

# Metering Technology



## MR15 and MR30

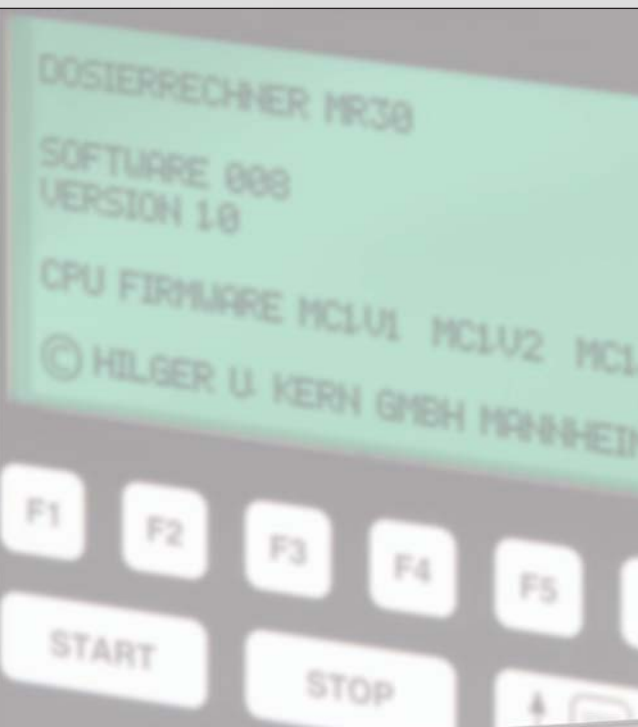
Hilger u. Kern Metering Computer Technology



Hilger u. Kern / Dopag Group



## The new generation...



## General

Hilger u. Kern metering computers are able to handle challenging control tasks in industrial applications.

The main advantages are:

- Simple operation
- Compact design
- Efficient hardware
- Multi tasking operating system

The MR15 and MR30 metering computers facilitate program downloads, backup, process data storage and much more over a common USB stick. They contain no-voltage based data storage for program, application or system data.



## MR15

The metering computer MR15 is a high performance central processing unit (CPU) used to handle sophisticated metering tasks. Numerous digital and analogue inputs and outputs are included onboard.

The CPU offers the possibility of installation onto a DIN rail with an interface to a touch panel or as a compact control unit to be installed into a control cabinet. The operator panel of the compact control unit is equipped with an alphanumeric keypad.

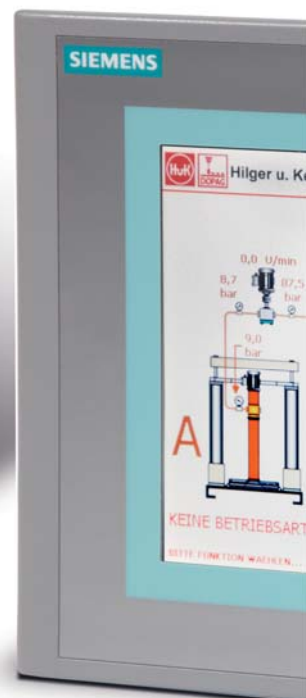
By use of a CAN interface the input and output signals can be extended. The communication capability of the CPU includes two serial and one CAN interface.

## MR30

The metering computer MR30 reaches its highest computing power by using the latest micro controller design and a multi processor system with 3 CPU's. Numerous digital and analogue inputs and outputs are included onboard.

The CPU offers the possibility of installation onto a DIN rail with an interface either to a touch panel or an operator panel. The operator panel is equipped with an alphanumeric keypad.

By use of a CAN interface the input and output signals can be extended. The communication capability of the CPU includes four serial, two CAN and one Ethernet interface.

