

# IOT DCU

## Industrial IOT Data Concentrator Unit

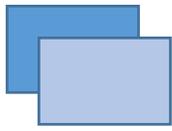


### Product Overview

The Harikrupa industrial IOT DCU is designed for embedded data acquisition and processing applications. It has got onboard IO's in terms of digital inputs, digital outputs and analog inputs. It supports Modbus TCP, Modbus RTU, DLMS etc. protocols for data concentrator applications. It has support for 4G fall back to 2G cellular communication capabilities. It can securely connect to Central Cloud SCADA Software Platform (CERTIN certified) over the cellular networks using TLS v1.2.

### Features

- 4 channel 24 BIT Resolution 0.1%FSR Accuracy Analog Input Card.
- Up to 2 serial communication port for data acquisition.
- Isolated Serial Communication with built in surge protection (optional).
- Built-in Class 0.2S accuracy energy meter with LCD display.
- Protocol support for data acquisition from externally connected devices: Modbus RTU, Modbus TCP, and DLMS.
- Secure connection to Central Cloud SCADA Software Platform on cellular or Wi-Fi using TLS v1.2 protocol.
- Built-in 4G fallback to 2G support. Dual Sim: auto-changeover support.
- Built-in SOE capabilities with storage for 100 events.
- Built-in Wi-Fi and embedded webserver.
- Industrial temperature range.
- SD Card support.



# IOT DCU

## Industrial IOT Data Concentrator Unit

### Technical Specification

#### Product

Model	IoT DCU/13226260119460
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#### Power Supply

Operating Voltage	80 – 300V AC
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Isolation	4000V AC
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Reverse Polarity Protection	Yes
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#### Communication

Serial Port	RS485/RS232
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Protocol	MODBUS RTU / DLMS (Serial)
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Isolation	5000 Vrms Optical
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Baud Rate	2400 to 115200 bps
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Surge	4kV
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ESD	4kV
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#### Analog Input

ADC	24-Bit Sigma Delta
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Channels	4
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Accuracy @ 25 deg C	0.1% FSR
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Voltage Range	0-10 VDC
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Current Range	0-20 mA
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Maximum Input Current	30 mA
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Resistor for 4-20 mA	500 Ohms
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#### Digital Output

Channels	4, open collector (50 mA max load)
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Power Dissipation	Channel: 1W max
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#### Digital Inputs

Input Type	Dry Contact On: Short to Ground Off: Open
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Channels	16
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Isolation	2500Vrms
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#### Cellular Communication

Cellular Communication	4G Fall back to 2G Network
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	4G Technology; LTE CAT1
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	2G Technology; EDGE
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Frequency Band	GSM 900/1800 MHz
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	LTE-TDD B34/B38/B39/B40/B41
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	LTE-FDD B1/B3/B5/B7/B8/B20/B28/B 31/B72
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	Supports GPRS multi-slot class 12, Coding scheme: CS 1–4: PBCCH
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GNSS	GPS/GLONASS/Galileo
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SIM Card Slots	3V, 2 x Micro Sim, Push Fit Type
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	Dual SIM card with Auto Change Over Facility
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SMS	Text and PDU mode, Point to point MO and MT, SMS cell broadcast
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#### Industry Protocols

Protocols	Modbus RTU/TCP, DLMS
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#### Others features

Enclosure & Dimension	Polycarbonate Approx. 130mmx184mmx90 mm (LXBXH)
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Mounting	Din Rail
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Weight	0.840kg
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#### EMC Certificate Compliance

ESD: IEC61000-4-2	Level-2
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EFT: IEC61000-4-4	Level-3
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Surge: IEC61000-4-5	Level-4
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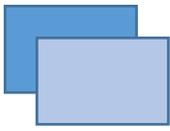
CS: IEC61000-4-6	Level-3
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PFMF: IEC61000-4-8	Level-3
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Voltage dips:	IEC61000-4-11
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#### EMI Certifications Compliance

CISPR 32 Class A	
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# IOT DCU

## Industrial IOT Data Concentrator Unit

### Environmental Certifications Compliance

Dry Heat	IEC60068-2-2
Damped Heat	IEC 60068-2-78

### Environmental Ratings

Operating Temp	0 to 75 deg C
Storage Temp	0 to 85 deg C

### Cable & Accessories

Power Cable of 1 Meter length through PVC Gland  
Antenna with Co-axial cable with 2 Meter Length

### Antenna

Built In RP-SMA Connector  
  
External Antenna with 7dbi Gain & Suitable Mounting Arrangement

### Sealing

Cover & Body Sealing  
  
SIM Card Holder Sealing

### Notification

Configurable Event Push Notifications with Occurrence and Restoration Date & Time

### RTC

RTC Backup	Up to 10 years battery backup
Time Synchronization	Automatic synchronization via GSM network time and server time

### Security

LAN Security	WPA2 with AES-128 encryption
Cellular Security	TLS V1.2 with AES-256 encryption
User Authorization	4-Level Access Control: Security Admin, System Admin, Operator, Viewer

### Storage

FRAM & EPROM	Embedded SCADA Alarms/Event Processing
FLASH	Event Storage
SD Card	Periodic Data Storage

### Communication Mode

Push Data	Periodic
Push Data	Event based
Pull	Read (On-Demand)
Pull	Write (On-Demand)

History Data Backfill

### Health Parameter

Status with Periodic Recording & Notification of Health Parameters such as RSSI, SD Card, SIM Slot, SIM Change Over Count

### Operational Indicator

LED	Tx, Rx, Network, Power ON
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### WatchDog

Watchdog Auto-Restart Daily - Once

Built-In Soft Watchdog for Server Connectivity Failure

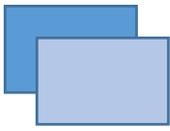
Built-In Hard Watchdog for Power Supply Failure

### LAN Connectivity

Wi-Fi compliant with IEEE 802.11 b/g/n standard (2.4 GHz)

### Configuration

Software based Configuration via PC/Laptop



# IOT DCU

## Industrial IOT Data Concentrator Unit

### Energy Meter Specifications

#### Input Voltage

Nominal Input Voltage (AC RMS)	110 VLL AC RMS
Measuring Range	20%.....120% of nominal value
Overload Withstand	2 x Nominal value for 1 second, repeated 10 times at 10 second intervals
Nominal Input Voltage burden	<0.03VA approx. per phase

#### Input Current

Nominal Input Current	1-2 A or 5-10 A
Measuring Range	1%.....120% of nominal value
Overload Withstand	20 x Nominal value for 1 second, repeated 5 times at 5

#### Auxiliary Supply

Auxiliary Supply Range	80 – 300V AC
Auxiliary Supply burden	< 5 VA
Auxiliary Supply Frequency	50 with $\pm 5\%$

#### Operating Measuring Range

Current	1%.....120% of nominal value
Starting Current	0,1% nominal
Voltage	20%.....120% of nominal value
Power Factor	-1 to 1
Frequency	50 +/- 5%

#### Display Specification

LCD Display	11 Digits Backlit LCD Display
LED Indicators	Kwh Pulse & KVARh Pulse

#### Accuracy

Active Energy	Class 0.2S as per IS16497
Reactive Energy	Class 0.2S as per IS16497
IEC 62053-22	Standard-Class 0.2S