

**M2M Control C450 Professional**



[www.m2m-controls.com](http://www.m2m-controls.com)



## M2M Control C450 Professional



### The C450 is a powerful M2M Platform with IP67 housing !

- powerful 32-Bit ARM7 processor platform
- comprehensive memory resources  
for data logging and application – up to 8 MB and a microSD card (2 GB)
- IEC 61131-3 programming environment  
comprehensive function library, multitasking, firmware upload over the air (FOTA)
- wide and universal I/O interface  
digital and analog I/O, S0 ... and I/O extension modules
- versatile interfaces and powerful protocols  
RS-232, RS-485, 1-wire, MODBUS, M-Bus and a 868 MHz IFM RF transceiver
- open WAN connectivity  
TCP/IP, GPRS/EDGE
- internal battery backup & power management
- **Enclosure with IP67 protection**  
for use in rugged environments



# M2M Control C450 Professional

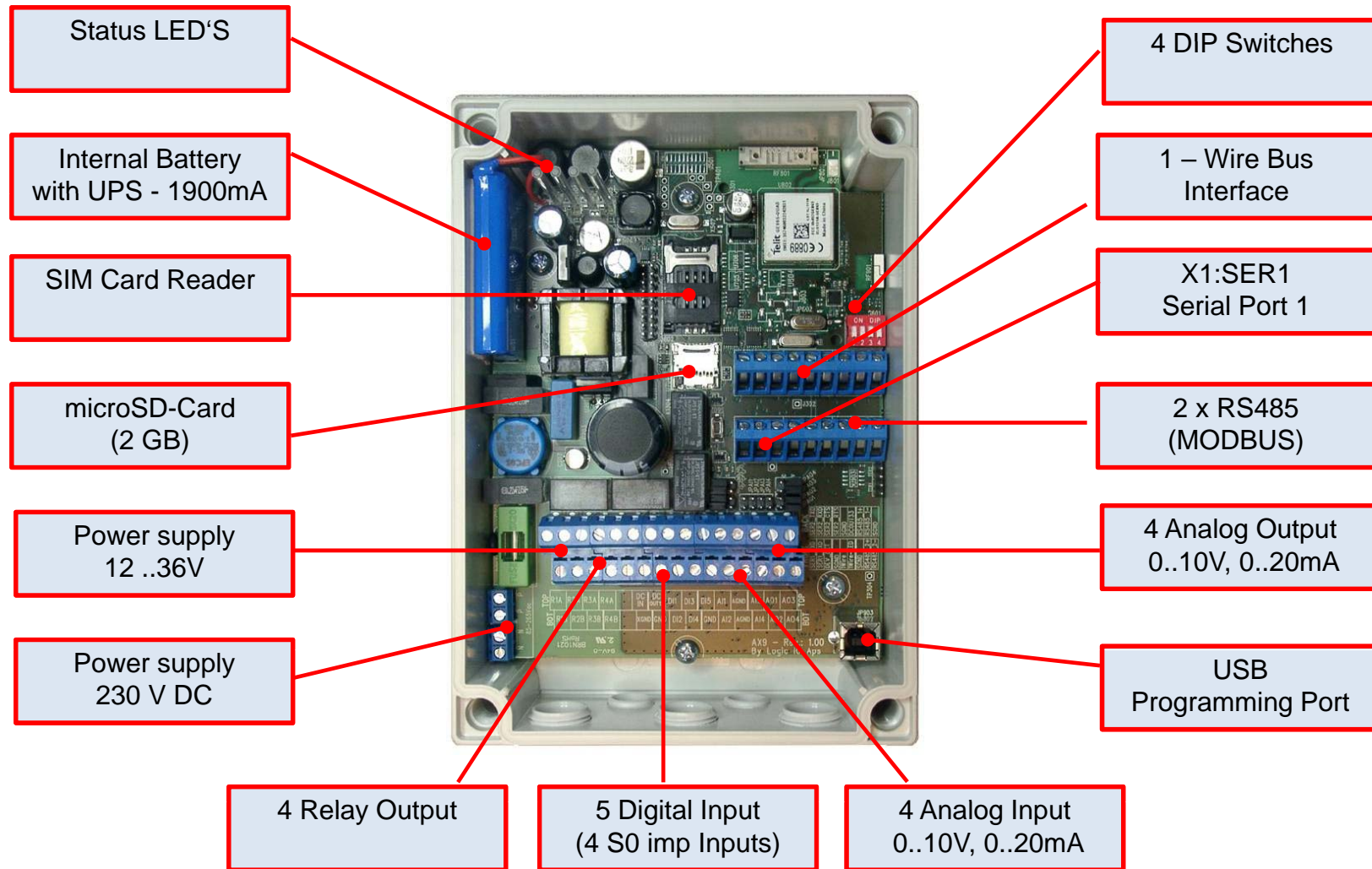


## Typical Applications

- Silo & Tank monitoring
- Pump control
- Greenhouse monitoring & control
- Irrigation control
- Street-Lighting
- Weather-Stations & Environmental monitoring
- monitoring of photovoltaic systems
- Metering & Power measurement and analysis



