

- ▶ True power measurement in 1- or 3-phase mains
- ▶ Measurement ranges from 600W to 4.8kW
- ▶ Range adjustment by Central Unit
- ▶ Reinforced insulation of the measuring circuit
- ▶ Measured value transmitting via standard bus
- ▶ Modular monitoring system
- ▶ Width 22.5mm
- ▶ Industrial design



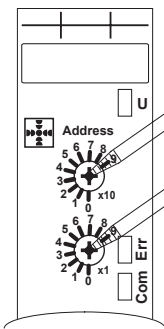
Technical data

1. Functions

WatchDog pro module for true power measurement in 1- or 3-phase mains.

2. Address adjustment

Address range: 1-99
Deactivation (Off): address 0



Potentiometer 1:
To adjust the **DECADES**

Potentiometer 2:
To adjust the **UNITS**

e.g.: the address **43** will be adjusted as follows:

Potentiometer 1 on position **4**
Potentiometer 2 on position **3**

3. Indicators

Green LED U ON: module is supplied via local interface
Yellow LED Com ON / flashes: data exchange over standard bus is in progress
Red LED Err ON: indication of failure

4. Mechanical design

Self-extinguishing plastic housing, IP rating IP20
Mounted on DIN-rail TS 35 according to EN 50022
Mounting position: any
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
Tightening torque: max. 1Nm
Terminal capacity:
1 x 0.5 to 2.5mm² with/without multicore cable end
1 x 4mm² without multicore cable end
2 x 0.5 to 1.5mm² with/without multicore cable end
2 x 2.5mm² flexible without multicore cable end

5. Supply

Rated voltage: 24V DC from local interface
Tolerance: -17.5% to +16.5%
Rated consumption: 1.2W
Rated current: 42mA
Max. supply current: 50mA
Ripple and noise: < 150mV_{PP}
Duty cycle: 100%
Start-up time: 2.2s typ.
Drop-out voltage: > 60% of supply voltage

6. Businterface

Standard bus:
Data link: RS485; yellow LED Com ON
Interface parameter: 115.2kBd, 9 bits data

Number of extension modules:

Local interface: 24* (width 22.5mm)

* dependent on the max. permissible current through local interface of the Central Unit (CU)
(additional extension is possible by the remote bus!)

7. Isolation

Fusing: max. 20A
Overvoltage category: III (in accordance with IEC 60664-1)
Rated surge voltage: 6kV between voltage measuring circuit and local interface
4kV between current measuring circuit and local interface

8. Measuring circuit

Measured values: P, I₁
Measuring range P_N: 0.6, 1.2, 2.4 and 4.8kW selectable
Wave form:
AC Sinus: 10 to 400Hz
Sinus weighted PWM: 10 to 100Hz
Measuring-input voltage: terminals L1-L2-L3
1-phase mains: 0 ... 230V AC
3-phase mains: 0 ... 415/240V AC
Overload capacity:
1-phase mains: 0 ... 300V AC
3-phase mains: 0 ... 500/289V AC
Input resistance: 2MΩ
Measuring-input current: terminals i-k
Measuring range 0.6 / 1.2kW: 0 ... 6A
Measuring range 2.4 / 4.8kW: 0 ... 12A
Overload capacity: 10A permanently
If I > 8A → distance between the devices must be > 5mm !
Input resistance: < 10mΩ

9. Accuracy

Base accuracy P: ± 2% of upper range value
Base accuracy I₁: unspecified!
Frequency response: ± 0.025% / Hz
Repetition accuracy: ± 2%
Voltage influence: -
Temperature influence: ≤ 0.2% / °C

10. Ambient conditions

Ambient temperature: -25 to +55°C (in accordance with IEC 68-1)
-25 to +40°C (in accordance with UL 508)
Storage temperature: -25 to +70°C
Transport temperature: -25 to +70°C
Relative humidity: 15% to 85%
(in accordance with IEC 60721-3-3 class 3K3)
Absolute humidity: 1g to 25g H₂O/m³
(in accordance with IEC 60721-3-3 class 3K3)
Pollution degree: 2 (in accordance with IEC 60664-1)
Vibration resistance: 10 to 55Hz 0.35mm
(in accordance with IEC 68-2-6)
Shock resistance: 15g 11ms (in accordance with IEC 68-2-27)

Operator accessibility of clamps and connectors

The table shows which terminals and connectors can be touched by the operator during normal operation.

