

## DIN Rail Kilowatt Hour Energy Meters



# Single Phase DIN Rail Kilowatt Hour Energy Meters



## DRK-1PPO-240

### Single Phase 230V - 15A Direct Connected, Pulse Output

This innovative two DIN module kilowatt hour energy meter measures the real consumption of active energy to Class 2 accuracy, with a resolution of 0.1 kW.h displayed via a non-zeroing mechanical counter on the front panel. The module is operated via an internal shunt, and the pulsed output is optically isolated from the power supply and load. This device is ideally suited for environments with overvoltage category III and pollution level 2 in accordance with IEC EN 61010-1.

### Specification

|                              |  |
|------------------------------|--|
| Active Energy Accuracy       | Class 2  |
| Input Frequency              | 45 – 65Hz  |
| Nominal Input Voltage        | 230V   |
| Input Voltage Tolerance      | -15% to +10% of nominal  |
| Nominal Input Voltage Burden | 4 VA   |
| Input Current                | <15A   |
| Start Up Current             | 50mA   |
| Max Continuous Input Current | 22.5A  |
| Nominal Input Current Burden | 2 VA   |
| Current Measurement          | Internal shunt   |
| System CT Ratios             | Direct connected up to 15A   |
| Pulsed Output                | Opto isolated  |
| Pulse Duration               | 75 milliseconds  |
| Pulsed Frequency             | 1 per kW.h   |
| Counter                      | 5 digit + 1 decimal point mechanical counter                               |
| Reading Resolution           | 0.1 kW.h   |
| LED Indicator Display        | Green - power supply<br>Red – active power consumption @ 1 beat per 1 kW.h |
| Enclosure Material           | Class V-0 in accordance with UL94  |
| Compliant With               | IEC EN 61010-1CAT III, IEC EN 61036, EMC and LVD                           |
| Operating Temperature        | -10°C to +45°C   |
| Storage Temperature          | -25°C to +70°C   |
| Relative Humidity            | 0 .. 95% non condensing  |
| Dimensions                   | 2 x DIN modules wide x 87mm high   |
| IP Protection                | IP51 at front, IP20 at rear  |

### Features

- Class 2 accuracy
- Pulsed output
- Direct connected up to 15A
- Non-zeroing 5 digit + 10<sup>th</sup> mechanical counter
- Static meter with direct start-up 22.5A max
- Active energy consumption indication
- 2 DIN module format

### Benefits

- Replaces rotating disc meter
- Energy efficiency and awareness
- High accuracy
- Systems balanced and safe
- No maintenance

### Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control
- Secondary Metering

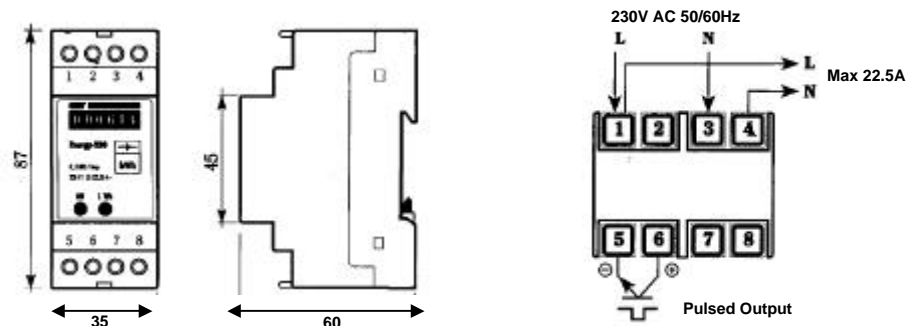
### Compliant With

- IEC EN 61010-1 CAT III
- IEC EN 61036
- EMC and LVD

### Ordering Codes

| Description  | Catalogue. No. |
|--|----------------|
| Single phase 230V – 15A Direct Connected, Pulse output | DRK-1PPO-240   |

### Dimensions and Connections



# Single Phase DIN Rail Kilowatt Hour Energy Meters



## DRK-1PCT-240

### Single Phase 230V - CT Connected 5A, Pulse Output

This innovative four DIN module kilowatt hour energy meter measures the real consumption of active energy to Class 2 accuracy, with a resolution of 1 kW.h displayed via a mechanical counter on the front panel. The module is operated via an internal current transformer, and the pulsed output is optically isolated from the power supply and load.

