

**inepro**<sup>®</sup>



## Connection manual PRO380

**3 phase Smart meter**

Product version: 1.18 / 1.19

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**Introduction:**



## **The Inepro metering, 3phase smart PRO series are MID certified for connection,**

- 3phase 4 wire
- 3 phase 3wire open delta (Aron)
- 3 phase 3wire Delta
- single phase

Separate from tension and frequency there are differences in the way electricity is distributed. Basically the distinction is a split 1phase network common in north America, a 3phase network as in Europe where the 3phase network is subdivided in a star connection ( 3phase + neutral) and a triangle connection (only 3 phase without neutral). The triangle connection is subdivided in an open delta (Aron) and delta.

### **3phase 4wire**

Most common all over Europe

### **3phase 3wire open delta (Aron) or 2 wattmeter method**

Is considered to be old fashioned and In Europe mainly used in Flanders Belgium, Albania and Norway. In Holland it can exist in parts of Delft and parts of Amsterdam. In Holland and Belgium it is described as 3 x 220v connection. In Norway this way of distribution is called IT-Nett.

In a 3phase open delta network the neutral is missing in the transformer house. The sockets in house are connected with two of the three phases and the tension between phases is 220v to 230v. The tension between phase and earth is 127v to 133v.

In this connection one has to mount the Aron bridge (delivered in the box) between 13 and 17 to get the meter working for this network. See diagram.

### **3phase 3 wire Delta**

All other networks with 3phase and 3wire one does not connect the neutral. See diagram.

### **1phase 2wire**

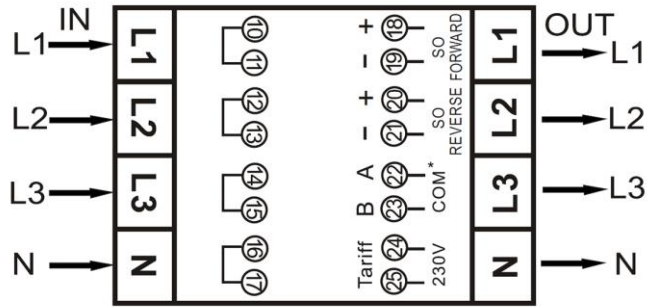
When a single phase 45A is not sufficient one can use the PRO380 for single phase connection and have up to 100A.

### **Note:**

On all models you see a small grey bridge between 10+11 – 12+13 – 14+15 – 16+17. This belongs to the internal connections and does not be removed only at the CT version where you connect the phase to 10, 12 and 14.

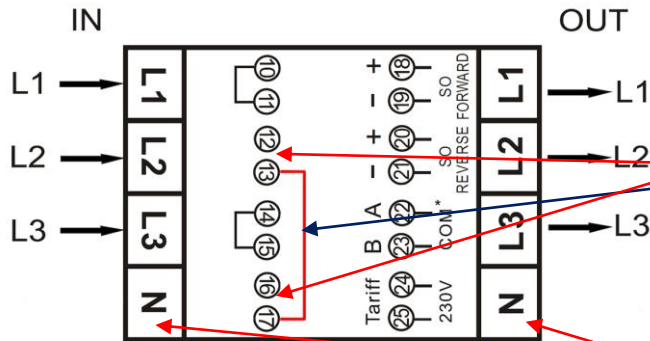
# Connection diagrams PRO380 Direct connect

## PRO380 Direct connect - 3P 4W



L1 (in) Phase 1 input – L1 (out) Phase 1 output  
 L2 (in) Phase 2 input – L2 (out) Phase 2 output  
 L3 (in) Phase 3 input – L3 (out) Phase 3 output  
 N (in) Neutral input – L1 (out) Neutral output

## PRO380 Direct Connect - 3P 3W Open Delta (Aron)



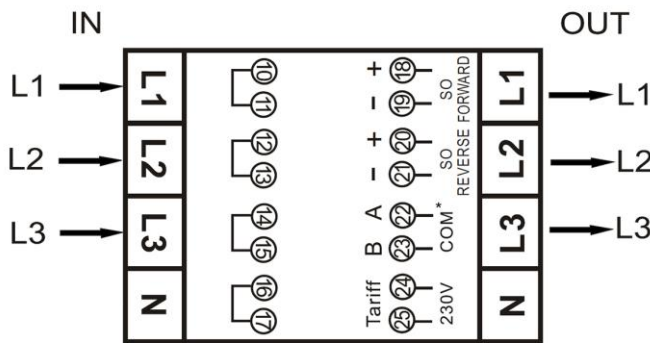
L1 (in) Phase 1 input – L1 (out) Phase 1 output  
 L2 (in) Phase 2 input – L2 (out) Phase 2 output  
 L3 (in) Phase 3 input – L3 (out) Phase 3 output

**Remove bridge 12+13 and 16+17**  
**Mount Aron Bridge on 13 and 17**

Between phase 1 and 3 = 230v  
 Between phase 1 and 2 = 127 to 133 volt  
 Between phase 2 and 3 = 127 to 133 volt

