ELM – Electronic Locking & Monitoring

Data centers store so much valuable and confidential data that server racks are the main industrial users of Electronic Access Control.

EMKA's system is scalable up to about 500 doors per network.

The flexibility allows a cost effective security/convenience balance

Temperature, humidity, power, etc sensing can be incorporated

Easy integration into building management systems if required

ELM - Electronic Locking System

ELMcontrol

Configuration, Operation, Supervision

LAN

Communication unit

Locking systems

Handles, latches

Sensors

Temperature, Humidity, Smoke,

Keypad

Card reader

Alarms

Door contacts

Why Electronic Access Control?

Technical reasons:

Security, Convenience and Control / Management

Commercial reasons:

To prove to its customers its commitment to security

To show its commitment to security to its employees

To demonstrate due diligence regarding Sarbanes-Oxley, HIPAA, PCI, etc.

To keep track of maintenance

Security

Security comprises Obstacles & Deterrence

Obstacles

- Password – must know this
- Prox Card – must have this
- Operation Center – must identify

Deterrence

- Real time monitoring
- Audit trail
- Alarms

Security

Two Factor Authentication (T-FA)

Factors

What you Know – pass code (PIN)

What you Are – Fingerprint, Retina, DNA

What you Have – Prox card

Any two of the three above are regarded as “Strong” security

The most economical way to achieve “Strong” security is to require a prox card to enter the data center and a PIN to open a rack.

Conventional Security

- Simple keys - better than nothing.
- If one goes missing. Is it lost, stolen or copied?
  - Do we hope for the best, or re-key affected locks? A major key control issue.
- What happens when an employee leaves?

Master key system

- Good convenience, especially for a co-location center.
- **BUT** What happens if a master key is goes missing?
  - Major dilemma. If the cost of changing a lock is $50 and there are 500 locks to be changed?
- Keys
  - leave no trail
  - can be (easily) copied,
  - many are left lying around.

Deterrence

Real Time Monitoring – Status of every door is on screen

- **Audit trail – It can easily be determined who was in the rack last, at what time, and for how long**

- **Alarm – This can be set to trigger when a door is opened or when a door is opened without authorization**
  - SNMP traps are sent
  - Txt message
  - Email
  - Contacts are closed

Questions

What happens if the power fails?

- This is a fail-safe system, the doors do not open.
- Handles are available with or without hidden key override – alarm can be set to trigger in this event
- Some water cooled cabinets require automatic door opening in the event of overheating – this can be achieved

Integration

Isolation is more secure, integration more convenient

1. **Taking 12 V signal from existing building system and using that to trigger handles**

2. **Use EMKA Database software (or similar) to translate to SQL**

3. **Using ELM software sending SNMP traps to building Management software for alarms**

Access

1. **Keypad – simple, easy to manage, secure**
   1. **Up to 100 users per system or**
   2. **Up to 5 users per door**
   3. **1 Million codes**
   4. **T-FA "Strong Security"**
2. **Prox. Reader – easy to manage, secure**
   1. **Unlimited number of users**
   2. **Cards are difficult to copy.**
   3. **Not as secure**

Monitoring

- **Real Time Monitoring – Status of every door is on screen**
- **Audit trail – Archived to terminal**
- **Alarm – This can be set to trigger when a door is opened or when a door is opened without authorization**