## Features

- Class 2 accuracy
- Pulsed output
- Selectable CT ratios
- Dip switch settings
- 7 digit mechanical counter
- Insulated CT connections (or isolated?)
- Active energy consumption indication
- 4 DIN module format

## Benefits

- Replaces rotating disc meter
- Energy efficiency and awareness
- High accuracy
- Systems balanced and safe
- No maintenance

## Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control
- Secondary Metering

## Compliant With

- IEC EN 61010-1
- IEC EN 61036
- EMC and LVD

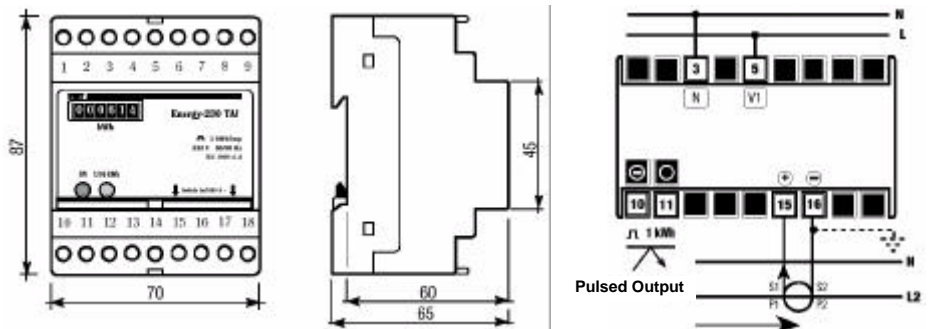
## Specification

|                              |  |
|------------------------------|--|
| Active Energy Accuracy       | Class 2  |
| Input Frequency              | 50 – 60Hz  |
| Nominal Input Voltage        | 230V AC  |
| Input Voltage Tolerance      | -15% to +10% of nominal  |
| Nominal Input Voltage Burden | <2.5 VA  |
| Nominal Input Current        | 5A   |
| Start Up Current             | 15mA   |
| Max Continuous Input Current | 6A   |
| Nominal Input Current Burden | <2.5 VA  |
| Current Measurement          | Internal current transformer   |
| System CT Ratios             | 5, 10, 25, 50, 75, 100, 125, 150, 200, 250, 300, 400, 500, 600, 800, 1000A |
| Pulsed Output                | Opto isolated  |
| Pulse Duration               | <100 milliseconds  |
| Pulsed Frequency             | 1 per kW.h   |
| Pulse Capacity               | 3 – 30V DC, <20mA  |
| Counter                      | 7 digit mechanical counter   |
| Reading Resolution           | 1 kW.h   |
| LED Indicator Display        | Green: power supply<br>Red : active power consumption @ 1 beat per 1 kW.h  |
| Enclosure Material           | Class V-0 in accordance with UL94  |
| Compliant With               | IEC EN 61010-1, IEC EN 61036, EMC and LVD                                  |
| Operating Temperature        | -10°C to +45°C   |
| Storage Temperature          | -25°C to +70°C   |
| Relative Humidity            | 0 .. 95% non condensing  |
| Dimensions                   | 4 x DIN modules wide x 87mm high   |
| IP Protection                | IP20   |

## Ordering Codes

| Description                                       | Catalogue. No. |
|---|----------------|
| Single phase 230V - CT Connected 5A, Pulse output | DRK-1PCT-240   |

## Dimensions and Connections



# Three Phase DIN Rail Kilowatt Hour Energy Meters



## DRK-3PCT-415

### Three Phase 400V CT Connected 5A, Pulse Output, 3 or 4 Wire System

This innovative four DIN module kilowatt hour energy meter measures the real consumption of active energy to Class 2 accuracy, with a resolution of 1 kW.h displayed via a mechanical counter on the front panel. The module is operated via an internal current transformer, and the pulsed output is optically isolated from the power supply and load.

