

- ▶ Voltage measurement in 1-phase mains
- ▶ Reinforced insulation of the measuring circuit
- ▶ Measured value transmitting via standard bus
- ▶ Modular monitoring system
- ▶ Measuring ranges 30V, 60V and 300V
- ▶ Width 22.5mm
- ▶ Industrial design



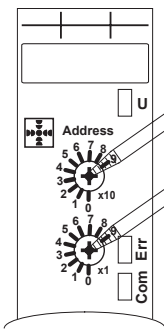
## Technical data

### 1. Functions

WatchDog pro modul for voltage measurement in 1-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 2.5mm<sup>2</sup> with/without multicore cable end  
1 x 4mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5mm<sup>2</sup> with/without multicore cable end  
2 x 2.5mm<sup>2</sup> flexible without multicore cable end

### 5. Supply

Rated voltage: 24V DC from local interface  
Tolerance: -17.5% to +16.5%  
Rated consumption: 1W  
Rated current: 36mA  
Max. supply current: 50mA  
Ripple and noise: < 150mV<sub>PP</sub>  
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 input circuit and local interface

### 8. Measuring circuit

Measured variable: DC or AC Sinus (16.6 to 400Hz)  
Measured value: U<sub>eff</sub>  
Measuring input:  
30V AC/DC terminals E - F1 (+)  
60V AC/DC terminals E - F2 (+)  
300V AC/DC terminals E - F3 (+)  
Overload capacity:  
30V AC/DC 110V<sub>eff</sub>  
60V AC/DC 150V<sub>eff</sub>  
300V AC/DC 440V<sub>eff</sub>  
Input resistance:  
30V AC/DC 47kΩ  
60V AC/DC 100kΩ  
300V AC/DC 470kΩ

### 9. Accuracy

Base accuracy: ± 5% of upper range value  
Frequency response: -10% to +5% (16.6 to 400Hz)  
Repetition accuracy: ≤ 2%  
Voltage influence: ≤ 0.5%  
Temperature influence: ≤ 0.1% / °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<sub>2</sub>O/m<sup>3</sup>  
(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.

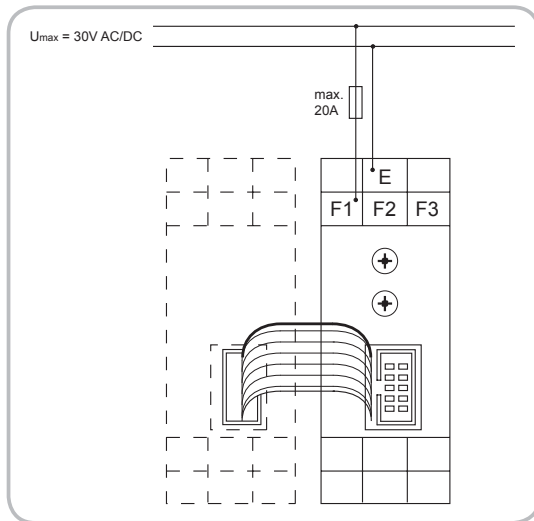
Nr.	Type	Terminal	Touchable
1	AI	Communication interface for local input-/output-extension device	YES
2	Ar	Communication interface for remote input-/output unit	YES
3	Be	Open communication interface, open to external devices as well	YES
4	Bi	Internal communication interface for peripheral modules	NO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

1-phase voltage measurement: G2UI1 300V - Definition of circuits:

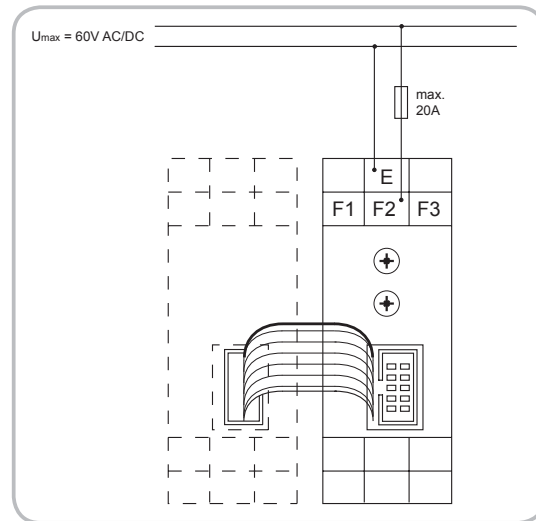
Name	Type	Nr.	Terminals related to the Circuit
Voltage inputs	C	5	E, F1, F2, F3
Local interface	AI	1	LI Box header; LI plug connector with ribbon cable

## Connections

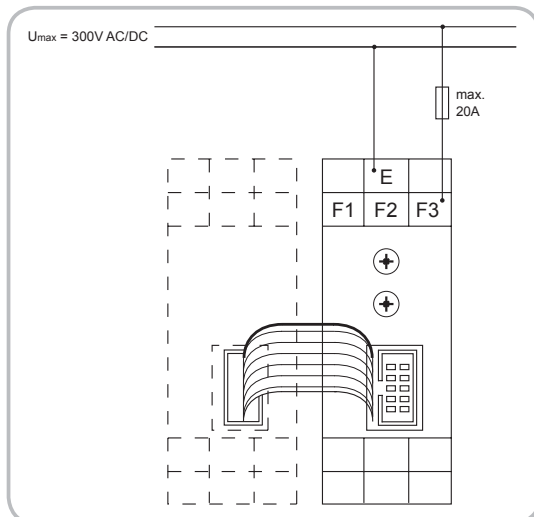
### Measured range 30V AC/DC



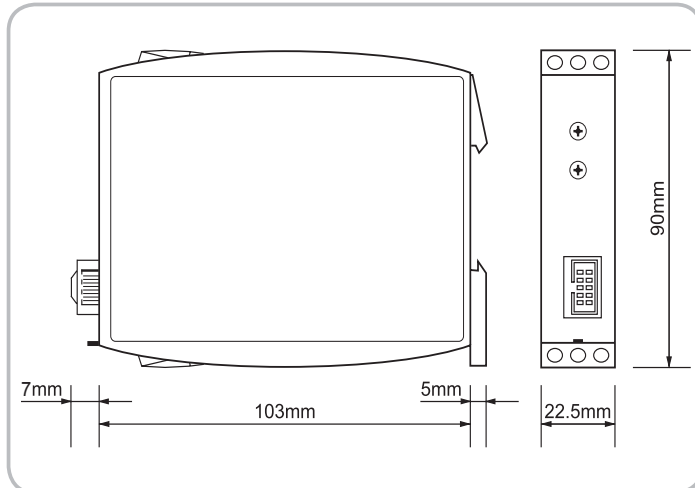
### Measured range 60V AC/DC



### Measured range 300V AC/DC



## Dimensions



## Ordering information

Type	Address range	LEDs	Part Nr. (PQ 1)
G2UI1 300V	1 to 99	U, Err, Com	2500051