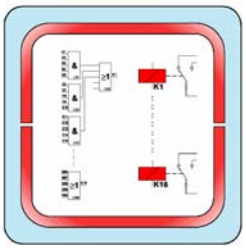
IMR 6000/10 ../20 ../30

System frame



- **Component of the MMS 6000 Machine Monitoring System**
- **Slots for adaptation of the signal processing periphery (monitors, logic cards and interface cards)**
- **External connection of the periphery via spring cage– and screw connection plugs**
- **System frame configuration (depen–ding on the version) by hardware via bridges or via Dip– switches**
- **Build up of RS485 bus lines for integration and configuration of the monitors with the system frames**
- **Generation of master– key signals by a key– monitor at the 1st monitor slot (not at IMR 6000/20)**

Applications:

The system frames **IMR 6000/10 ../20 ../30** are developed for general use in industrial applications, where reliable adaptations between electronic devices and plant devices are necessary.

With the system frames **IMR 6000/10, ../20, ../30**, an appropriate adaptation of the signal processing periphery like:
– alarm signals
– error signals
– connection results
– external signals
can be realized and processed to feed in and spend out all relevant signals.

Design and functionality:

The system frames **IMR 6000/10, ../20, ../30** are components of the epro MMS 6000 machine monitoring system. They consist of a 19” card frame and comprise the following card slots at the front side:

- 8–10 Monitor slots (depending on the IMR type) for monitors of the **MMS 6000** series
- 2–4 slots (depending on the IMR type) for adaptation of one or more logic cards e.g. **MMS 6740**
- 1 slot for adaptation of an interface card e.g. **MMS 6830, MMS 6831**, **MMS 6824** or **MMS 6825**

The first monitor slot at the system frames **IMR6000/10** and **IMR6000/30** offers the possibility to imply a key monitor (MMS 6310 or MMS 6312) and to relay these key signals to other monitors via the system frame or external connections.
The rear of the system frames **IMR 6000/10, ../20, ../30** serve the purpose of:

- signal supply
- signal output for further processing
- parameterization of the system frame

The connection to the external periphery at the rear of the system frame is made by spring cage– or screw connection plugs.

If neccessary, it is possible to build up several RS485 bus lines within one system frame by the integration of a corresponding interface card. The appropriate parameterization does take place via external connections and/or via the configuration of the regarding Dip– switches.

The system frames **IMR 6000/10, ../20, ../30** offer substantial saving potential with the wiring complexity.

Technical Data:

Data to the special versions of the system frameworks, you can find in the appropriate sections of this data sheet.
Data and configuration references to the monitors, logic– and interface cards please find in the relevant data sheets.

> **!** These system frameworks have two separated power supply, because they offer the possibility to fulfill the NEC guide lines of “Low Voltage Limited Energy”.
> A max. supply voltage of 24VDC and a max. input current of 4A per supply result in a maximum Power of < 100VA per supply. With a limitation of the supply voltage and current to this limit, the NEC guide lines of “Low Voltage Limited Energy ” (LVLE) are generally complied.

Ambient conditions:

- **application class:**
  KTF according to DIN 40 040
- **ambient temperature:**
  reference temperature:
  +25°C / +77°F
  nominal use range:
  0 ... +65°C / 32 ... +167° F
- **temperature range for storing and transport:**
  –30 ... +85°C / –22 ... 185° F
- **allowed relative humidity:**
  5...95%, not condensing
- **permissible vibration:**
  regarding to IEC 68–2, Part 29
- **vibration range:**
  peak value of acceleration
  98 m/s^2 / 3858.3 in/s^2
- **vibration acceleration:**
  nominal shock duration:
  16ms
- **permissible shock load:**
  regarding IEC 68–2, Part 29
  peak value of the acceleration:
  98 m/s^2 / 3858.3 in/s^2
- **frame shock duration:**
  nominal impact load:
  16 ms
- **System of protection:**
  IP 00, open design
  regarding DIN 40 050
- **EMC:**
  regarding EN50 081–1 / EN50 082–2

Configuration

For the stand–alone operations of the system frames **IMR 6000/10, ../20, ../30** no software configuration is necessary.