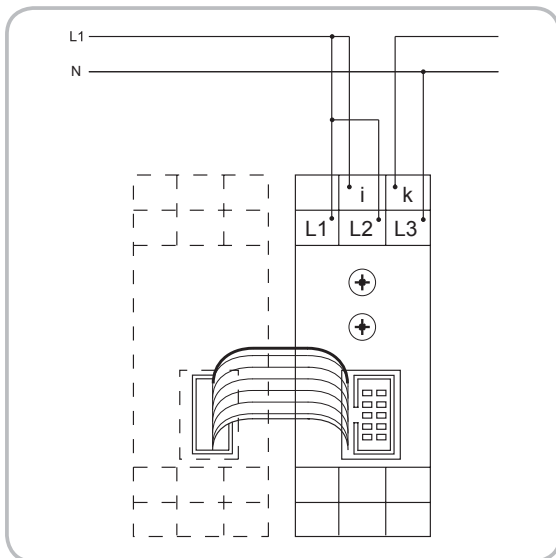
Nr.	Type	Terminal	Touchable
1	AI	Communication interface for local input-/output-extension device	YES
2	Ar	Communication interface for remote input-/output unit	YES
3	Be	Open communication interface, open to external devices as well	YES
4	Bi	Internal communication interface for peripheral modules	NO
5	C	Interface for digital and analog input signals	NO
6	D	Interface for digital and analog output signals	NO
7	E	Serial or parallel communication interface for data communication with external devices	YES
8	F	Terminal for line power supply	NO
9	H	Functional Earth terminal	YES
10	J	Input/output interface for power supply of sensors and actuators	NO
11	K	Interface for auxiliary supply output and auxiliary supply input	NO

True power measurement in 1- or 3-phase mains : G2BI1 400V12A - Definition of circuits:

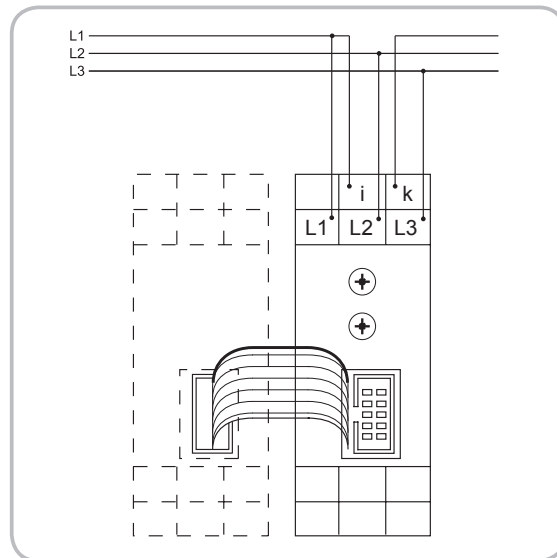
Name	Type	Nr.	Terminals related to the Circuit
Voltage inputs	C	5	L1, L2, L3
Current inputs	C	5	i, k
Local interface	AI	1	L1 Box header; L1 plug connector with ribbon cable

Connections

► G2BI1 400V12A in 1-phase mains

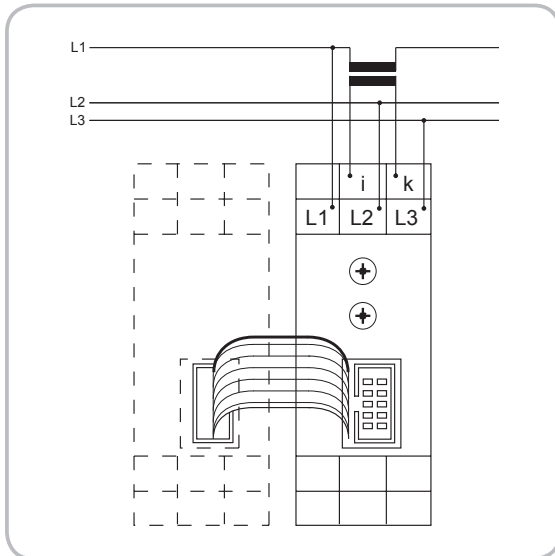


► G2BI1 400V12A in 3-phase mains without current transformer

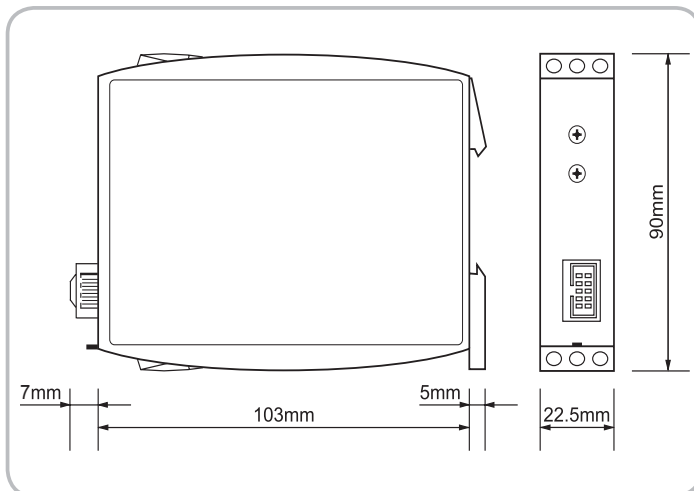


Connections

► G2BI1 400V12A in 3-phase mains with current transformer



Dimensions



Ordering information

Type	Address range	LEDs	Part Nr. (PQ 1)
G2BI1 400V12A	1 to 99	U, Err, Com	2500300