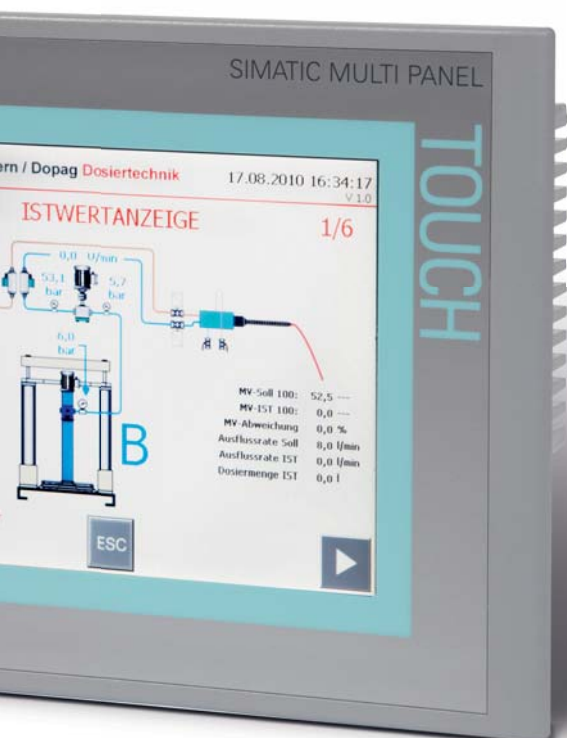


## Touch panel

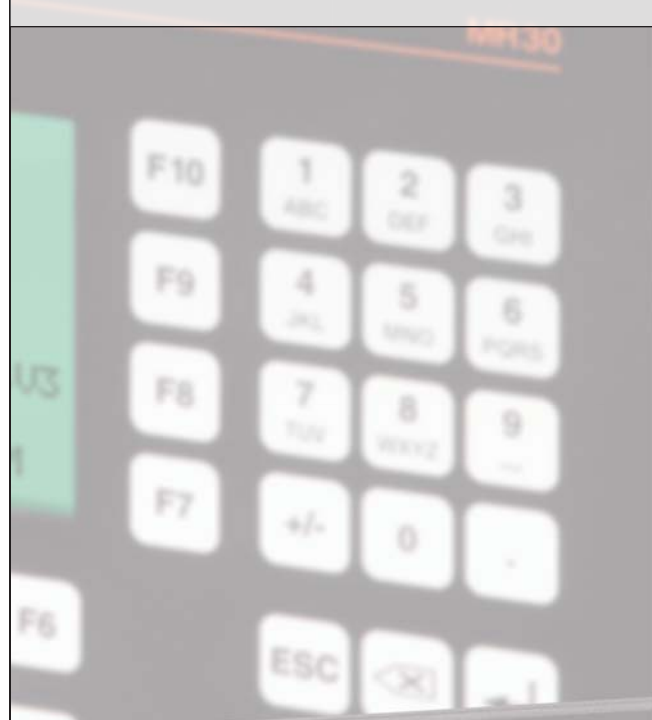
The CPU's of both metering computers offer the possibility of installation onto a DIN rail with an interface to a touch panel that enables operator friendly usage and visualisation of system parameters.

In this case a Siemens SIMATIC touch panel is used. It includes application memory and language switching facilities.

The storage of reports, process data, backup and restore data can optionally be saved on an SD multi media card.



## ...of metering computers



## Technical data

|  | <b>MR15</b>   | <b>MR30</b>   |
|--|---|---|
| <b>Power supply</b>  | 24 Volt DC +/-10 %  | 24 Volt DC +/-10 %  |
| <b>Power consumption</b>   | Max. 0.8 A  | Max. 1 A CPU,<br>max. 0.4 A for operator panel                              |
| <b>Protection class</b>  | IP10 (CPU)<br>IP20 (Compact control unit)                                   | IP10  |
| <b>CPU assembly</b>  | DIN-Rail (CPU)<br>Control cabinet (Compact control unit)                    | DIN-Rail (CPU)<br>Operator panel or touch panel required                    |
| <b>LCD Display operator panel</b>  | 8 lines x 40 characters<br>LED backlight                                    | 16 lines x 40 characters<br>CFL backlight                                   |
| <b>Processor</b>   | Infineon XC167  | Multi processor system:<br>1x Infineon XC167<br>2x Infineon XC164           |
| <b>External bus width</b>  | 16 Bit  | 16 Bit  |
| <b>Clock frequency</b>   | 40 MHz  | 40 MHz  |
| <b>Program memory</b>  | 1664 KB flash   | 1664 KB flash   |
| <b>System memory</b>   | 512 KB SRAM   | 1 MB SRAM   |
| <b>Data memory</b>   | 384 KB flash application storage<br>128 KB flash system data<br>2 KB NVRAM  | 512 KB flash application storage<br>128 KB flash system data<br>32 KB NVRAM |
| <b>Data storage</b>  | Flash: min. 20 years,<br>min. 1 Mio. writing cycles<br>NVRAM: min. 10 years | Flash: min. 20 years,<br>min. 1 Mio. writing cycles<br>NVRAM: min. 10 years |
| <b>Real time clock</b>   | Standard  | Standard  |
| <b>Programming language</b>  | High level language C / Keil Compiler                                       | High level language C / Keil Compiler                                       |
| <b>Operating system</b>  | Realtime multitasking OS ARTX166  | Realtime multitasking OS ARTX166  |
| <b>Serial interfaces</b>   | 1x RS 232<br>1x RS232/RS422   | 3x RS 232<br>1x RS 422  |
| <b>Digital Inputs/Outputs onboard</b>  | 24 I / 16 O   | 26 I / 16 O   |
| <b>Analogue Inputs/Outputs onboard</b>   | 5 I / 3 O   | 8 I / 2 O   |
| <b>USB 2.0</b>   | 1x  | 1x  |
| Program upload   | Standard  | Standard  |
| Windows compatible flash file system for data security, operating data capture | Optional  | Optional  |
| <b>Connection interface for extension module</b>                               | Standard  | Standard  |
| <b>Interface CAN V2.0B</b>   | 1x  | 2x  |
| Extra protocol e.g. CANopen  | Optional  | Optional  |
| <b>Ethernet 10/100-Base-T</b>  | ---   | 1x  |
| Transport layer: UDP/TCP   | ---   | Standard  |
| Protocol layer:<br>Modbus-TCP<br>Siemens RK512/3964R                           | ---   | Optional  |
| <b>Feldbus interface</b>   |   |   |
| Profibus-DPV0..DPV2  | Optional<br>external gateway  | Optional<br>onboard ad-on module  |
| Interbus-S   | Optional<br>external gateway  | Optional<br>onboard ad-on module  |
| Profinet   | Optional<br>external gateway  | Optional<br>external gateway  |
| Others   | Optional<br>external gateway  | Optional<br>external gateway  |

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