## Features

- Class 2 accuracy
- Pulsed output
- Selectable CT ratios
- Dip switch settings
- 7 digit mechanical counter
- Insulated CT connections (or isolated?)
- Active energy consumption indication
- 4 DIN module format
- 3 or 4 wire systems

## Benefits

- Replaces rotating disc meter
- Energy efficiency and awareness
- High accuracy
- Systems balanced and safe
- No maintenance

## Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control
- Secondary Metering

## Compliant With

- IEC EN 61010-1
- IEC EN 61036
- EMC and LVD

## Specification

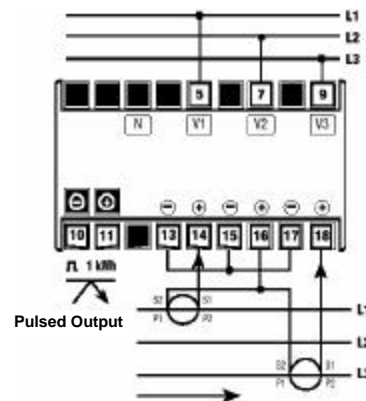
|                              |  |
|------------------------------|--|
| Active Energy Accuracy       | Class 2  |
| Input Frequency              | 50 – 60Hz  |
| Nominal Input Voltage        | 400V   |
| Input Voltage Tolerance      | -15% to +10% of nominal  |
| Nominal Input Voltage Burden | <2.5 VA  |
| Nominal Input Current        | 5A   |
| Start Up Current             | 15mA   |
| Max Continuous Input Current | 6A   |
| Nominal Input Current Burden | <2.5 VA  |
| Current Measurement          | Internal current transformer   |
| System CT Ratios             | 5, 10, 25, 50, 75, 100, 125, 150, 200, 250, 300, 400, 500, 600, 800, 1000A                                     |
| Pulsed Output                | Opto isolated  |
| Pulse Duration               | <100 milliseconds  |
| Pulsed Frequency             | 1 per kW.h   |
| Pulse Capacity               | 3 – 30V DC, <20mA  |
| Counter                      | 7 digit mechanical counter   |
| Reading Resolution           | 1 kW.h   |
| LED Indicator Display        | Green: power supply<br>Red: active power consumption @ 1 beat per 1 kW.h<br>Yellow: warning of ¼ kW.h negative |
| Enclosure Material           | Class V-0 in accordance with UL94  |
| Compliant With               | IEC EN 61010-1, IEC EN 61036, EMC and LVD  |
| Operating Temperature        | -10°C to +45°C   |
| Storage Temperature          | -25°C to +70°C   |
| Relative Humidity            | 0 .. 95% non condensing  |
| Dimensions                   | 4 x DIN modules wide x 87mm high   |
| IP Protection                | IP20   |

## Ordering Codes

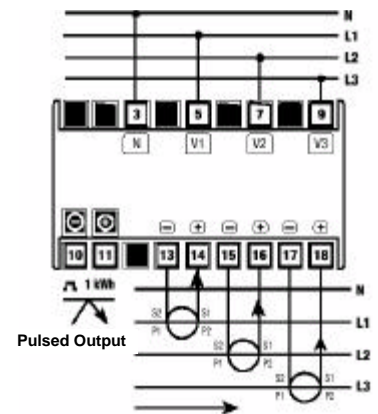
| Description   | Catalogue. No. |
|---|----------------|
| Three Phase 5A CT Connected, Pulse output, 3 or 4 Wire, Internal CT | DRK-3PCT-415   |

## Connections

### 3 Wire Systems



### 4 Wire Systems



## Dimensions – as per DRK-1PCT

# Three Phase DIN Rail Combined Energy Meters



## DRV-3PCT-415

### Three Phase 400V CT Connected 5A, Pulse Output, 3 or 4 Wire System

This innovative four DIN module combined energy meter counts the real consumption of active and reactive energy with a resolution of 1 kW.h displayed via a mechanical counter on the front panel. The module utilises an integral shunt and offers the benefit of measuring active energy to Class 2 and reactive energy to Class 3. The pulsed outputs are optically isolated from the power supply and load.

