

Data sheet

## Analog Output Module

for MULTICAL® 403 and MULTICAL® 603

- Two current outputs
- Outputs selectable as either 0...20 mA or 4...20 mA
- Fast update speed
- Analog outputs are galvanically isolated from the meter



## Description

The new high performance analog output module for the MULTICAL® 403 and MULTICAL® 603 energy meter is the optimal choice for control purposes. The analog outputs are primarily used in building management and industrial applications. Here the analog outputs are often used to pass information to other types of equipment, typically a PLC or similar.

The analog output module is designed with focus on reliability and long-term stable current outputs of meter data.

## Applications

The analog module provides fast updating of meter values to support control applications based on flow, energy or temperatures. The galvanic isolation between the meter and the analog circuits ensures an installation with a minimum of electrical interference.

The module offers two independent and programmable current output signals for simple monitoring and control tasks.

## Installation

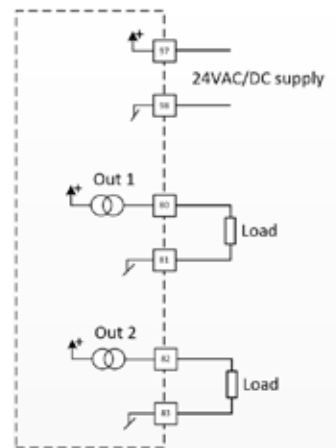
The module is easily mounted into the module slot of the meter. A configuration might be necessary if a change of values to output or change of output current setting is required.

The module is power-supplied from the meter's internal 230 VAC or 24 VAC supply module. The current outputs must be supplied by a separate power supply.

## 0/4...20 mA output connection

Screw terminals for the two analog outputs + and -. The load of the current loop is connected directly between the + and - terminals.

Note: The module has active current outputs. Applying a voltage across the outputs may damage the module.



## External power

Screw terminals for connection of the power supply needed for the current outputs. The power supply should be able to deliver sufficient current and voltage to keep the analog outputs stable.

Note: The supply must be galvanically isolated from the receiving equipment.

## Cable connections

### Wire size

Max cable size 1.5 mm<sup>2</sup>



### 0/4-20mA analog output connections

- Terminal 80: Current output 1 (+)
- Terminal 81: Current output 1 (-)
- Terminal 82: Current output 2 (+)
- Terminal 83: Current output 2 (-)

### External power

- Terminal 97: Supply 24-30 VAC/DC for current outputs
- Terminal 98: Supply

## Technical specifications

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### Physical

Usage Only suitable for installation in MULTICAL® 403 and MULTICAL® 603

### Analog output

Active current outputs 0...20 mA or 4...20 mA  
 Open loop voltage  $\geq 10$  VDC  
 Resolution 16 bit  
 Overall accuracy Better than 0.1 %  
 Galvanic isolation According to PTB-A50.1

### Supply

Power supply MULTICAL® with 230 VAC supply  
 MULTICAL® with 24 VAC supply

### External power

Supply for analog outputs 24 VDC/AC  $\pm 30$  %

### Environment

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

### Programming

Configuration Via the optical read-out head or the multi-pole connector on the module  
 Firmware update With METERTOOL HCW

### Markings/approvals

CE and EN 1434 in conjunction with the type approval of MULTICAL® 403 and MULTICAL® 603

## Ordering

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### Description

Analog output module  
 Transformer 230/24 VAC  
 USB configuration cable for H/C modules  
 Optical read-out head w/USB  
 Optical read-out head w/RS-232 D-SUB 9F  
 METERTOOL HCW

### Order No.

HC-003-40  
 6699-403  
 6699-035  
 6699-099  
 6699-102  
[www.kamstrup.com](http://www.kamstrup.com)

## Configuration

	XX	Y	Y	Z	Z	Z
<b>Module type</b>						
Analog module	40	0	1	1	0	2
<b>Output 1 configuration</b>						
0-20 mA		0				
4-20 mA		1				
<b>Output 2 configuration</b>						
0-20 mA			0			
4-20 mA			1			
<b>Data on Output 1</b>						
Flow V1					0	
Flow V2					1	
Power					2	
Temp 1 inlet					3	
Temp 2 outlet					4	
Temp 3					5	
Differential temp (T1-T2)					6	
<b>Data on Output 2</b>						
Flow V1						0
Flow V2						1
Power						2
Temp 1 inlet						3
Temp 2 outlet						4
Temp 3						5
Differential temp (T1-T2)						6

An analog module configured to 40-01-002 will be set up like this:

Output 1 is 0-20 mA. Data on output 1 is Flow V1.

Output 2 is 4-20 mA. Data on output 2 is Power.

The configuration of the module is readable in the energy meter display by selecting the TECH loop.

Scaling of the outputs is possible within a wide range. The scaling range is deliberately limited to ensure an overall high accuracy. Scaling is possible during ordering of the module or via METERTOOL HCW.

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