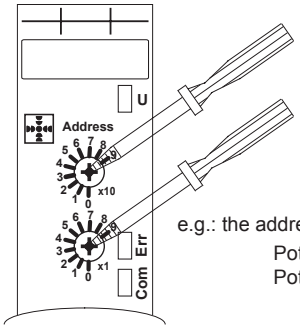
G2BI1 400V12A

- 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, I_1
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 I_1:	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 H_2O/m^3 (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.

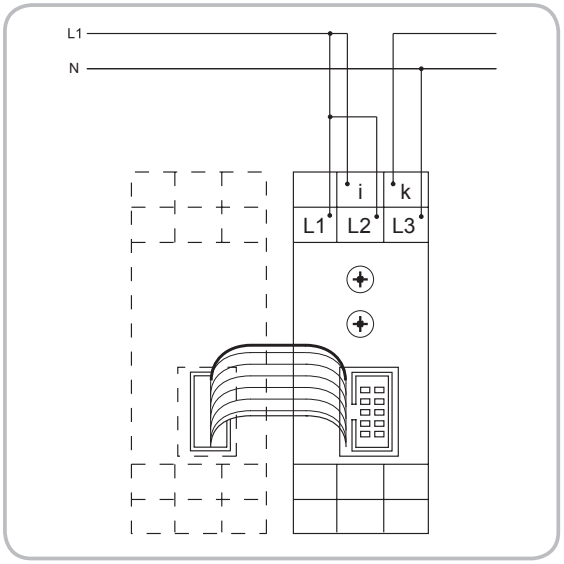
Nr.	Type	Terminal	Touchable
1	AI	Communication interface for local input-/output-extension device	YES
2	Ar	Communication interface for remote input-/output unit	YES
3	Be	Open communication interface, open to external devices as well	YES
4	Bi	Internal communication interface for peripheral modules	NO
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:

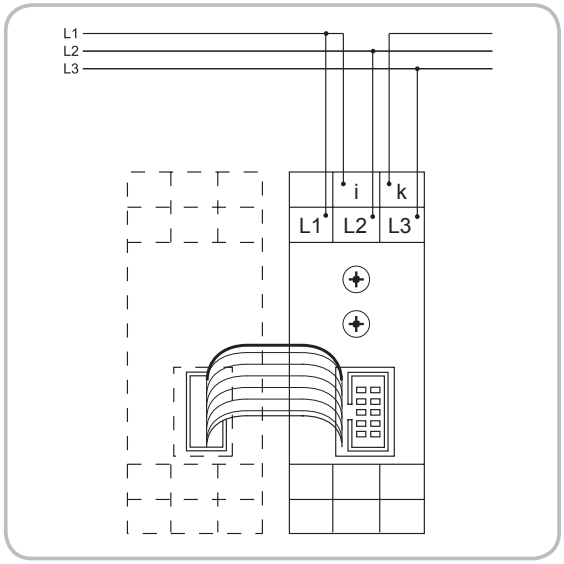
Name	Type	Nr.	Terminals related to the Circuit
Voltage inputs	C	5	L1, L2, L3
Current inputs	C	5	i, k
Local interface	AI	1	LI Box header; LI plug connector with ribbon cable

Connections

G2BI1 400V12A in 1-phase mains

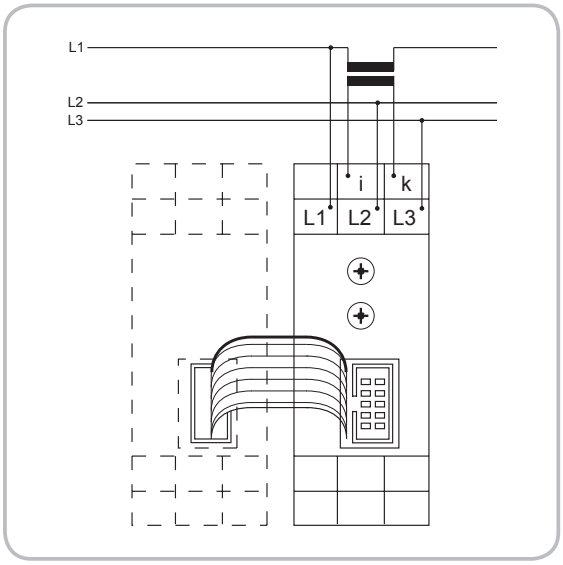


G2BI1 400V12A in 3-phase mains without current transformer

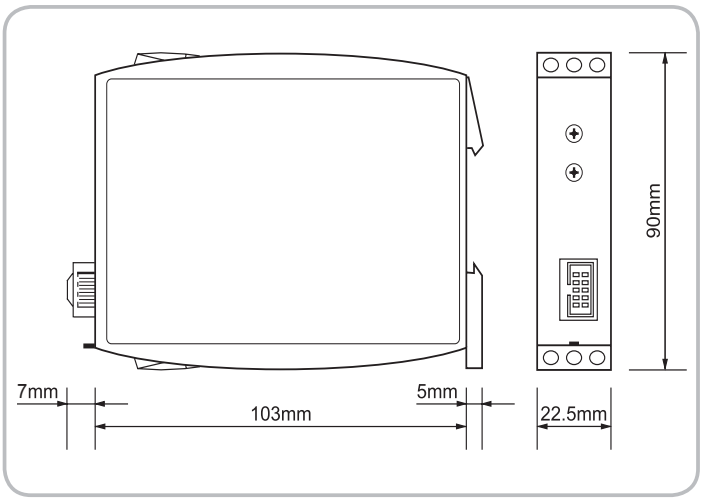


Connections

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