## Features

- Active energy Class 2 accuracy
- Reactive energy Class 3 accuracy
- Two pulsed outputs
- Selectable CT ratios
- Dip switch settings
- 7 digit mechanical counters
- Insulated CT connections (or isolated?)
- Active and reactive energy consumption indication
- 4 DIN module format
- 3 or 4 wire systems

## Benefits

- Replaces rotating disc meter
- Energy efficiency and awareness
- High accuracy
- Systems balanced and safe
- No maintenance

## Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control
- Secondary Metering

## Compliant With

- IEC EN 61010-1
- IEC EN 61036
- EMC and LVD

## Specification

|                              |  |                          |
|------------------------------|--|--------------------------|
| Accuracy                     | Active Energy: Class 2   | Reactive Energy :Class 3 |
| Input Frequency              | 50 – 60Hz  |                          |
| Nominal Input Voltage        | 400V   |                          |
| Input Voltage Tolerance      | -15% to +10% of nominal  |                          |
| Nominal Input Voltage Burden | <2.5 VA  |                          |
| Nominal Input Current        | 5A   |                          |
| Start Up Current             | 15mA   |                          |
| Max Continuous Input Current | 6A   |                          |
| Nominal Input Current Burden | <2.5 VA  |                          |
| Current Measurement          | Internal shunt   |                          |
| System CT Ratios             | 5, 10, 25, 50, 75,100, 125, 150, 200, 250, 300, 400, 500, 600, 800, 1000A                                      |                          |
| Pulsed Output                | 2 x Opto isolated  |                          |
| Pulse Duration               | <100 milliseconds  |                          |
| Pulsed Frequency             | 1 per kW.h   |                          |
| Pulse Capacity               | 3 – 30V DC, <20mA  |                          |
| Counter                      | 2 x 7 digit mechanical counter   |                          |
| Reading Resolution           | 1 kW.h   |                          |
| LED Indicator Display        | Green: power supply<br>Red: active power consumption @ 1 beat per 1 kW.h<br>Yellow: warning of ¼ kW.h negative |                          |
| Enclosure Material           | Class V-0 in accordance with UL94  |                          |
| Compliant With               | IEC EN 61010-1, IEC EN 61036, EMC and LVD  |                          |
| Operating Temperature        | -10°C to +45°C   |                          |
| Storage Temperature          | -25°C to +70°C   |                          |
| Relative Humidity            | 0 .. 95% non condensing  |                          |
| Dimensions                   | 4 x DIN modules wide x 87mm high   |                          |
| IP Protection                | IP20   |                          |

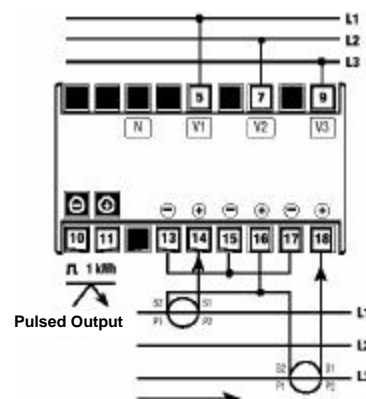
NB: Current transformer secondary terminals must not be earthed. Dedicated CTs are required.

## Ordering Codes

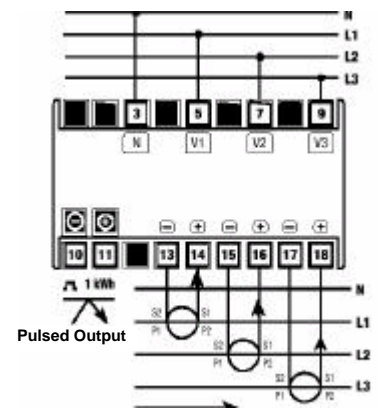
| Description  | Catalogue. No. |
|--|----------------|
| Three Phase 5A CT Connected, Pulse output, 3 or 4 Wire, Internal Shunt | DRV-3PCT-415   |

## Connections

### 3 Wire Systems



### 4 Wire Systems



## Dimensions – as per DRK-3PCT

# Concentrator Module for Kilowatt Hour Energy Meters



## DRK-485

### 8 Input Remote kW.h Energy Consumption Monitoring Device

The DRK-485 concentrator module provides remote monitoring of energy consumption from up to 8 Crompton kW.h energy meters located within 25 metres. Communication to the device is achieved with Modbus connection to a COM port on a PC via an RS485 serial line. Up to 32 concentrator modules can be connected to the RS485 line without the need for signal amplifiers. Up to 247 modules, in groups of 32, can be connected when separated by signal amplifiers.

