

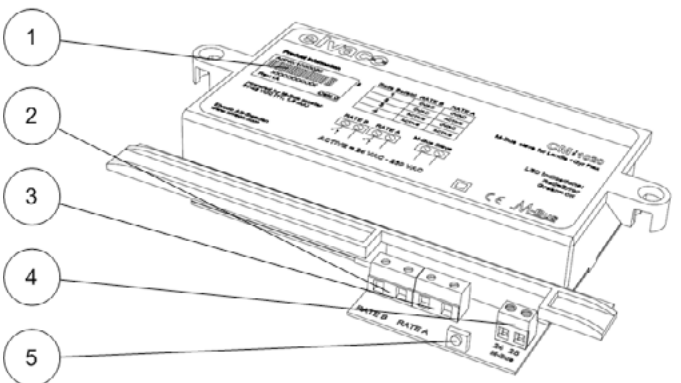
# CMi1020

## Integrated MCM for L+G E350, M-Bus

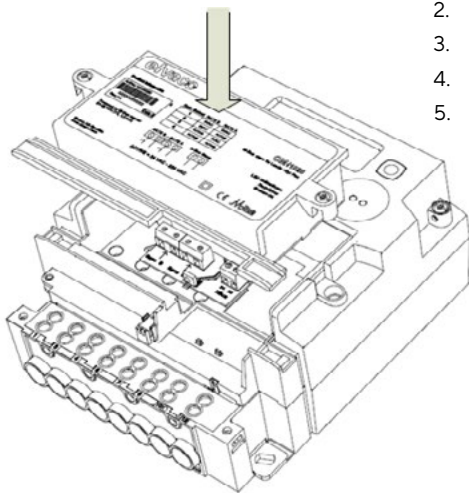
### INTRODUCTION

The CMi1020 is an integrated solution for Landis+Gyr E350 electricity meters. It handles the meter disconnecter facility, multi-rate and can send information to the display of the meter. This quick manual provides the information needed to get started with the device. For instructions on how to mount and install the electricity meter, please see the L+G E350 user's manual. For a complete description of CMi1020 or for information in Swedish, visit the Elvaco AB website, [www.elvaco.com](http://www.elvaco.com).

### OVERVIEW



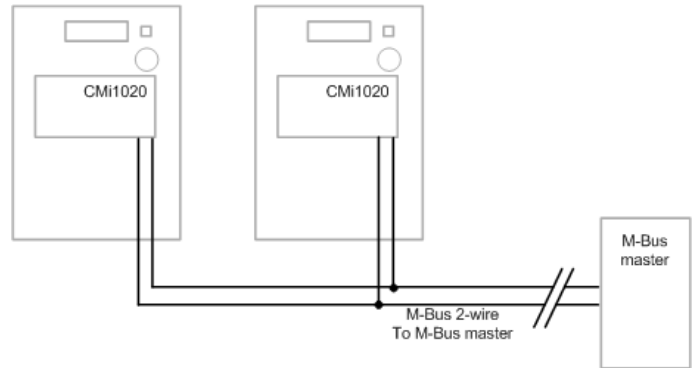
1. Serial number (secondary address)
2. Rate input B
3. Rate input A
4. M-Bus
5. Push Button



### MOUNTING

The mounting must be performed by a qualified electrician or installer with required knowledge.

Disconnect the power to the electricity meter when mounting CMi1020 or performing service work. Also disconnect the power to the rate inputs. The CMi1020 is mounted in the dedicated module slot of the meter. Be careful when placing the product in the slot to prevent accidental pin damages on the meter. Press the CMi1020 until it stops and tighten the module with the screws on each side. Make sure that the CMi1020 is mounted correctly.



### M-BUS 2-WIRE BUS

M-Bus is a multi-drop 2-wire bus with no polarity. Use a cable of area 0.25-1.5 mm<sup>2</sup>, e.g. a standard telephone cable (EKKX 2x2x0.5). Connect the wiring to screw terminal (4).

The M-Bus cables should not be placed against the live parts in the meter or against the wiring. Check that the cable isolation is intact. When the installation is completed, secure the wiring with cable ties.

### IMPORTANT

- All connected M-Bus slave devices must have unique M-Bus secondary or primary addresses depending on addressing mode.
- Measure voltage over M-Bus slave connection to verify M-Bus master connection. Voltage should be between 21-42 VDC.

### RATE INPUTS

CMi1020 has two galvanically isolated rate inputs. Rate active voltage is from 24 VAC to 230 VAC. The voltage from the rate inputs must be fused with a 10 A fuse and connected through an easily accessed and clearly marked switch. When the installation of the rate inputs is completed, secure the wiring with cable ties.