Features 4

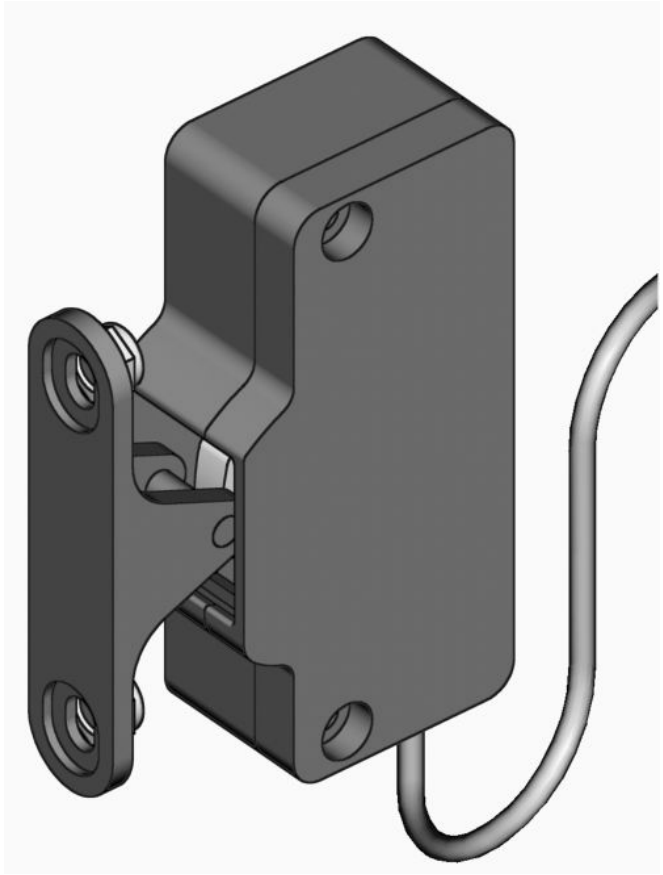
- **Door status - locked/unlocked**
  check, control and operate (up to 512 doors)
- **Temperature, humidity, …**
  watch, control (up to 256 sensors)
- **Fans / air-condition**
  switch on/off (up to 256 outputs),
- **Easy hook-up to Management Systems (standard communication protocol SNMP)**

BOX Modules
(Initial Equipment), Expansion, Retrofit

- **single modules with housing**
- **all types of control and sensor module available**
- **economical solution for expanding 19“ racks**
- **external power supply**

Single Point Latch

- Ideal locking system for universal retrofit of existing cabinets from various suppliers
- Locking force 1000 N (225#)
- Integrated reed contact
- Locked when not energized
- 3 m connection cable



Single Point Latch for Special Applications

- Locking of rack doors with gasket or for water cooled cabinets with emergency opening
- 4500 N (1,000 #) holding force per
- Opens under load up to 110 N (25
- Integrated reed contact
- Locked when not energized
- 3 m connection cable

3000-SU30

Single Point Latch Application

Combination handle with keypad

- Integrated Keypad
- Reed contact to indicate lock status
- Keypad can open multiple doors
- Uses 2100 handle series cut out

Keypad Module

- Door selection and authorization for the system (up to 512 doors)
- Several keypads connectable in one system
- 3m (10‘) CAN-Bus conecting cable with RJ11 plug

Environment Sensor for Temperature and Humidity

- **Humidity and temperature measurement and control**
- **Measuring range humidity:**

  0…100%, ± 3,5%
- **Measuring range temperature:**

  -20 to +80°C, ± 0.5C @ 25°C
- **2m connecting cable with plug can be connected directly to the 19” rack**