## Features

- Collects up to 8 pulsed inputs
- Remote monitoring device
- Modbus protocol
- 8 dip switch settings
- Dual charge rate handling
- Data transit and power indicators
- 4 DIN module format

## Benefits

- Pulse collection
- Energy efficiency and awareness
- Systems balanced and safe
- No maintenance

## Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control
- Secondary Metering

## Compliant With

- IEC EN 61010-1
- IEC EN 61036
- EMC and LVD

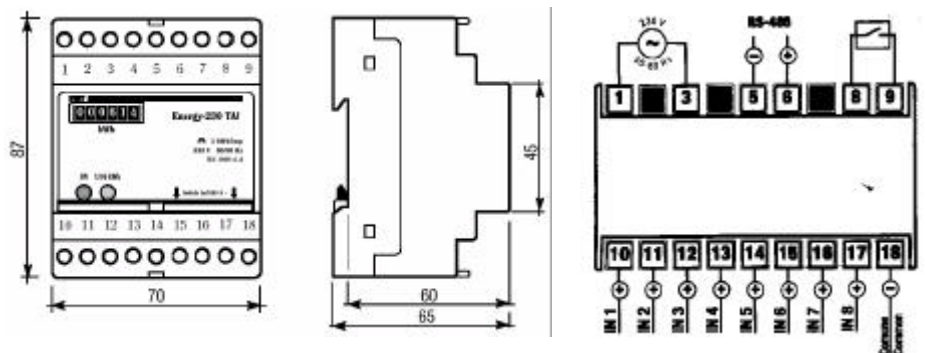
## Specification

|                              |  |
|------------------------------|--|
| Input Frequency              | 50 – 60Hz  |
| Nominal Input Voltage        | 230V AC  |
| Input Voltage Tolerance      | -15% to +10% of nominal                              |
| Nominal Input Voltage Burden | <2.5 VA  |
| Digital Communications       | RS485 interface Modbus protocol                      |
| Band Handling                | Dual charge  |
| Baud Rate                    | 9600 bits per second                                 |
| Transmission Mode            | ASCII  |
| Error Detection Method       | Longitudinal Redundancy Check                        |
| Max Number of Contactors     | Up to 8 input signals (single phase and three phase) |
| Pulse Input Duration         | <100 milliseconds                                    |
| LED Indicator Display        | Green: power supply<br>Red: data transit via RS485   |
| Enclosure Material           | Class V-0 in accordance with UL94                    |
| Compliant With               | IEC EN 61010-1, IEC EN 61036, EMC and LVD            |
| Operating Temperature        | -10°C to +45°C                                       |
| Storage Temperature          | -25°C to +70°C                                       |
| Relative Humidity            | 0 .. 95% non condensing                              |
| Dimensions                   | 4 x DIN modules wide x 87mm high                     |
| IP Protection                | IP41 to front, IP20 to rear                          |

## Ordering Codes

| Description                                      | Catalogue. No. |
|--|----------------|
| Remote kW.h Energy Consumption Monitoring Device | DRK-485        |

## Dimensions and Connections



---

All of the above information, including drawings, illustrations and graphic designs, reflects our present understanding and is to the best of our knowledge and belief correct and reliable. Users, however, should independently evaluate the suitability of each product for the desired application. Under no circumstances does this constitute an assurance of any particular quality or performance. Such an assurance is only provided in the context of our product specifications or explicit contractual arrangements. Our liability for these products is set forth in our standard terms and conditions of sale. ALR, AMP, AXICOM, B&H, BOWTHORPE EMP, CROMPTON INSTRUMENTS, DORMAN SMITH, DULMISON, GURO, HELLSTERN, LA PRAIRIE, MORLYNN, RAYCHEM, and SIMEL are trademarks

---



**Energy Division – a pioneer in the development of economical solutions for the electrical power industry. Our product range includes: Cable accessories, connectors & fittings, electrical equipment, instruments, lighting, insulators & insulation enhancement and surge arresters.**

For more information and your country contact person, please visit us at:  
<http://energy.tycoelectronics.com>

---

Tyco Electronics UK Limited, Crompton Instruments  
Freebournes Road, Witham, Essex, CM8 3AH, UK  
Phone: ++44 1376 509 509 Fax: ++44 1376 509 511