## M2M Control C450



## M2M Control C350 – I/O Controller



**5 Digital Inputs (opt. S0)**  
*Low: -5 ..3V High: 5V..40V*

**4 Relay Outputs**  
*230V 5A*

**1-Wire Bus Interface**

**4 DIP Switches**



**4 Analog Inputs**  
*0..10V, 0..20mA (10 Bit)*

**RS485 (MODBUS I/O)**

**4 Analog Outputs**  
*0..10V, 0..20mA (10 Bit)*

**Expandable with Modbus modules**



16 DO



16 DI



8 AI





## M2M Control C450 – Data Logging & Memory

### Data-Logging & Parameter

**SD-Card with FAT Filesystem**  
(2 GB)

**512 KB Dataflash**  
for data logger and parameters  
(optional 8 MB)

**512 KB internal Flashdrive**  
with FAT Filesystem



**internal Battery (1900mA)**  
UPS and energy management

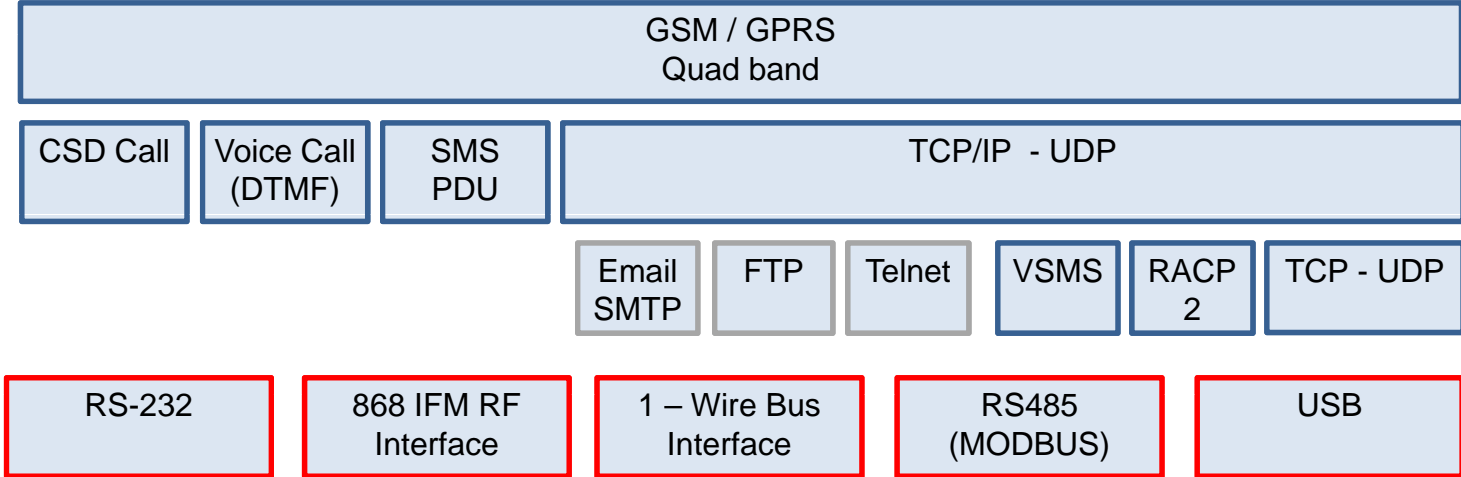
### Application

**1 MB RAM**  
(opt. 2 MB)

**2 MB Flash**  
for application and voice  
(optional 8 MB)

**8 KB FRAM**  
for fast memory access

## M2M Control C450 - Communication



## M2M Control C450 - Programming Environment



- **IEC 61131-3 (structured Text)**