Optical Smoke Detector

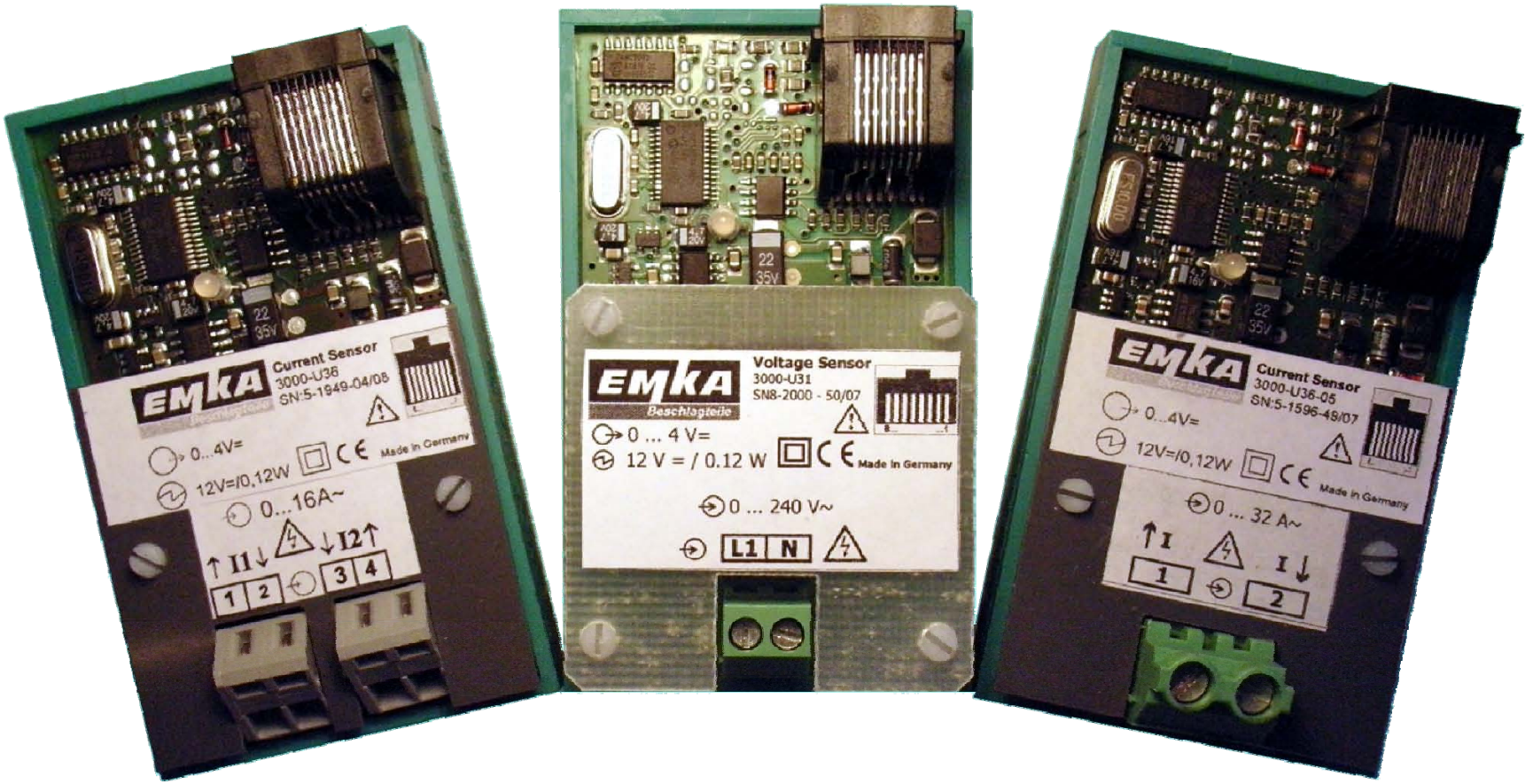
- VdS approval G 29129
- 3m connecting cable
- Power on control
- Wire break control

Analog Temperature Sensor

- Measure temperature in liquids and gases
- Measuring range:

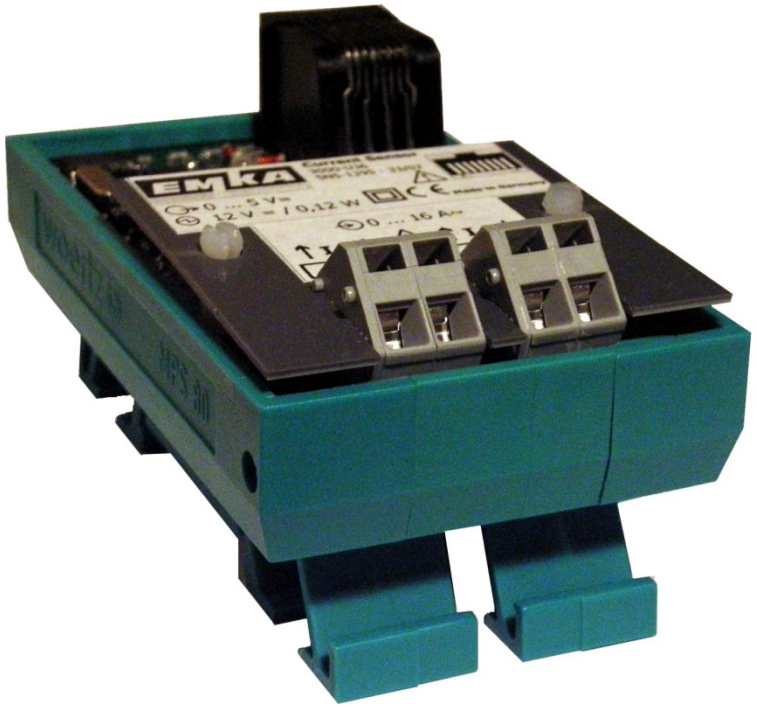
  -50…+150°C, error < 2%
- 2m connecting with plug
  can be connected directly to the 19” rack
- Stainless steel housing for universal mounting

