

Data sheet

Data Pulse inputs (In-A, In-B) outputs (Out-C, Out-D)

MULTICAL® 403

MULTICAL® 603

MULTICAL® 803

- Communication speed at 1200 bit/s
- Pulse inputs or pulse outputs
- Data connection galvanically isolated from meter



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Introduction

The Data Pulse, inputs (In-A, In-B) and Data Pulse, outputs (Out-C, Out-D) modules have been developed along with the MULTICAL® 403 energy meter family. The data communication module enables the MULTICAL® meters to be hard-wired to other on-site communication equipment for automatic reading of data in the meter.

The protocol is Kamstrup KMP *, which allows reading of all actual and historical data as well as other relevant information to identify the meter.

The module design allows for extensive reading of data without significantly reducing the battery lifetime of the meter. The module ensures galvanic isolation between the meter and the serial data connections.

* Utilities and other relevant companies wishing to develop their own communication driver for the KMP protocol can order a demonstration program in C # (.net-based) and a detailed protocol description (in English language).

Applications

The data pulse modules enable unlimited reading of any data register in the meter. Hence full flexibility to implement you own applications is achieved.

Analysis


MULTICAL® energy meters contain large quantities of data. Both actual data and historical data relevant for analysis can be read.

Billing

All relevant data for billing can be read from MULTICAL®.

Installation

The module is easily mounted on a free module space in the meter.

 The module can be used in meters supplied by either a battery or by mains supply.

Cable connections

Terminals

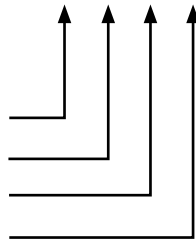
Max cable size 1.5 mm²

HC-003-10: Data Pulse, inputs (In-A, In-B)



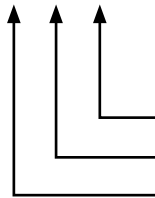
Pulse inputs

- Terminal 65: Pulse In A(+)
- Terminal 66: Pulse In A(-)
- Terminal 67: Pulse In B(+)
- Terminal 68: Pulse In B(-)



Data

- Terminal 64: GND
- Terminal 63: REQ
- Terminal 62: DAT

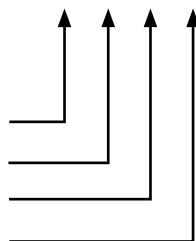


HC-003-11: Data Pulse, outputs (Out-C, Out-D)



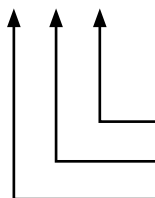
Pulse outputs

- Terminal 16: Pulse Out-C (+)
- Terminal 17: Pulse Out-C (-)
- Terminal 18: Pulse Out-D (+)
- Terminal 19: Pulse Out-D (-)



Data

- Terminal 64: GND
- Terminal 63: REQ
- Terminal 62: DAT

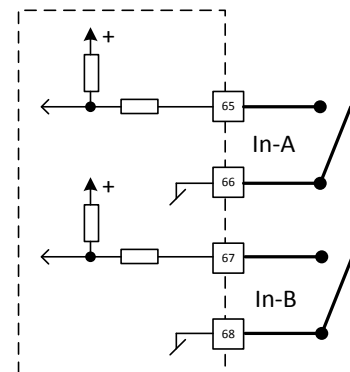


Pulse inputs

The module is equipped with two pulse inputs, In-A and In-B, to collect and accumulate pulses, e.g. from water and electricity meters.

The pulse inputs are physically placed on the module. However, the accumulation and logging of values are performed by the MULTICAL® calculator.

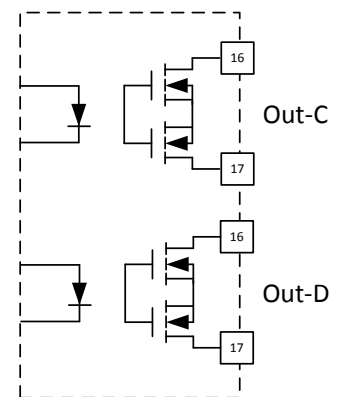
When installing a module with pulse inputs in slot 2 of MULTICAL® 603 and MULTICAL® 803, the pulse inputs will be registered in the meter as In-A2 and In-B2.



Pulse outputs

The module has two configurable pulse outputs, Out-C and Out-D, which are used for pulsing out selected registers from the MULTICAL® calculator.

The pulse outputs are physically placed on the module, but the pulses are generated by the MULTICAL® calculator.



Data

The data signals DAT and REQ are low-voltage serial signals, which require a special Kamstrup active converter cable in order to communicate through RS232 or via USB.

Technical specifications

Physical

For installation in MULTICAL® 403, MULTICAL® 603 and MULTICAL® 803

Mechanical data

Dimensions (L x W x D) 90 x 35 x 14 mm
Weight < 45 g

MULTICAL® supply

  Battery or AC supply

Communication

Protocol Kamstrup KMP
Baud rate 1200 bit/s
Data, parity, stop 8 bit, No parity, 2 stops

Data refresh rate

Data from the meter to the module are refreshed each time the meter completes an integration. The integration mode is defined by the meter's L-code.

Bus-specific

Type 3.6 V C-MOS levels
Galvanic isolation > 2 kV

Pulse inputs

Input type Contact input
Open voltage 3.6 V
Current $\leq 5 \mu\text{A}$
Max cable length 10 m

Pulse outputs

Output type Opto Fet
External voltage 5...45 VAC/VDC
Current 1...50 mA
 $R_{\text{ON}} \leq 40 \Omega$
Max cable length 25 m

Environment

Operational temperature 5 °C – 55 °C
Humidity 25 – 85 % RH non-condensing

Markings/approvals

CE, MID together with the type approval of MULTICAL® 403, MULTICAL® 603 and MULTICAL® 803

Data Pulse, inputs (In-A, In-B)
Data Pulse, outputs (Out-C, Out-D)

MULTICAL® 403
MULTICAL® 603
MULTICAL® 803

Ordering

Description

Data Pulse, inputs (In-A, In-B)
Data Pulse, outputs (Out-C, Out-D)
3-wire 1.5 m cable with USB plug
USB Common Driver

Order No.

HC-003-10
HC-003-11
6699 098
www.kamstrup.com

Data Pulse, inputs (In-A, In-B)
Data Pulse, outputs (Out-C, Out-D)

MULTICAL® 403
MULTICAL® 603
MULTICAL® 803

Kamstrup A/S

Industrivej 28, Stilling
DK-8660 Skanderborg
T: +45 89 93 10 00
F: +45 89 93 10 01
info@kamstrup.com
kamstrup.com