M2M SQL Connector - a Turnkey Solution

Data Acquisition  Data Logging  Transmission  SQL Database

Acquiring data from the field level to a SQL database
M2M Data Management

5 Steps:

1. **Data Acquisition – Measurements**
   sensors, meters, …
   analog, digital, serial, bus

2. **Data Processing**
   data conditioning, computing, calculations …
   IEC 61131-3

3. **Data Logging**
   local & real time storage …
   flash, FRAM, SD-Card

4. **Transmission**
   secure data transmission …
   GSM / GPRS / TCP/IP

5. **Storage**
   central data storage …
   SQL Database
M2M Data Management

5 Steps:

1. **Data Acquisition – Measurements**
   sensors, meters, … analog, digital, serial, bus

2. **Data Processing**
   data conditioning, computing, calculations … IEC 61131-3

3. **Data Logging**
   local & real time storage … flash, FRAM, SD-Card

4. **Transmission**
   secure data transmission … GSM / GPRS / TCP/IP

5. **Storage**
   central data storage … SQL Database
Energy-Data-Acquisition

S0 digital Inputs
DIN 43864
IEC62053-31

Analog Input
0..10V / 0..20 mA

M-Bus
DIN EN 13757

MODBUS
(RTU)

RS-232
RS-485

Power Quality Analysis

www.m2m-controls.de
by Infranet Technologies GmbH
Energy-Data-Acquisition

S0 digital Inputs
DIN 43864
IEC62053-31

M-Bus
DIN EN 13757

CAN Bus
ISO 11898

MODBUS
(RTU)

Power Quality Analysis

www.m2m-controls.de

by Infranet Technologies GmbH
Pump Monitoring & Control

- **S0 digital Inputs**
  - DIN 43864
  - IEC62053-31

- **Digital Output**

- **Digital Input**

- **Analog Input**
  - 0..10V / 0..20 mA

www.m2m-controls.de

by Infranet Technologies GmbH
M2M Data Management

Data Acquisition

Data Logging

Transmission

Storage

S0 Input, M-Bus, MODBUS, CAN, analog Input

512 KB / 8MB Dataflash
internal Datalogger

512 KB / 8MB int. Flashdrive
with FAT Filesystem

SD-Card 2 GB
FAT Filesystem, CSV Files

GSM / GPRS

Email, FTP, VSMS, TCP/IP, UDP

SQL Database

www.m2m-controls.de

by Infranet Technologies GmbH
M2M Data Management

Energy Data Acquisition
Data logging
Transmission
Storage/Database

GSM/GPRS
Internet

SQL

Data Mining

Administration
Supervision
Analysis
Reporting

www.m2m-controls.de

by Infranet Technologies GmbH
Backend Applications

SQL Database

Your business ....

Any Application

Reporting / SQL Tools
DreamReport, Crystal Reports ...

Web - Portal

www.m2m-controls.de

by Infranet Technologies GmbH
Business Intelligence Tools

SQL Database
CSV Files
XML ....
Web-Portal

SQL Database
CSV Files
XML ....

www.m2m-controls.de
by Infranet Technologies GmbH
Data-Acquisition - Solution

Data Acquisition - Data logging - Transmission - Storage

C350 / C450 - GPRS Gateway - SQL Server

www.m2m-controls.de by Infranet Technologies GmbH
Suited Modules

C350
- Display
- SD-Card
- CAN Bus
- Battery 1900 mAh

C310
- price optimized model
- Battery 700 mAh

C450
- IP67 Housing
- MicroSD-Card
- Battery 1900 mAh
- 24V und 230V Power Supply

www.m2m-controls.de
by Infranet Technologies GmbH
Data Acquisition

**Summery**

- M2M Control modules offer manifold interfaces to acquire energy data
  - S0 Inputs, M-Bus, MODBUS, RS-485, CAN, analog inputs
- M2M Control modules have powerful data logging facilities
  - Internal data logger, internal flash file system, SD-Card with FAT file system (up to 2 GB)
- M2M Control modules are power fail safe
  - Internal battery with charger, UPS functionality, power management
- M2M Control modules offer a secure GSM / GPRS based communication
  - TCP/IP, encryption, authentication, dynamic and fixed IP addresses
    - Multiple services to transmit energy data
      - SMS, Email FTP, XML, SQL
    - **Writing data directly to a hosted based SQL data bases**
      - MySQL, MS SQL
- M2M Control modules providing a powerful data processing by
  - An IEC 6113-31 based programming environment
    - Comprehensive function library, multitasking, firmware upload over the air (FOTA)
Infranet Technologies GmbH
Tempowerkring 2
21079 Hamburg – Germany

Phone    +49 40 696 47 – 260
Telefax   +49 40 696 47 – 259

info@infranet-technologies.com