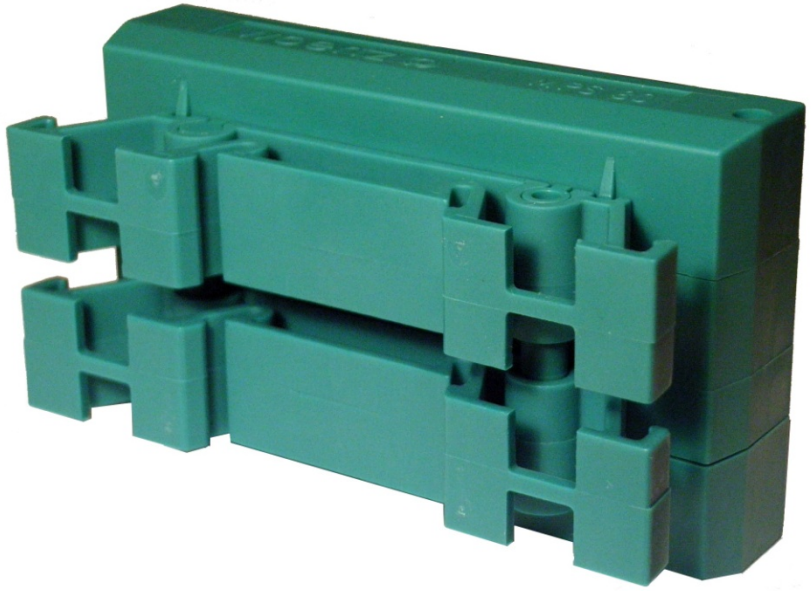
Current & Voltage Sensors



Current & Voltage Sensors

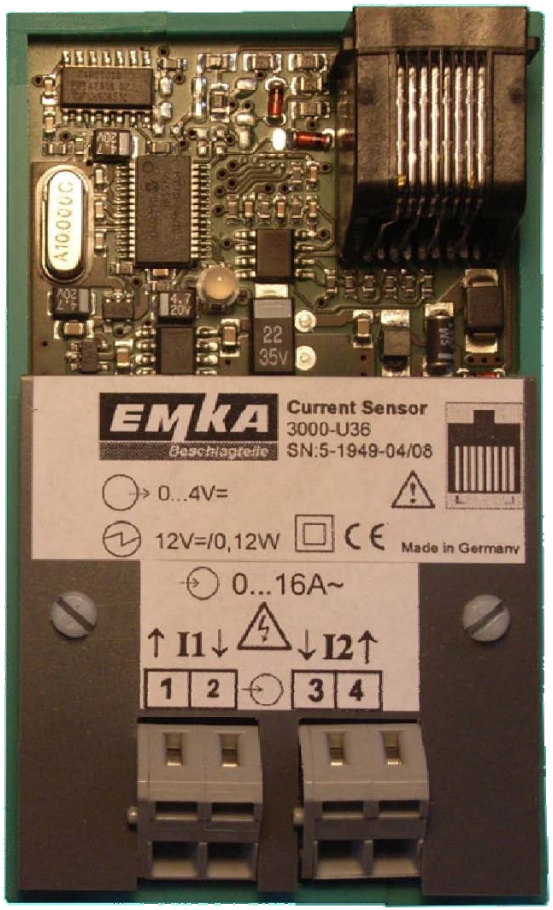
- **for DIN rail (top hat rail) mounting**





