Energy	1%	0.5%	0.1 kVArh	0-9999999.9kVArh
Frequency	0.2%	0.1%	0.01 Hz	45.00-65.00 Hz
THD V & I	1%	1%	0.1 %	UP to 31 St Order
Running Time			0.01 h	0-9999H:99M:99 S

Inputs

Voltage Inputs(Each Channel)

System	Three Phase 3 wire or 4 wire Unbalanced
Nominal Full Scale	400Vac L-N, 690Vac L-L(+20%)
Isolation	2500Vac,50/60hz for 1 minute
Input Impedance	2Mohm per phase
Metering Frequency	45Hz - 65Hz
Pickup Voltage	20Vac

Current Inputs(Each Channel)

Nominal Current	5A/1A
Metering Range	10mA - 10A ac
Withstand	20Arms continuous,100Arms for 1 second, non-recurring
Burden	0.05VA(typical)@5Arms
Pickup Current	10 mA

OPERATING ENVIRONMENT

Operation Temperature	- 25 °C to 70 °C
Storage Temperature	- 40 °C to 85 °C
Relative Humidity	5% to 95% non- condensing

COMMUNICATION

RS-485(Standard)
MODBUS RTU Protocol,2-Wire Connection
9600-38400 baud rate

Power Supply

Universal	AC or DC
AC/DC AUXILIARY POWER	
Operating Range	85-265 Vac,50/60Hz; 100-370Vdc
Burden	5W
No Load Input Power	<400mW
Frequency	47-440 Hz
Isolation	4000Vac,45/65Hz for 1minute
Installation Category	III(Distribution)

I/O OPTION

Digital Output(DO)

Voltage Range	0-400 Vac/dc
Load Current	100mA(Max)
Output Ton+Toff	10ms ON, 10ms OFF
Isolation Voltage	5000Vac

Relay Output

Switching Voltage (Max)	250Vac, 30Vdc
Load Current	5A* 2A(L)
Set Time	10ms (Max)
Contact Resistance	30mΩ (Max)
Isolation Voltage	2500Vac

Pulse Output

Function 1 pulse per unit of energy
Scaling Configurable
Pulse duration 10 ms second default (other durations configurable)
Type N/O volt free contact.
Isolation 5000Vac,45-50Hz 1 minute

Standard Compliance

Measurement Standard IEC 62053-21,22
Environmental Standard IEC 60068-2
Safety Standard IEC 61010-1, UL 61010-1
EMC Standard IEC 61000-4/-2-3-4-5-6-8-11

NICXS-300 & 400 Series Meters

■ Function — Default ⊙ Optional Blank-NA

CATEGORY	Description	Parameters	NICXS-300	NICXS-310	NICXS-400	NICXS-410	
Metering	VAFP	Phase Voltage	V1, V2, V3, VInavg	■	■	■	■
		Line Voltage	V12, V23, V31, Vllavg	■	■	■	■
		Frequency	F	■	■	■	■
		Line Current	I1, I2, I3, In, Iavg	■	■	■	■
		Power	P1,P2,P3,Psum	■	■	■	■
		Apparent Power	S1,S2,S3,Ssum	■	■	■	■
		Reactive Power	Q1,Q2,Q3,Qsum	■	■	■	■
		Power Factor	PF1,PF2,PF3,PF	■	■	■	■
	Energy	Energy	Import,Export	■	■	■	■
		Reactive Energy	Import,Export (Lag/Lead)	■	■	■	■
Apparent Energy		Es	■	■	■	■	
Demand	Demand	DMD-kVA , DMD-kW		■		■	
Power Quality	Total Harmonics Distortion	Voltage	■	■	■	■	
	THD Harmonics Distortion	Current	■	■	■	■	
	Individual Harmonics Up to 31 V and I				■	■	
* Additional Features	Default Features	Run Hours	V/I/kW/kVA	■			
		Operating Hours	Aux Power Supply is on >0 V	■			
		Power Interruption	Aux Power Supply is Off <0 V	■			
		Events (Min/Max)	Real time Parameters	■			
Option Module	Demand Controller (Relay1 Imbuiled)	Over/Under Limit Alarm / Trip	V/ I/ P/ S/ DMD_kVA / DMD_Kw/THD_V/ THD_I	⊙	⊙	⊙	⊙
	Pulse Output/ Digital Output	Do	kWh, kvarh or kVAh	⊙	⊙	⊙	⊙
	IF Digital Output	Over/Under Limit	V/ I/ P/ S/ DMD_kVA / DMD_Kw/THD_V/ THD_I	⊙	⊙	⊙	⊙
	Digital Inputs	Wet Contact	Pulse and Status Combined Counter	⊙	⊙	⊙	⊙
	Communication	RS485 Module	Additional MODBUS RTU	⊙	⊙	⊙	⊙

