



Features

Measurements

- All 3-phase AC measurements
- True RMS
- Replaces analogue meters
- Demand on each phase current

Accuracy

- U, I and F class 0.5
- Other values class 1.0

Installation

- Compact dimensions
- Simple wiring

Display

- 4 display rows
- 58 x 66 mm
- White backlight

Intelligent

- Suitable for all 3-phase network topologies
- Replaces transducers

Models

- MIB 7000: basic
- MIB 7020: basic + 2 digital outputs

Application

The MIB multi-instrument is a microprocessor-based measuring unit providing measurement of most electrical quantities on a 3-phase electric energy distribution network. The measurements are shown on the built-in display.

The product family includes two versions:

- MIB 7000 (basic)
- MIB 7020 (basic + 2 digital outputs)

True RMS values on all 3-phase network topologies are measured with/without neutral and with both balanced and unbalanced load.

A large number of standard analogue instruments can be replaced by the MIB in all electrical measuring applications. The MIB contains all necessary measuring circuits and presents all values on a display with white backlight. The display has 4 digits resolution for all measurements. The backlight on-time is selectable.

Operating the MIB is very easy. It is a flexible and logical measuring unit that enables the user to easily adapt the instrument to the individual application. Counter reset and change of settings can be password protected.

Measured and calculated values

Voltage:

True RMS – Each phase and line to line voltage.

Current:

Each phase, average and neutral.

Active power (P)

Active, total and Demand - power.

Reactive power (Q)

Reactive, total and Demand Reactive - power.

Apparent power (S)

Apparent and total apparent power.

Power factor

Power factor and total power factor.

Frequency

Actual frequency of L1.

Load nature

L/C/R.

Digital output (DO)

For alarm output or energy pulse output.

Min/Max

Min/max of voltage – max of Current and demand.

Energy Pulse output

Two ports of pulse output (assign to any energy and reactive energy).

THD (up to 15. th. harmonics)

Voltage THD of each phase and total, Current THD of each phase and total.

Demand

Demand of each phase current, Power and Reactive power.

Energy

Import and Export of energy, Inductive and capacitive of reactive Energy.

Alarm

Alarm can be related to any metering parameters.

Running hour

Meters the duration of the operation.

Unbalance factor

Voltage and Current.

Connection

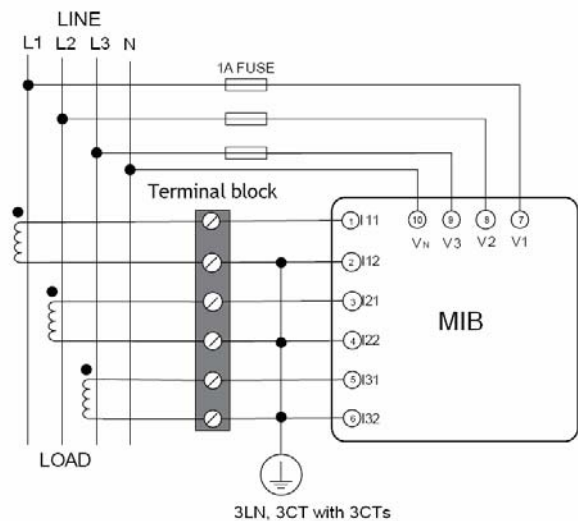
The MIB can be used in almost all 3-phase network topologies with/without neutral and with both balanced and unbalanced load. The voltage and current input wiring modes are set separately in the parameter setting process. The voltage wiring mode can be:

| | |
|-----|----------------------------------|
| 3LN | 3-phase 4-line Y |
| 2LN | 3-phase 4-line Y with 2 VT |
| 1LN | 1-phase 2-line |
| 2LL | 3-phase 3-line open delta |
| 3LL | 3-phase 3-line direct connection |

The current input wiring mode can be:

| | |
|-----|----------------------------|
| 3CT | Unbalance system |
| 2CT | Unbalance system without N |
| 1CT | Balance system |