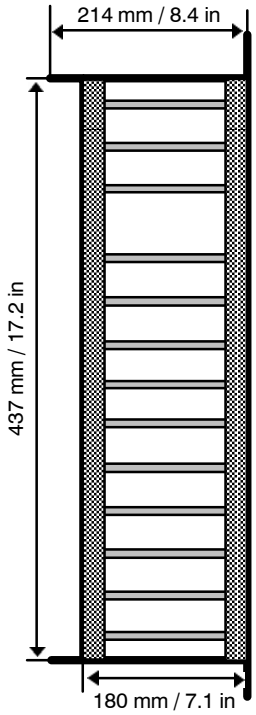
The parametrization of the system frames must be realized in terms of hardware via bridges, and Dip switches at the rear of the corresponding system frame.

References to the monitor configuration please find in the data sheets and the operating instructions of the appropriate monitors and the associated parameterization software.

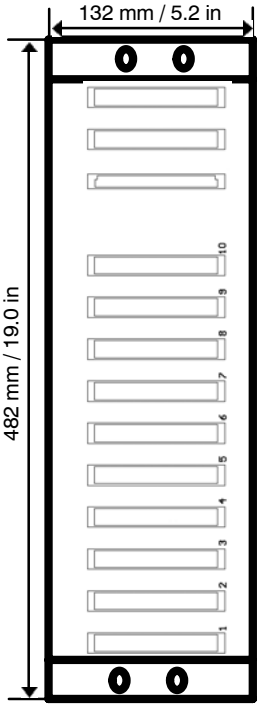
Dimensions

(The allocation of the components in the system frame is version dependent.)

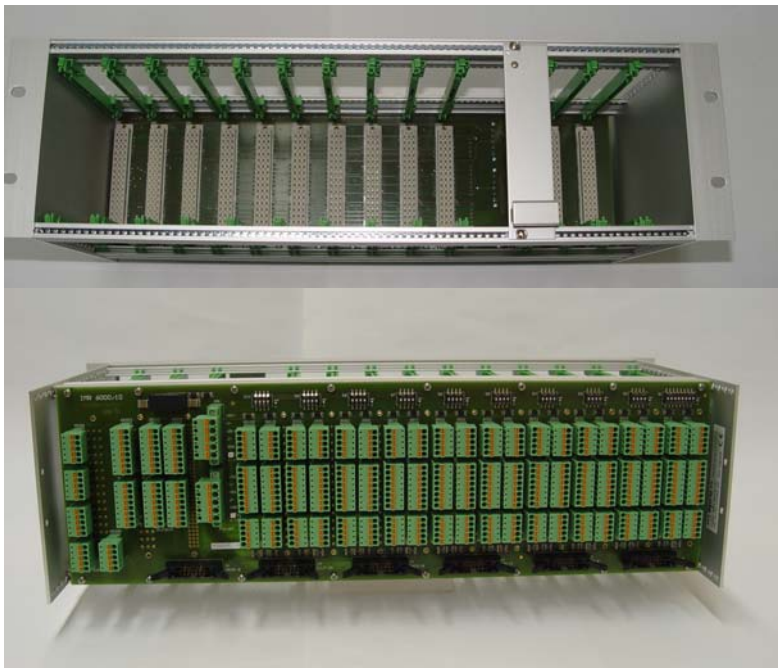
top view



front view



IMR 6000/10



- **Slots for adaption of the signal processing periphery:**
  monitors: 10. x MMS 6xxx *
  logic card: e.g. MMS 6740
  interface card: e.g. MMS 6824
- **External connection of the periphery via spring– cage and screw connection plugs**
- **System frame configuration via hardware bridges and parameterization of the Dip–switches.**
- **Build up and configuration of the RS485 bus– linies for connection and intergration of all monitors**
- **Generation of master key signals by a key monitor at the 1st monitor slot**

*** only: MMS 6110, MMS 6120, MMS 6125, MMS 6140, MMS 6210, MMS 6220, MMS 6310, MMS 6312, MMS 6410**

Design and functionality:

The system frame **IMR 6000/10** comprises the following card slots at the front side:

- 10 slots for monitors of the **MMS 6000** series *****
- 2 slots for adaptation of one logic card e.g. **MMS 6740**
- 1 slot for connection of an interface card e.g. **MMS 6830, MMS 6831**, **MMS 6824** or **MMS 6825**

The following monitors are supported by the system frame **IMR 6000/10** with their basic functions:
MMS 6110, MMS 6120, MMS 6125
MMS 6140, MMS 6210, MMS 6220
MMS 6310, MMS 6312, MMS 6410

The connection of the external periphery at the rear of the system frame is made by 5– and 8– pole spring cage– or screw terminal connection plugs (Phoenix).

