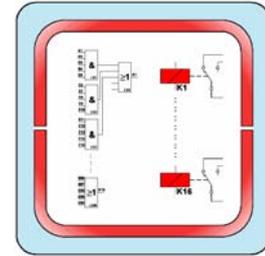# MMS 6740

Programmable Logic card with 60 Inputs, 16 Output relays and 30 Logic modules

- Component of the MMS 6000 machine monitoring system

- Adaptation of MMS 6000 binary outputs and external alarm functions

- Integration into a 19" system frame e.g. IMR 6000/xx

- 16 Relay outputs, single– pole switchover contacts

- Optional status control of the relay states via front side LEDs

- Switching capacity max. 48V / 1A

- 60 control inputs

- Combination of the input signals via 30 logic modules

- Configurable via confi– guration software MMS 6910

- Adjustable logic modules:
  - AND
  - OR
  - 2 out of 3
  - Negation
  - AND/ AND/ OR– combination

Application:

The **MMS 6740** logic card is a component of the **MMS 6000** machine monitoring system. It is designed for use in industrial plants, where a reliable adaptation between electronic devices and peripheral equipment is required.

The **MMS 6740** logic card allows the simple adaptation of logic signals to electrical devices. It is designed especially for the use with a system frame (e.g. IMR 6000/xx). The programmable logic card offers the possibility to connect several input signals to each other.

The logic card is at best applicable for connections to MMS 6000 monitors in conjunction with a system frame IMR6000/xx.

This serves the purpose of linking:
- alarm signals
- failure signals
- connection results
- external supplied signals

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Assembly and Functionality:

The MMS 6740 logic card is designed as double standard euroboard.

For internal processing it has 60 digital, galvanically isolated input channels in 24V– logic and 30 internal logic– results.
The MMS 6740 offers the possibility to gather and interlink the 60 inputs and 30 internal logic– results. It permits to release these results via the 16 external relay outputs.
To realize the individual logical combinations, there are in total 30 self–sufficient and programmable logic modules available.

Each of the 30 logic– modules can be used for one of the following logic– functions:

AND,
OR
2 OUT OF 3
Negation
AND/ AND/ OR– combination

All results of the single logic– modules are provided to all other logic– modules for further processing.

The configuration of the individual logic– modules is possible with the MMS 6910 configuration software which is part of the MMS Para Kit.

The functional results of the logic modules can be processed externally, seperately and optionally via one of the 16 output relays. Each of the 16 relays provides a one–pole switchover contact.
The switching status of the different relays are displayed via one yellow LED per relay on the front panel of the MMS 6740.
The correct states of the internal and external supply voltages are displayed via two green LEDs on the front panel ot the MMS 6740.
The relays have a standard reaction time of 10 ms.

Assembly and Functionality with using a system frame (e.g. IMR 6000/xx):

The use of the MMS 6740 logic card is only provided in connection with a system frame (e.g. **IMR 6000/xx).**
Normally, the epro system frames provide a direct coupling to the logic card **MMS 6740** via slots which are especially implemented to connect MMS 6740 cards.
The corresponding slot for the relay board is equipped with a 48–pole connector (DIN 41612, design F 48 M).

The corresponding slot for the mainboard is equipped with a 96–pole connector (DIN41612, design F96 M).

Normally the major part of the wiring to the logic card (e.g. binary outputs of the **MMS 6000** monitors, RS485–bus, single pole switchover contacts of the **MMS 6740,** etc.) is made via the system frame.

The use of a system frame reduces the external wiring expenditure considerably.
With the use of a system frame (e.g. IMR 6000/xx) the binary signals of the implemented monitors and if applicable the external fed–in signals get transferred to the 60 galvanically separated inputs of the MMS 6740 logic card via the system frame.

Technical Data:

Inputs
60 inputs in 24V–logic, galvanically seperated by optocouplers

Voltage supply
redundant: U_N / U_B 18...31,2V

galvanical separated internal system voltage: +5V

Power consumption:
controller circuits: approx. 2,5W
relays: approx. 16 x 0,2W = 3,2W
total power consumption: max. 6 W

Measuring inputs
nominal range: 0 ... +24 V (24 V–logic)
limit range: 0 ... 48 V
switching level: 0 ... 3 V = Low Signal
                13 ... 48 V = High Signal
input resistance: > 3 kΩ

Relay outputs
16 single pole switchover contacts
channel 1 ... channel 16:
open circuit and short circuit proof
potential free, galvanically separated contacts:
1 switchover contact per relay
voltage: max. 48 V_{dc}, 20V_{rms}
current: max 1 $A_{dc, ac}$
reaction time: max. 10 ms

Communication Interface:
RS232 Interface
Front socket for configuration and visualization.

Circular plug–in connector on the front: mini–DIN–connector (TM 0508A/6) for configuration cable (part of the **MMS Para Kit)**

RS 485 Interface
Bus interface for communication with analysis– and diagnostic systems (e.g. MMS68xx) and the configuration software (part of the **MMS Para Kit**).

Mechanical design:
printed board:
european standard format (100 mm x 160 mm) according to DIN 41 494 in sandwich design, distance 6TE

width: 10 TE (approx. 50 mm)
height: 3 HE (approx. 128 mm)
length: 160 mm

net weight :   approx. 420 g
gross weight: approx. 560 g

Connectors:
relay board: DIN 41 612,
              design F 48 M
main board: DIN 41 612,
              design F 96 M

Additional equipments:
IMR6000/xx system frame
The use of the **MMS 6740** without a system frame is not provided and thus not supported by epro.
The shipment of the major **MMS 6740** types, which are provided with a 10TE front plate, includes a 2TE blind plate for use in an IMR6000/xx system frame.

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Elements on the Front plate:

2 green power–LEDs:
(24V, Controller Ok)

16 yellow LEDs:
indication of the relay states

1 mini–DIN diode type socket:
RS232–connection for
the configuration cable

Environmental conditions:

- **Protection class:**
IP 00, open design according to DIN 40050

- **Environmental conditions:**
according to DIN 40040,
class KTF
reference temperature:
+25°C
operating temperature range:
0...+65°C

- **Temperature range for storage and transport:**
–30...+85°C

- **Relative humidity:**
5...95%, non condensing

- **Permissable vibration:**
according to IEC 68–2, part 29
amplitude: 98 m/s^2
acceleration (nominal duration):
16ms

- **permissible shock:**
according to IEC 68–2, part 29
peak value of acceleration:
98 m/s^2
nominal shock duration:
16 ms

- **EMC resistance:**
according to
EN50081–1 /EN50082–2

Requirements on configuration PC:

Configuration of modules is made via the RS232 interface on the module front or via the RS485 Bus by means of a computer (laptop) with the following minimum specifications.

Processor:
Pentium II or higher, minimal clock rate 500 MHz

- **Required working memory:**
regarding the requirements of the operating system

- **Hard disk capacity:**
minimum 150 MB

- **Operating system:**
Windows$^©$ 2000 oder XP

- **Devices:**
CD–ROM

- **Keyboard and mouse:**
Microsoft or Microsoft compatible

- **Interfaces**:
one free serial interface
(RS232, COM1 or COM2)

Order numbers:

MMS 6740	Programmable logic card card	**9100–00091**
MMS Para Kit	Configuration kit	**9510–00027**

STOP 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.