Rates are selected in a binary order, see table below for default rate input configuration.


Rate select	Rate B	Rate A
1	0 VAC	0 VAC
2	0 VAC	ACTIVE
3	ACTIVE	0 VAC
4	ACTIVE	ACTIVE

Rate configuration can be changed using M-Bus commands "Set meter rate" and "Set meter rate mapping table for hardware rate input A and B". See the complete manual.


## LED INDICATIONS

The product is equipped with two LEDs, which show information of M-Bus connection and successful meter readout.

### Red LED

Mode	Product state	Visual
100 ms on/ 5000 ms off	Short flash every five second. M-Bus master connected but no connection with meter.	

### Green LED

Mode	Product state	Visual
100 ms on/ 5000 ms off	Short flash every five second. M-Bus master connected and communication with meter.	

## TROUBLESHOOTING

### Pressing push-button does not toggle disconnecter output

Please verify meter and CMi1020 configuration:

- Disconnector control configuration, see M-Bus command "disconnector control" in the complete manual.
- P1 and P2 password configuration of the meter.
- P1 and P2 specific command usage, see the complete manual.
- Verify correct meter type (must be a disconnector equipped meter).

### Rate input does not change meter rate

Please verify meter and CMi1020 configuration:

- Rate control configuration, see complete manual.
- P1 and P2 password configuration of the meter.
- P1 and P2 specific command usage, see complete manual.
- Verify correct meter type (must be a rate configured meter).

### There is a delay when toggling disconnector

There is an internal process for toggling the disconnector which takes approximately 10 seconds, i.e. toggling disconnector cannot be done faster than 10 seconds. This also applies to when pushing the push-button.

### Product does not respond to M-Bus master commands

Please verify your M-Bus slave configuration and connection:

- Voltage over M-Bus connection should be between 21 VDC and 42 VDC.
- All M-Bus slaves connected to the M-Bus master must have unique primary addresses or secondary addresses depending on addressing mode used.
- Verify M-Bus slave baud rate used by M-Bus master. M-Bus master baud rate must be identical to M-Bus slave baud rate.

## SAFETY

The warranty does not cover damage to the product caused by usage in any other way than described in this manual. Elvaco AB can not be liable for personal injury or property damage caused by usage in any other way than described in this manual.

## ORDERING INFORMATION

Product	Part number	Description
CMi1020	1050020	M-Bus slave for Landis+Gyr E350 electricity meter

## TECHNICAL SPECIFICATIONS

### Mechanics

Protection class	IP20
Mounting	In Landis+Gyr E350 meter

### Electrical connections

Supply voltage	From M-Bus
Rate inputs	Screw terminal. Cable 0.25-1.5 mm <sup>2</sup> , 0.5 Nm tightening torque
Connection M-Bus	Screw terminal. Cable 0.25-1.5 mm <sup>2</sup> , 0.5 Nm tightening torque

### Electrical characteristics

Nominal voltage	21-42 VDC, independent of wiring polarity
Installation category	CAT 4, CAT 3 for rate inputs
Unit loads	1T/1.5 mA
Rate input low voltage	<24 VAC
Rate input high voltage	>24 VAC
Rate input max voltage	230 VAC
Rate input minimum detection time	5 s

### User interface

Green LED	Communication with meter
Red LED	Error
Push Button	Breaker functionality

### M-Bus slave interface

M-Bus baud rate	300 and 2400 bit/s
Addressing modes	Primary, secondary
M-Bus information	All OBIS fields from meter

### Integration

Meter implementation	Landis+Gyr E350
Maximum number of connected meters	1

### Approvals

EMC	EN 61000-6-2, EN 61000-6-3
Safety	EN 61010-1, CAT 4

## CONTACT INFORMATION

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EU DECLARATION OF CONFORMITY	
This declaration of conformity is issued under the sole responsibility of the manufacturer: Elvaco AB, Kabelgatan 2T, S-43437 Kungälv, Sweden	
Product CMi1020	Year of CE-marking 2016
The object(s) of the declaration listed above is in conformity with the relevant Community harmonization legislation: LVD Directive 2014/35/EU EMC Directive 2014/30/EU RoHS 2011/65/EU	
And are in conformity with the following harmonization standards or other normative documents: IEC 61010-1 (ed.3) EN55022 (Radiated emission) EN 61000-4-6 (Immunity to HF-injection) EN 61000-4-3 (Immunity to RF-field) EN 61000-4-11 (Immunity to voltage variation) EN 61000-4-4 (Immunity to burst) EN 61000-4-5 (Immunity to surge) EN 61000-4-2 (Immunity to ESD)	
Kungälv, Sweden, 2016-04-16	
	
David Vonasek, CEO	