The RS485– bus connections, the respective key connection as well as all channel clear, alert and danger alarms of the monitors are carried out via these plugs.

The voltage supply plugs at the rear of the system frame can be made by 5–pole spring cage– or screw terminal connection plugs.

The 1st monitor slot at the system frame offers the possibility to imply a key monitor and to relay its key signals to the other monitors.

On the one hand the interface card offers the option of direct connection to a RS485 bus via Dip– switch configuration and, in addition, the possibility to connect the monitors to the RS 485 bus by external wiring at the plugs.

On the basis of the implemented Dip switches, the RS485–Bus can be configured accordingly.

Technical Data:

voltage supply:

- Two redundant, diode decoupled inputs, nominal +24V with common ground.
- voltage input: +24V UN+, +24V UB+
- common reference: 0V U–, GND
- permissible voltage range: +18V ... +31.2V
- typical power consumption: < 100 W
- max. permissible fuse of the input current: 4A (per supply)
- internal generated galvanically seperated voltage: +24V
- max. power of the interal generated galvanically seperated voltage: 2W
- voltage supply inputs: KFT according DIN 40 040

Accesories:
for signal connection and voltage supply spring cage– and/or screw–connection plugs are required at the rear of the system frame **IMR 6000/10**.

The epro offered spring cage–connection plug– set (**IMR6000/10 NC: 9510–00029)** contains:

- 45 plugs: FK–MCP 1,5/5–ST–3,5 (5–pole)
- 26 plugs: FK–MCP 1,5/8–ST–3,5 (8–pole)
- 2 plugs: FKC 2,5/5–STF–5 (5–pole, voltage supply)

The epro offered screw–connection plug– set **(IMR 6000/10 NC: 9510–00028)** contains:

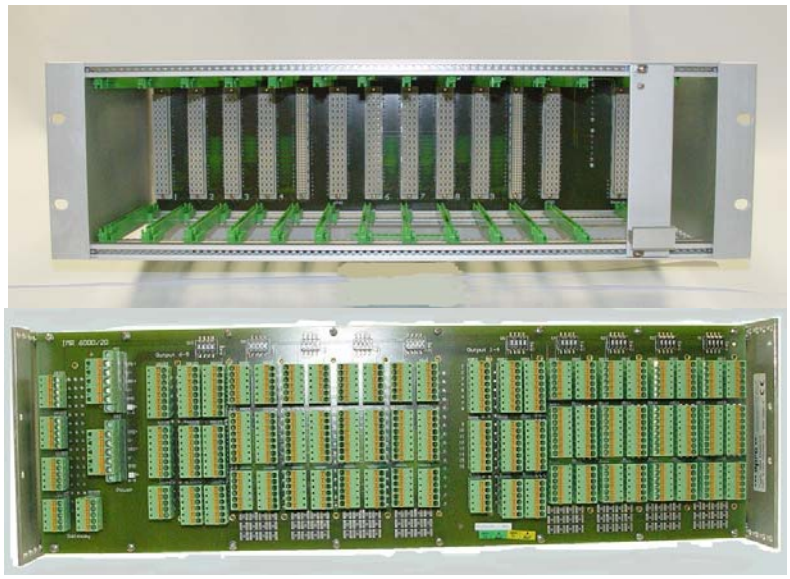
- 45 plugs: MC 1,5/5–ST–3,5 (5–pole)
- 26 plugs: MC 1,5/8–ST–3,5 (8–pole)
- 2 plugs: (5–pole, voltage supply) FRONT–MSTB 2,5/5– STF–5
- 1 bridge: ELB2, (2–pole, ground)

mechanical design:
dimensions – see drawing
rear elements: 2 LEDs yellow, voltage supply OK (+24V)

net weight: approx. 2120 g
gross weight: approx. 2680 g

epro

IMR 6000/20



- **Slots for adaptation of the signal processing periphery:**
  monitors: 8 x MMS6620
  logic cards: 2 x e.g. MMS6740
  interface card: 1x e.g. MMS6825
- **Connection of the external periphery via spring cage– and/or screw connection plugs**
- **System frame configuration via hardware by bridges or by configuration of the Dip–switches**
- **Configuration of the RS485 bus–lines for integration of all implemented monitors**

Design and functionality:

The system frame **IMR 6000/20** comprises the following card slots at the front side:

- 8 slots for monitors of type **MMS 6620**
- 4 slots for adaption of two logic cards e.g. **MMS 6740**
- 1 slot for connection of an interface card e.g. **MMS 6830, MMS 6831**, **MMS 6824** or **MMS 6825**

The connection of the external periphery at the rear of the system frame does take place via 5–, 6– and 8–pole spring–cage– and/or screw connection plugs (Phoenix).

