

# IPD163C

## Single-Phase Multifunction Meter



National  
Measurement  
Institute  
Certificate of Approval  
NMI 14/2/98

### Overview

IPD163C - Single-Phase Multifunction Meter is IPD's latest offer for the low voltage energy metering market featuring DIN rail mount, compact construction, 63A direct connect input and high accuracy measurements. It complies with the requirements of National Measurement Institute (NMI) and is certified for trade use (billing applications). The meter has Class 1 kWh accuracy and high level Modbus RTU protocol. The IPD163C is a vital component of an intelligent, multifunction monitoring solution for any Billing or Energy Management System.

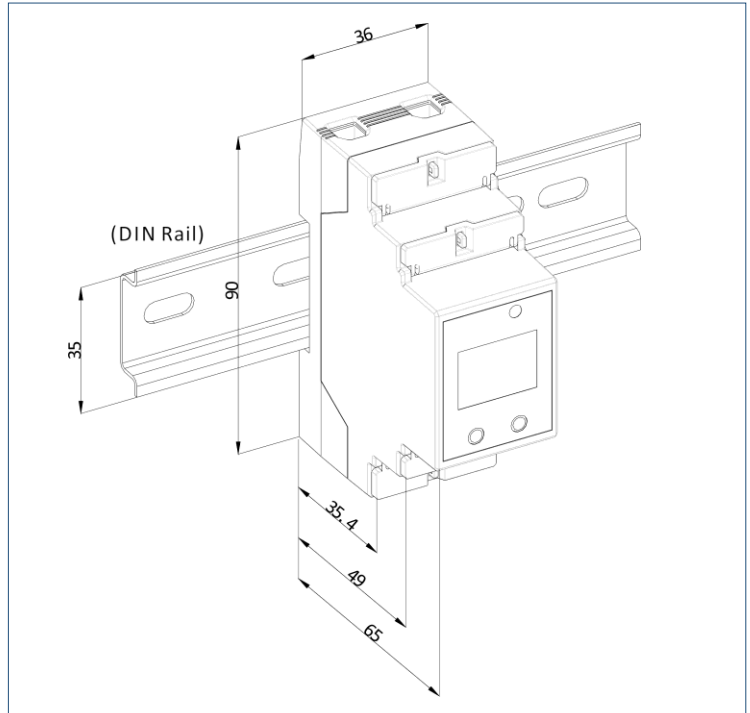
### Features

- Class 1 accuracy to IEC 62053-21
- 63A direct connect
- Low starting current @ 20mA
- Multifunction measurements
  - Voltage, Current, kW, kvar, kVA, PF and Frequency
  - kWh and kvarh Imp/Tot/Net and kVAh
- 6½ digit Multifunction LCD Display
- Self- powered, no external control power required
- kWh LED Pulse Output
- Solid State Energy Pulse Output @ 1000 imp/kWh
- RS-485 port with Modbus RTU protocol
- DIN rail mounting