Salient Features

- ⊙ High accuracy - class 1/ option 0.5 as per IEC 62053-21,22
- ⊙ Up to 4 parameter simultaneous readings on bright red LED display
- ⊙ Universal meter-
- ⊙ Selectable wiring configurations including 3-wire Delta and 4-wire Star
- ⊙ CT secondary setting of 1A or 5A
- ⊙ Complete PT and CT ratio programming on site.
- ⊙ Programmable Demand interval and type of demand calculation (Factory Set)
- ⊙ Communication Baud rate selectable between 1200 to 19200
- ⊙ RS-485 port with Modbus RTU Protocol – for easy integration with DCS/ SCADA
- ⊙ Universal power supply – accepts 83-265V AC or 110-300V DC on the same
- ⊙ Terminals
- ⊙ Easy installation – Factory Standards
- ⊙ Automatic/Manual scroll and data refresh period is user selectable
- ⊙ Password facility
- ⊙ Compact - fits 92 x 92mm cut-outs
- ⊙ Protection rating of IP-53
- ⊙ Future upgradable Customized options
- ⊙ Ideal for Energy Management Networks

Display

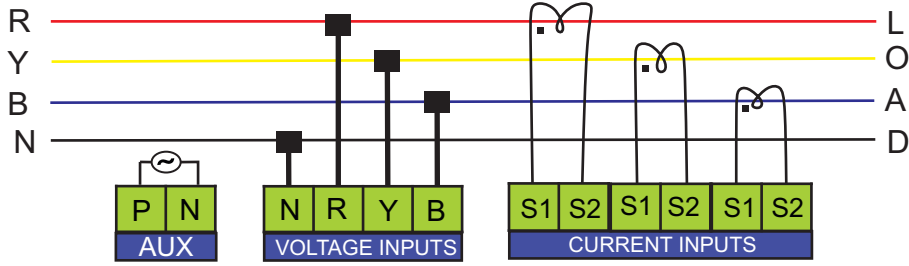
Display 4 Row 4 Digits
7 Segments Display

Digit Height 0.4"

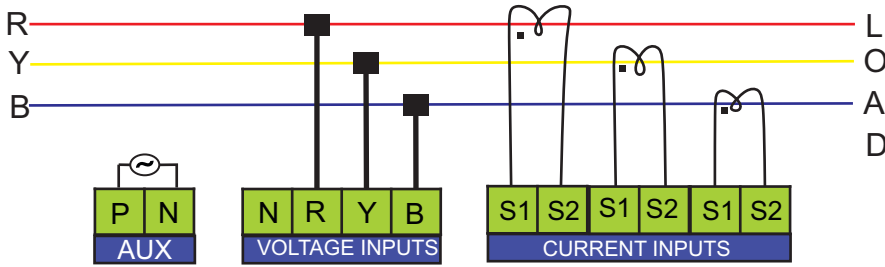
Display 4 Row 4 Digits
7 Segments Bright
Display

Typical Wiring Configuration

3Phase 4Wire Configuration (Star)



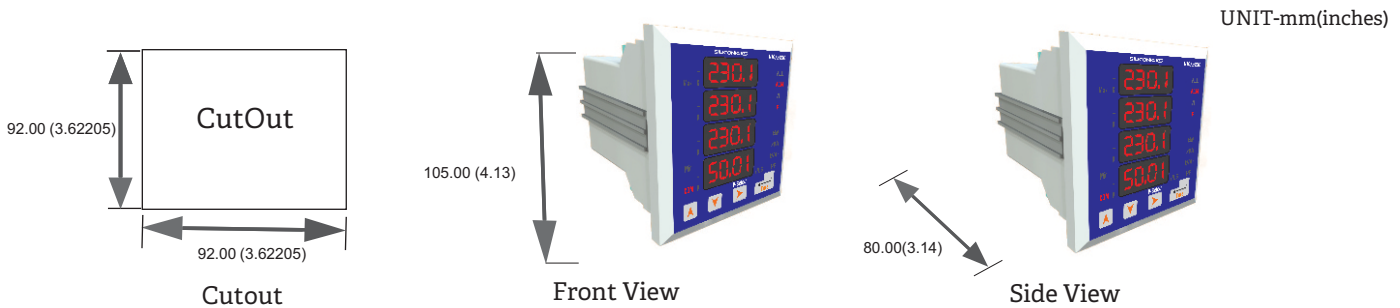
3Phase 3Wire Configuration (Delta)



CableSize(AWG):20 to 14 ; Tightening Torque(Lb-inch):6.018 to 6.992

Cable Size(mm²):0.5 to 2.5 ;Tightening Torque(N-m):0.68 to 0.79

Dimensions



Example Application