The RS485 bus connections as well as the channel clear– and the signal outputs of the monitors are fed out via these plugs.

The voltage supply does take place via two 5–pole plugs at the rear of the system frame.

On the one hand the interface card offers the option of direct connection to the RS485 bus and in addition the posssibility to connect the monitors to the RS 485 bus by external wiring at the plugs.

On basis of the implemented Dip switches the RS485–Bus can be configured accordingly.

Technical Data:

voltage supply:
two redundant, diode decoupled inputs, nominal +24V with common ground.

- voltage input: +24V UN+, +24V UB+
- common ground: 0V U–, GND
- permissable voltage range: +18V ... +31.2V
- typical power consumption: < 100 W
- max. permissible fuse of the input current: 4A (per voltage supply)
- internal generated, galvanically separated voltage: +24V
- max. power of the internal generated, galvanically separated voltage: 2W

voltage supply inputs:
KFT according DIN 40 040

accessories:
For signal connections and voltage supply, spring cage– and/or screw–connection plugs are required at the rear of the system frame IMR 6000/20. The spring cage–connection plug– set offered by epro **(IMR6000/20 NC: 9510–00031)** contains:

- 7 plugs: FK–MCP 1,5/5–ST–3,5 (5–pole)
- 36 plugs: FK–MCP 1,5/6–ST–3,5 (6–pole)
- 28 plugs: FK–MCP 1,5/8–ST–3,5 (8–pole)
- 2 plugs: FKC 2,5/5–STF–5 (5–pole, voltage supply)

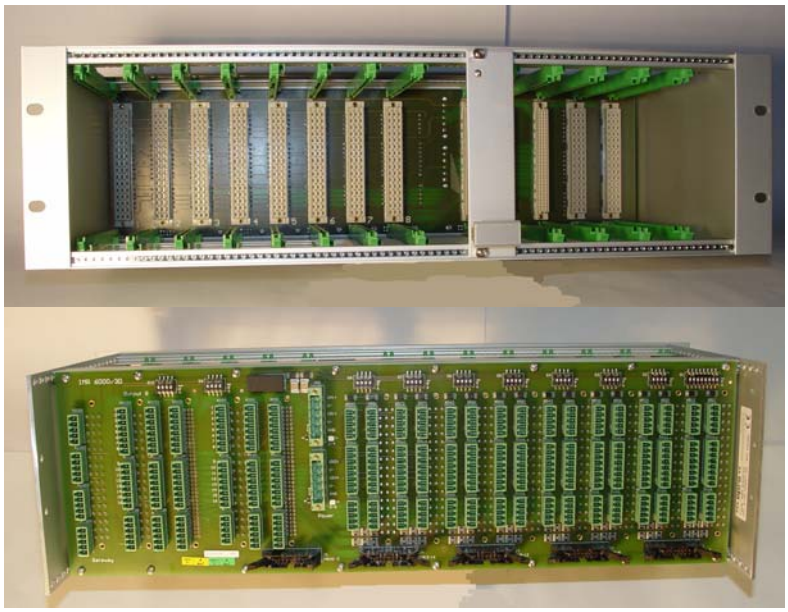
The screw–connection plug– set offered by epro (**IMR 6000/20 NC: 9510–00030)** contains:

- 7 plugs: MC 1,5/5–ST–3,5 (5–pole)
- 36 plugs: MC 1,5/6–ST–3,5 (6–pole)
- 28 plugs: MC 1,5/8–ST–3,5 (8–pole)
- 2 plugs: (5–pole, voltage supply) FRONT–MSTB 2,5/5– STF–5

mechanical design:
dimensions – see drawing
rear elements
2 LEDs yellow,
voltage supply OK (+24V)

net weight: approx. 2120g/ 74,78oz
gross weight: approx. 2680g/ 94,53oz

IMR 6000/30



- **Slots for adaptation of the signal processing periphery:**
  monitors: 8 x MMS6xxx *
  logic cards: 2 x e.g: MMS6740
  interface card: 1 x e.g. MMS6825
- **Connection of the external periphery via spring cage– and/or screw connection plugs**
- **System frame configuration via hardware by bridges or by configuration of the Dip–switches**
- **Configuration of the RS485 bus–lines for integration of all implemented monitors**
- **Generation of master key signals by a key monitor at the 1st monitor slot**