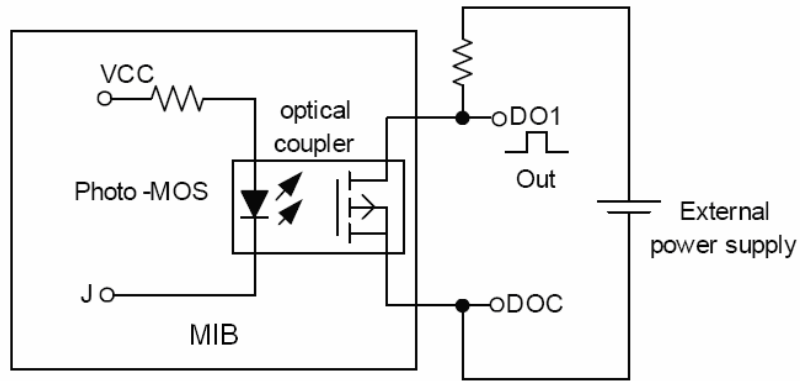
Any voltage mode can be grouped with any of the current modes. The MIB is supplied configured in 3-phase 4-wire unbalanced mode, i.e. voltage wiring mode 3LN and current input mode 3CT (3W4).



Digital output

MIB 7020

MIB 7020 has two digital outputs that can be used either as pulse outputs for Active/reactive energy or as over/under limit alarm signals. The digital outputs are suitable for driving tariff devices or AC/DC relays:



Digital output circuit (pulse)

Technical specifications

Voltage inputs

| | |
|-----------------------|--|
| Nominal voltage U_N | L-N 400V AC L-L 690V AC |
| Measuring range | 0 to 1.2 x U_N |
| Overload capacity | 2 x U_N continuously 2500V for 1s |
| VT primary | 50V...1000kV |
| VT secondary | 50V...400V |
| Fuse | 1A/230V |

Current inputs

| | |
|-----------------------|---------------------------------|
| Nominal current I_N | 1 or 5A AC |
| Measuring range | 0 to 1.2 x I_N |
| Overload capacity | 10A continuously 100A for 1s |
| CT primary | 5A...50kA |

Frequency

| | |
|-------------------------|------------------|
| Nominal frequency f_N | 50/60Hz |
| Measuring range | 45Hz to 65Hz |
| Measuring point | V1 phase voltage |

Accuracy

| | |
|--------------|-----------------|
| Voltage | 0.5% of range |
| Current | 0.5% of range |
| Power | 1.0% of reading |
| Power factor | 1.0% of range |
| Frequency | 0,5% of range |
| Energy | 1,0% of range |
| Harmonic | 2.0% of range |

Auxiliary power supply

| | |
|------------------------------|--|
| Universal AC/DC power supply | |
| Supply voltage AC: | 100...415V AC+/- 10% 50/60Hz/100...300V DC |
| DC: | 24...48V DC |
| Consumption | ≤ 2VA |
| Fuse | 1A/250V AC |
| Power consumption | 3VA@230V AC |

Digital output

| | |
|-------------------|---|
| Output form | Digital output NE (normally energised) NC (normally closed) circuit form is Photo- MOS. |
| Optical isolation | 4kV AC rms |
| Voltage Max. | 250Vac/300Vdc |
| Current Max. | 50mA |
| Pulse rate | 0.1...600kWh/pulse 0.1...600kVarh/pulse |
| Pulse duration | 20ms...1s |

Environmental conditions

| | |
|------------------------------|-------------------------|
| Working temperature, display | -10...55°C |
| Storage temperature | -40...85°C |
| Humidity, relative | 0-95% non-condensing |
| Temperature drifts | <100ppm/°C |
| Standard | EN 60068-2/-1,-2 |

Connections

| | |
|------------------|---------------------------|
| Measuring inputs | Firm terminal block |
| Wire max. | 5mm ² /AWG10 |
| Screw torque | 0.5Nm/5.5 lb-inch |
| Other | Pluggable block |
| Wire max. | 1.5mm ² /AWG16 |
| Screw torque | 0.25Nm/2.5 lb-inch |

Mounting

| | |
|---------------|--|
| Panel mounted | Max. 6mm thick |
| Panel cutout | 92 x 92mm +0.8mm (3.62" x 3.62") Or 4" round |

Protection

| | |
|-------|-----------------|
| Front | IP52 (EN 60529) |
| Rear | IP30 (EN 60529) |

Weight

350 g (0.8 lbs.)