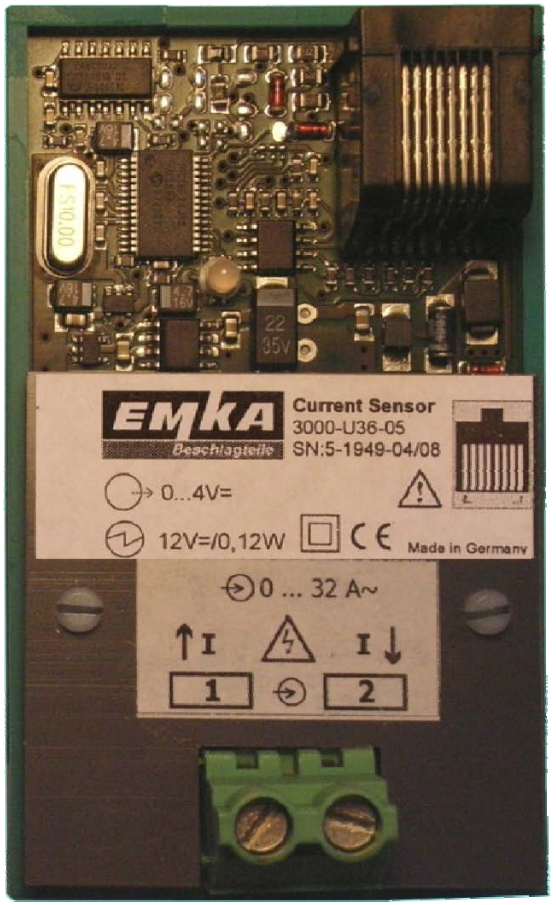
Current sensor 3000-U36

- Measuring current consumption in server racks
- Measuring range
  2 x 0 … 16 A AC
- Output signal
  0 … 4 V DC
- Output signal connector
  RJ 45
- Adapter cable RJ 45 socket <> open wire strands or Phoenix plug 3000-U37



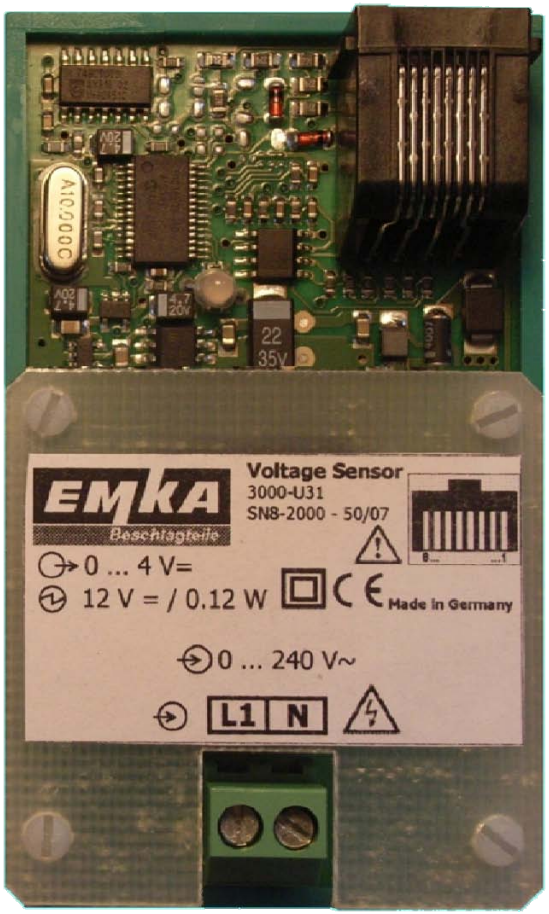
Current sensor 3000-U36-05

- Measuring current consumption in server racks
- Measuring range
  0 … 32 A AC
- Output signal
  0 … 4 V DC
- Output signal connector
  RJ 45
- Adapter cable RJ 45 socket <> open wire strands or Phoenix plug 3000-U37



Voltage sensor 3000-U31

- Measuring supply voltage in server racks
- Measuring range
  0 … 240 V AC
- Output signal
  0 … 4 V DC
- Output signal connector
  RJ 45
- Adapter cable RJ 45 socket <> open wire strands or Phoenix plug 3000-U37



LCD digital indicator 3000-U80-xxxxx

- Local display of sensor values
  (current, voltage, temperature, humidity, …)
- 3 ½ digit display (max. 1999)
- Connection in parallel to sensor
- Pre configured ex factory
- Very compact design

Analog Voltage Control Sensor

- Measuring mains available voltage
- Connectable to sensor module
- Output voltage
  0…5 V DC
- Measuring range
  100 … 260V; 47- 63 Hz AC
- Cable length 3m (with plug)