*** only: MMS 6110, MMS 6120, MMS 6125, MMS 6140, MMS 6210, MMS 6220, MMS 6310, MMS 6312, MMS 6410**

Design and functionality:

The system frame **IMR 6000/30** comprises the following card slots at the front side:

- 8 slots for monitors of the **MMS 6000** series *****
- 4 slots for adaptation of two logic cards e.g. **MMS 6740**
- 1 slot for connection of an interface card e.g. **MMS 6830, MMS 6831**, **MMS 6824** or **MMS 6825**

The following monitors are supported at the system frame **IMR6000/30** in their basic functions:
MMS 6110, MMS 6120, MMS 6125
MMS 6140, MMS 6210, MMS 6220
MMS 6310, MMS 6312, MMS 6410

The connection to the external periphery at the rear of the system frame takes place via 5–, 6– or 8–pole spring cage– and/or screw connection plugs (Phoenix).

The RS485 bus connections, the respective key– connection as well as the channel clear, alert and danger alarms of the monitors, are fed out via these plugs at the rear of the system frame.
The voltage supply does take place via two 5–pole plugs at the rear of the system frame.

The 1st monitor slot at the system frame offers the possibility to imply a key monitor (MMS6310 or MMS6312) and to relay its key signals to the other monitors.
The interface card offers the option of direct connection to the RS485 bus and in addition the possibility to connect the monitors to the RS 485 bus by external wiring with the plugs.

The RS485 bus can be configured accordingly by the implemented Dip–switches.

Technical Data:

voltage supply:
two redundant diode decoupled inputs, nominal +24V with common ground:

- voltage input: +24V UN+, +24V UB+
- common ground: 0V U–, GND
- permissible voltage range: +18V ... +31.2V
- typical power consumption: < 100 W
- max. permissible fuse for input current: 4A (per supply)
- internal generated, gavanically separated voltage: +24V
- max. power of the internal generated, galvanically separated voltage: 2W
- voltage supply inputs: KFT according to DIN 40 040

accessories:
for signal connection and voltage supply, spring cage– and/or screw–connection plugs are required at the rear of the system frame **IMR 6000/30**.
The spring– cage connection plug–set, offered by epro (**IMR6000/30 NC:9510–00033),** contains:

- 37 plugs: FK–MCP 1,5/5–ST–3,5 (5–pole)
- 5 plugs: FK–MCP 1,5/6–ST–3,5 (6–pole)
- 28 plugs: FK–MCP 1,5/8–ST–3,5 (8–pole)
- 2 plugs: FKC 2,5/5–STF–5 (5–pole,voltage supply)

The screw–connection plug– set offered by epro (**IMR 6000/30 NC: 9510–00032)** contains:

- 37 plugs: C 1,5/5–ST–3,5 (5–pole)
- 5 plugs: MC 1,5/6–ST–3,5 (6–pole)
- 28 plugs: MC 1,5/8–ST–3,5 (8–pole)
- 2 plugs: (5–pole, voltage supply) FRONT–MSTB 2,5/5– STF–5
- 1 bridge: ELB2–5 (2–pole,voltage suppy)

mechanical design:
dimensions – see drawing
rear elements: 2 LEDs yellow, voltage supply OK (+24V)

net weight: approx. 2120g/ 74,78oz
gross weight: approx. 2680g/ 94,53oz

Order numbers:

IMR 6000/10 system frame		**9100–00095**
IMR 6000/20 system frame		**9100–00096**
IMR 6000/30 system frame		**9100–00097**

accessories (not part of the scope of delivery of the system frame)

plug–set	screw connection terminals	for IMR 6000/10	**9510–00028**
plug–set	spring cage terminals	for IMR 6000/10	**9510–00029**
plug–set	screw connection terminals	for IMR 6000/20	**9510–00030**
plug–set	spring cage terminals	for IMR 6000/20	**9510–00031**
plug–set	screw connection terminals	for IMR 6000/30	**9510–00032**
plug–set	spring cage terminals	for IMR 6000/30	**9510–00033**

Installation and commissioning of the device may only be made by trained staff.

The manufacturer is not liable for damages, caused by improper use or by operation errors of not authorized persons.

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