Material

| | |
|---------------|-------------|
| Environmental | IEC 60068-2 |
|---------------|-------------|

EMC

EN 61000-6/2-4

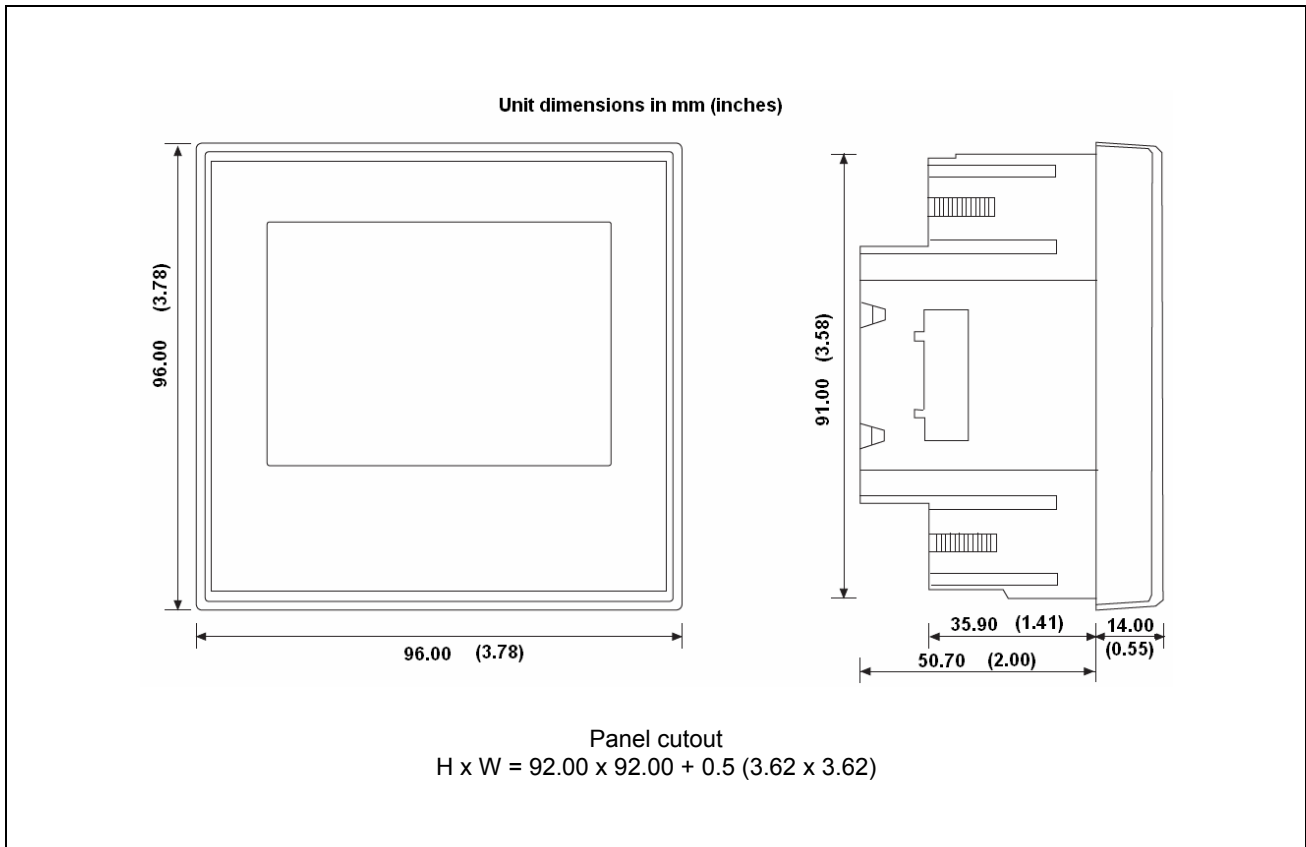
Safety

EN 61010-1/UL
61010-1
Cat. III, pollution
degree 2

Test voltage

2.2kV according to
EN 61010-1

Unit dimensions in mm (inches)



Order specifications

| | |
|--|--|
| <p><u>MIB 7000</u></p> <p>690V AC (L-L) 5A No digital output</p> | <p><u>MIB 7020</u></p> <p>690V AC (L-L) 5A 2 digital outputs</p> |
| <p>Aux. supply: 100...415V AC 100...300V DC</p> <p>DEIF no. 1211020007 EAN no. 5703727106882</p> | <p>Aux. supply: 100...415V AC 100...300V DC</p> <p>DEIF no. 1211020008 EAN no. 5703727106899</p> |
| <p>Aux. supply: 24...48V DC</p> <p>DEIF no. 1211020009 EAN no. 5703727106912</p> | <p>Aux. supply: 24...48V DC</p> <p>DEIF no. 1211020010 EAN no. 5703727106929</p> |

Due to our continuous development we reserve the right to supply equipment which may vary from the described.



DEIF A/S, Frisenborgvej 33
DK-7800 Skive, Denmark



Tel.: 9614 9614, Fax: 9614 9615
E-mail: deif@deif.com, URL: www.deif.com