**Do not connect Neutral**  
 Alternate connection = L2 Phase 2 on N in and out

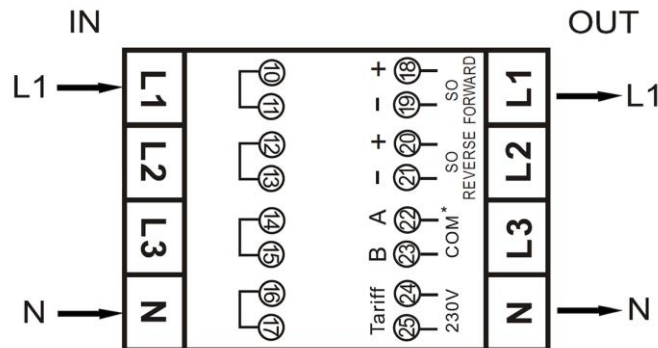
## PRO380 Direct Connect - 3P 3W Delta



L1 (in) Phase 1 input – L1 (out) Phase 1 output  
 L2 (in) Phase 2 input – L2 (out) Phase 2 output  
 L3 (in) Phase 3 input – L3 (out) Phase 3 output

**Do not connect Neutral**

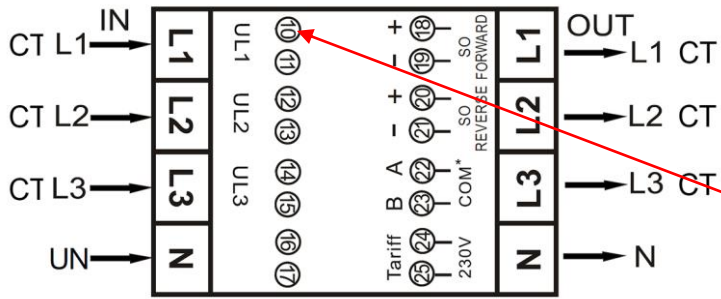
## PRO380 Direct Connect - 1P 2W – Single Phase



L1 (in) Phase 1 input – L1 (out) Phase 1 output  
 N (in) Neutral input – L1 (out) Neutral output

# Connection diagrams PRO380 Current Transformer

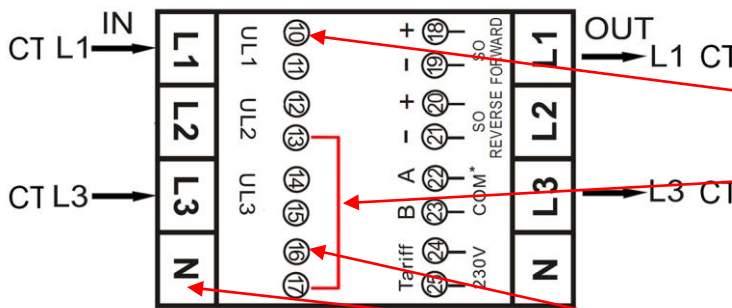
## PRO380 CT - 3P 4W



CT 1 on L1  
 CT 2 on L2  
 CT 3 on L3

N (in) Neutral input – N (out) Neutral output  
 Phase 1 on 10 - UL1  
 Phase 2 on 12 - UL2  
 Phase 3 on 14 - UL3

## PRO380 CT- 3P 3W Open Delta (Aron)



CT 1 on L1  
 CT 2 (not needed)  
 CT 3 on L3

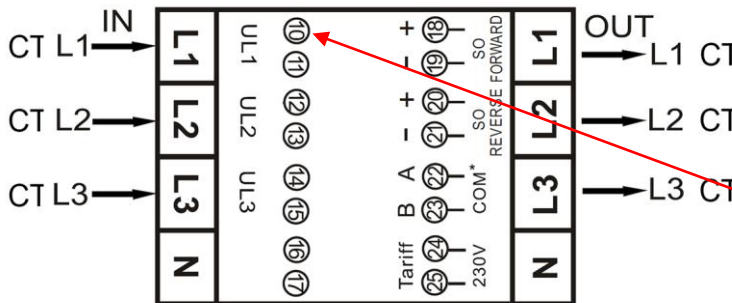
Phase 1 on 10 - UL1  
 Phase 2 on 12 - UL2  
 Phase 3 on 14 - UL3

**Mount Aron Bridge on 13 and 17**

Between phase 1 and 3 = 230v  
 Between phase 1 and 2 = 127 to 133 volt  
 Between phase 2 and 3 = 127 to 133 volt

Alternate connection = Phase 2 on N or (16)

## PRO380 CT - 3P 3W Delta

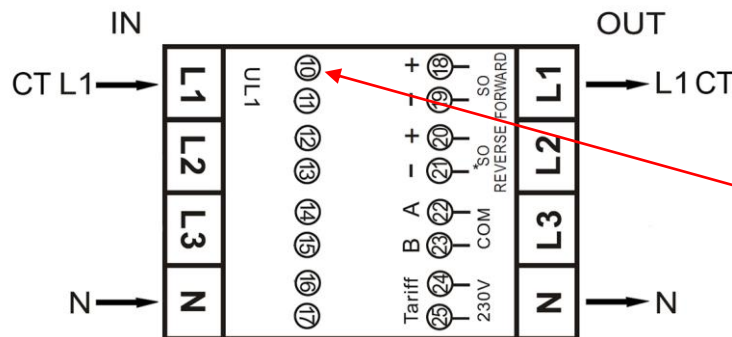


CT 1 on L1  
 CT 2 on L2  
 CT 3 on L3

Phase 1 on 10 - UL1  
 Phase 2 on 12 - UL2  
 Phase 3 on 14 - UL3

**Do not connect Neutral**

## PRO380 CT - 1P 2W – Single Phase



CT 1 on L1

Phase 1 on 10 - UL1

N (in) Neutral input – N (out) Neutral output