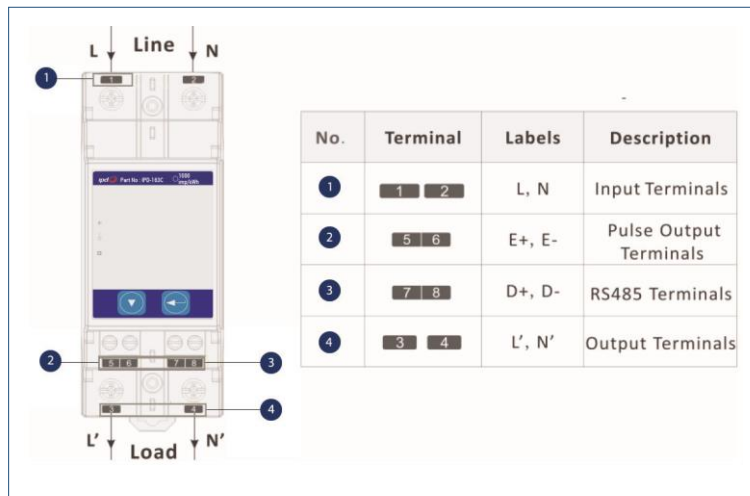
### Accuracy

Parameters	Accuracy	Resolution
Voltage	±0.5% reading	0.1V
Current	±0.5% reading	0.001A
kW, kVA	IEC 62053-21 Class 1	0.001kX
kvar	IEC 62053-23 Class 2	0.001kvar
kWh	IEC 62053-21 Class 1	0.01kWh
kvarh	IEC 62053-23 Class 2	0.01kvarh
P.F	±1.0%	0.001
Frequency	±0.02Hz	0.01Hz

### Dimensions and Installation



### Terminals and Wiring Diagram



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### Technical Specifications

Inputs (L, N)	
Voltage (Un)	240VAC
Range	0.4 to 1.1 Un
Current (Ib / Imax)	5A / 63A
Starting Current	0.4% Ib (0.02A)
Minimum Current	5% Ib (0.25A)
Frequency	45Hz-65Hz
Power Supply	Self-powered from 0.4 to 1.1 Un
Maximum Wire Size	25 mm <sup>2</sup> (4AWG)
Torque for Current Inputs	2.5 N.m
Communications	
RS-485	Modbus RTU
Maximum Wire Size	1.5mm <sup>2</sup> (16AWG)
Torque for RS485 Terminals	0.45 N.m
Environmental Conditions	
Operating Temp.	-25°C to +70°C
Storage Temp.	-40°C to +85°C
Humidity	5% to 95% non-condensing
Atmospheric pressure	70kPa to 106kPa
Mechanical Characteristics	
Unit Dimensions	36x65x90mm
Shipping Weight	0.18kg
Shipping Dimensions	120x103x42mm
Mounting	DIN-Rail Mounting

### Modbus Map

Register	Property	Description	Format	Scale/Unit
0000	RO	V	Float	V
0002	RO	I	Float	A
0004	RO	kW	Float	kW
0006	RO	kvar	Float	kvar
0008	RO	kVA	Float	kVA
0010	RO	P.F.	Float	-
0012	RO	Frequency	Float	Hz
<b>0014-0037 Reserved</b>				
0040	RW	kWh Import	INT32	x0.01, kWh
0042	RW	kWh Export	INT32	x0.01, kWh
0044	RO	kWh Net	INT32	x0.01, kWh
0046	RO	kWh Total	INT32	x0.01, kWh
0048	RW	kvarh Import	INT32	x0.01, kvarh
0050	RW	kvarh Export	INT32	x0.01, kvarh
0052	RO	kvarh Net	INT32	x0.01, kvarh
0054	RO	kvarh Total	INT32	x0.01, kvarh
0056	RW	kVAh	INT32	x0.01, kVAh

Note: For the complete Modbus table please refer to the IPD163C instructions manual.

### Standards of Compliance

Safety Requirements		
Insulation		IEC 60255-5-2000
Dielectric test		2kV @ 1 minute
Insulation resistance		>100MΩ
Impulse voltage		10kV, 1.2/50μs
Electromagnetic Compatibility EMC 2004/108/EC (EN 61326: 2006)		
Immunity Tests		
Electrostatic discharge		IEC 61000-4-2:2001 Level IV
Radiated fields		IEC 61000-4-3:2002 (10 V/m)
Fast transients		IEC 61000-4-4:2004 Level IV
Surges		IEC 61000-4-5:2005 Level IV
Conducted disturbances		IEC 61000-4-6:2006 Level III
Magnetic Fields		IEC 61000-4-8:2009 Level IV
Oscillatory waves		IEC 61000-4-12:2006 Level III
Radio Disturb		CISPR 22: 2006 Class B
Mechanical Tests		
Vibration Test	Response	IEC 60255-21-1 Level I
	Endurance	IEC 60255-21-1 Level I
Shock Test	Response	IEC 60255-21-2 Level I
	Endurance	IEC 60255-21-2 Level I
Bump Test		IEC 60255-21-2 Level I