



Figure 1. Energy Actuator

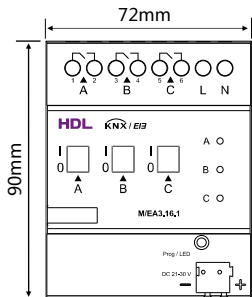


Figure 2. Dimensions - Front View

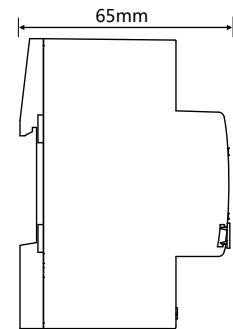


Figure 3. Dimensions - Side View

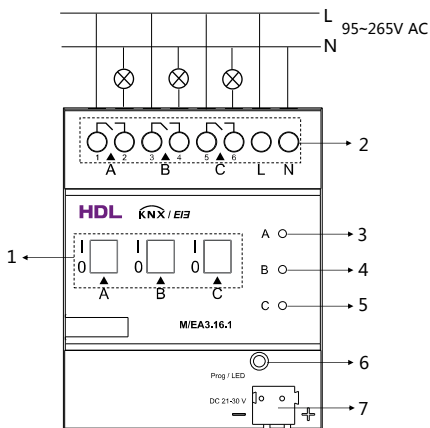


Figure 4. Wiring

## Overview

Energy Actuator (See Figure 1) is a switch actuator that records the energy consumption of the connected electrical loads. The Energy Actuator records the active energy consumption per switching output channel. Furthermore, it calculates the total consumption of all three outputs and the maximum load current per output is 16 A.

For each channel, the active power, current and voltage as well as further electrical variables (apparent power, crest factor, power factor and frequency) can be measured.

Energy Actuator can be used as master or slave devices with master-slave load management functions, and each master device can manage 10 slave devices. The electrical loads connected to the three floating switch outputs can be switched via KNX or manually directly on the device.

The main function includes:

- Enable to measure 3 channels in single phase, and supports 3CH relay control
- Enable to measure: Active energy, current, voltage, frequency, active power, apparent power, power factor. The threshold values of current, voltage and active power can be set.
- Meter total: as a sum of the channel meters
- Connects external current transformer
- Value sending methods: Send after a change, send cyclically, send on request
- Supports Inter-metering, Threshold values monitoring, Load master / slave control, Energy saving, Active power overflow function
- Supports threshold values setting. When the value is beyond the threshold value, an alarm can be sent and a channel can be disconnected below or above the threshold (16A)
- The total channel can be used as the mater load channel to control the slave load channel, up to 10 slave load channels can be controlled, and the load threshold value can be set by the external target.

## Components

Dimensions - See Figure 2 - 3

Wiring - See Figure 4

1. Switch position display and manual operation
2. Load circuits, fire line and neutral conductor (N)
3. Indicator of Channel A
4. Indicator of Channel B
5. Indicator of Channel C
6. Programming button & LED indicator
7. KNX interface

## Installation

Installation - See Figure 5 - 7

Step 1. Fix the DIN rail with screws.

Step 2. Buckle the bottom cap of the Energy Actuator on the edge of the DIN rail.

Step 3. Press the device on the DIN rail, slide it and fix it up until an appropriate position is adjusted.

## Note(s)

- Installation - Distribution box
- Programming - The device is compliant with the KNX standard and the parameters are set by the Engineering Tool Software (ETS).
- KNX Bus voltage - 21~30V DC, no AC power supply allowed

## Safety Precautions

- The installation and commissioning of the device must be carried out by HDL or the organization designated by HDL. For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- The device should be installed with DIN rail in DB box. HDL does not take responsibility for all the consequences caused by installation and wire connection that are not in accordance with this document.
- Please do not privately disassemble the device or change components, otherwise it may cause mechanical failure, electric shock, fire or body injury.
- Please resort to our customer service department or designated agencies for maintenance service. The warranty is not applicable for the product fault caused by private disassembly.

## Package Contents

M/EA3.16.1\*1 / Label\*5 / Datasheet\*1



Figure 5

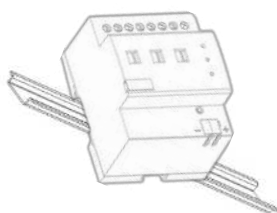


Figure 6

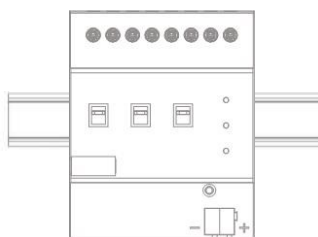


Figure 7

Figure 5 - 7. Installation

## Technical Data

### Basic Parameters

Working voltage	21~30V DC
Working current	16mA/30V DC
Measuring range of voltage	95~265V AC
Measuring range of current	0.02~16A
Measuring range of frequency	45~65Hz
Communication	KNX/EIB
Cable diameter of KNX terminal	0.6 – 0.8mm

### External Environment

Working temperature	-5°C~45°C
Working relative humidity	≤90%
Storage temperature	-20°C~60°C
Storage relative humidity	≤93%

### Specifications

Dimensions	72mm×90mm×65mm
Net weight	255g
Housing material	Nylon
Installation	35mm DIN rail installation (See Figure 5 - 7)
Protection rating (Compliant with EN 60529)	IP20

### Name and Content of Hazardous Substances in Products

Components	Hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr (VI))	Poly-brominated biphenyls (PBB)	Poly-brominated diphenyl ethers (PBDE)
Plastic	o	o	o	o	o	o
Hardware	o	o	o	o	-	-
Screw	o	o	o	x	-	-
Solder	x	o	o	o	-	-
PCB	x	o	o	o	o	o
IC	o	o	o	o	x	x

The symbol “-” indicates that the hazardous substance is not contained.

The symbol “o” indicates that the content of the hazardous substances in all the homogeneous materials of the component is below the limit requirement specified in the Standard IEC62321-2015.

The symbol “x” indicates that the content of the hazardous substance in at least one of the homogeneous materials of the part exceeds the limit requirement specified in the Standard IEC62321-2015.

## KNX Cable Guide

KNX	KNX cable
-	Black
+	Red

Technical support  
E-mail: support@hdlautomation.com  
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