- standard programming language in automation and controls (-> PLC's)  
Pascal like; easy to learn; flexible and powerful
- **Integrated Development Environment (IDE)**  
PC based tool; includes : project management, editor, compiler, debugger, simulator
- **Syntax Highlighting Editor**  
Code Wizard, extensive help functions
- **Debugger & Simulator**
- **Multi-Tasking**
- **Voice messages**
- **Comprehensive Documentation and Examples**
- **Remote access and firmware download over the air (FOTA)**

```
PROGRAM Send_SMS;
// The next code will only be executed once after the program starts
// Controls power to the GSM module

gsmPower(power := ON);

BEGIN
// Code from this point until END will be executed repeatedly
Connected := gsmConnected();

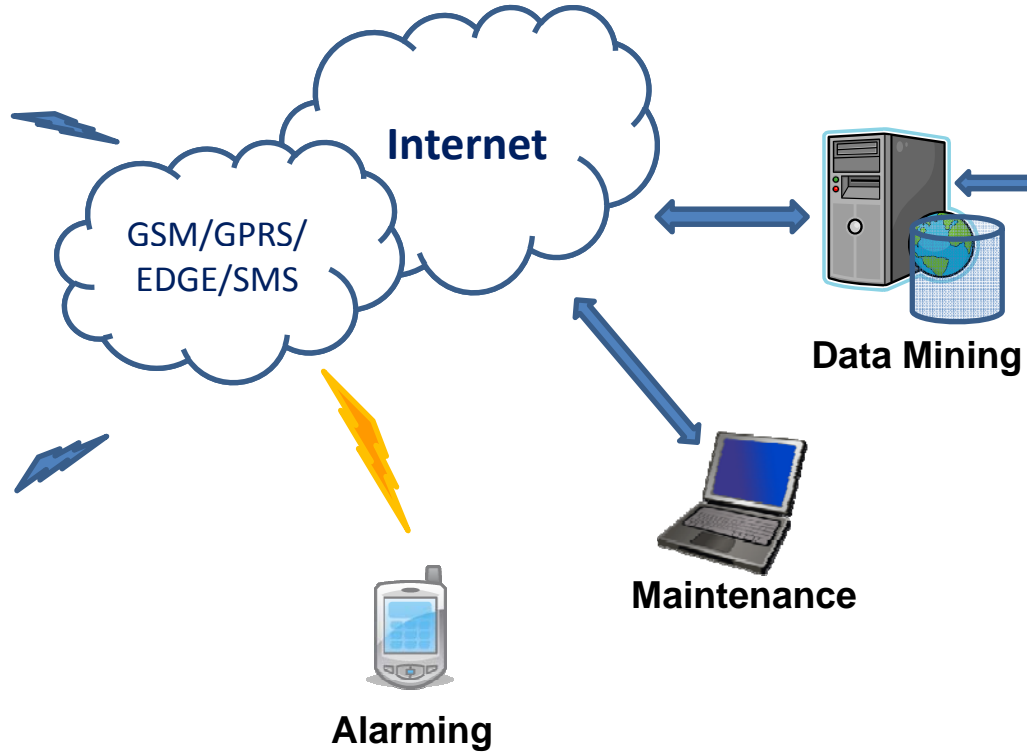
IF input THEN
edge_no := edge_no + 1;
// Send an SMS message
message_to_send:=strFormat(format:="\1 leading edges detected",
v1:=edge_no);
gsmSendSMS(phonenummer:="+49 1234 5678",
message:=message_to_send);
END_IF;
END;

END_PROGRAM;
```



# M2M Networking

# M2M Control



Administration



Supervision

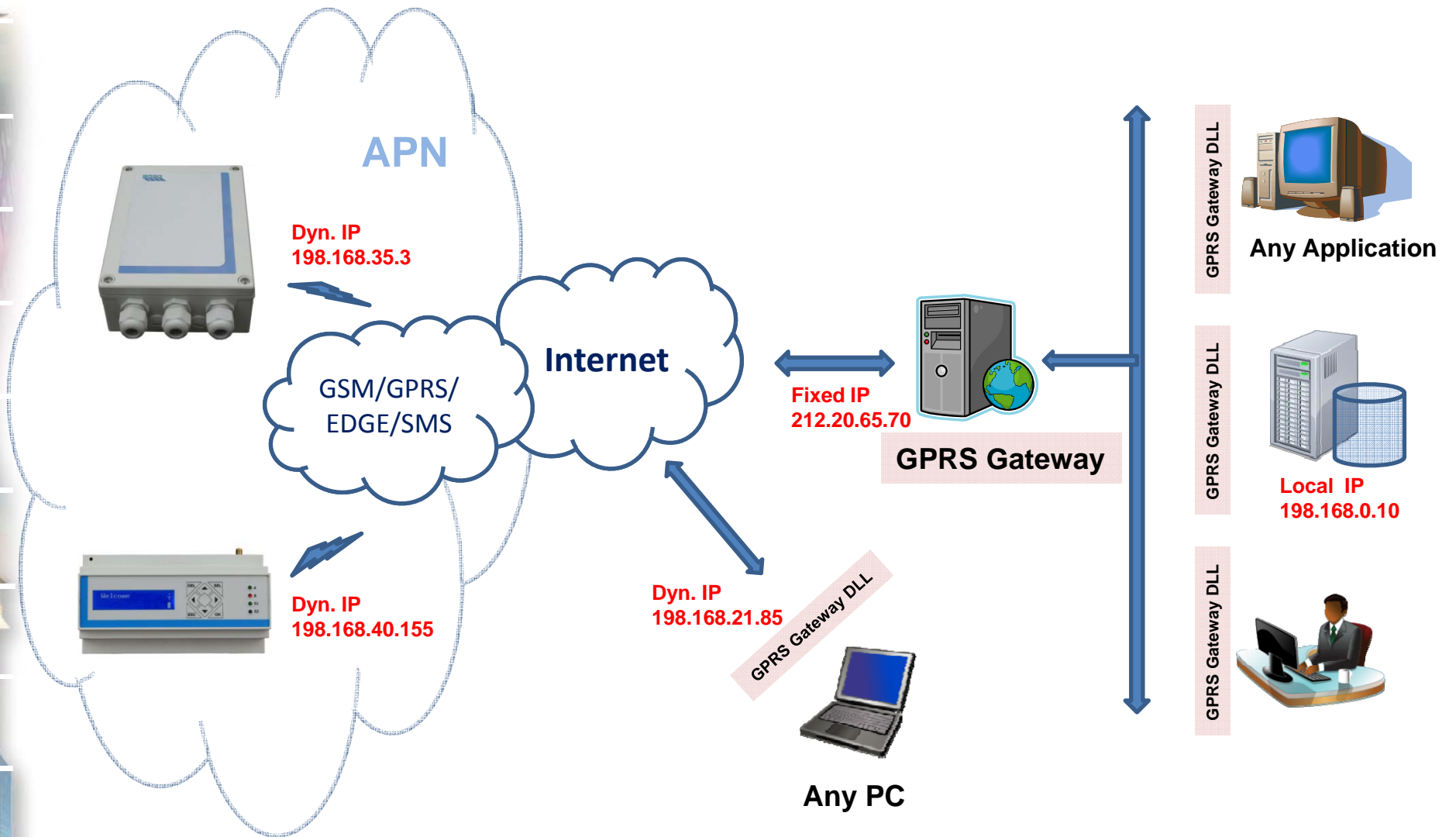


Analysis



Reporting

# M2M GPRS Gateway



## M2M Control C450 - Accessories



- **MODBUS I/O Modules**  
divers I/O interfaces; fully transparent to the application; excellent value
- **VGA Camera**  
taking color pictures in standard JPEG format
- **1-Wire Temperature Sensor**  
excellent value
- **1-Wire ID Button Reader**  
Identification; Access Control
- **Antennas**

