New type of Modems for Mitsubishi PLCs

Preliminary Information for European Mitsubishi Branches and Distributors

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Due to the rising demand for telemetric solutions Mitsubishi Electric Europe decided to offer a telemetric solution in 2Q/2005. It's based on a new product line of intelligent and standard industry modems. The modems come in a DIN-rail housing and connect to a Mitsubishi PLC via RS232 (RS485). Several Mitsubishi PLC-Protocols are supported: Alpha XL, MELSEC FX series from the beginning and System Q will follow. Target is to connect the modems to all Mitsubishi automation products.

The functions of the intelligent Modems, called Mitsubishi Alarm Modem (MAM), are configured via the easy to use Alarm Editor Software "MX Alarm Modem Editor".

Alarm Messaging via SMS, Fax, Email
Send alarm messages to service personnel in the event of a malfunction.
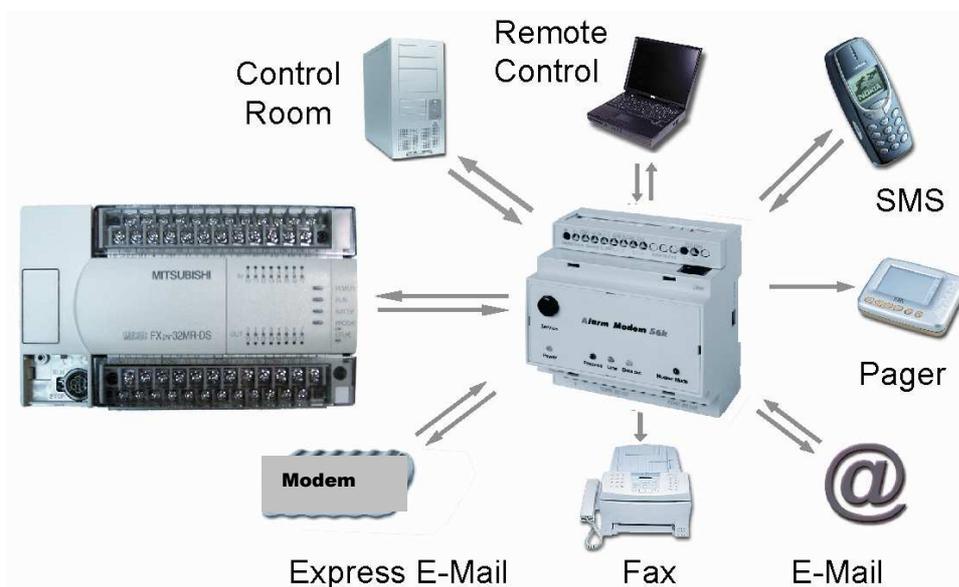Optional: alarming schedule

Tele-Switching via SMS and Email
Switching of PLC outputs and markers via SMS and by dial-in.
Optional: password protection

Remote Maintenance via Modem or GSM
of the PLC and Alarm Modem
Optional: password protection

Alarm Modem Summary

Alarming

Fault message reports may be sent to any recipient via SMS, fax or email independently of the program in the PLC. Such alarm events are triggered by PLC variables or input ports on the PLC as the Alarm Modem is permanently monitoring the relevant PLC variables or inputs.

The message texts may contain many actual values from the PLC and may be of any length when using fax and email.

Features

- 6 - 20 addresses in an address book (each address may have: SMS, email, fax, Express, pager entry)
- 6 - 20 predefined messages with variables
- 6 - 20 PLC variables can be monitored
- 6 - 20 definable alarm events

It's possible to expand the alarm features to **100** each when using the "MX Alarm Modem Editor **Pro**" software.
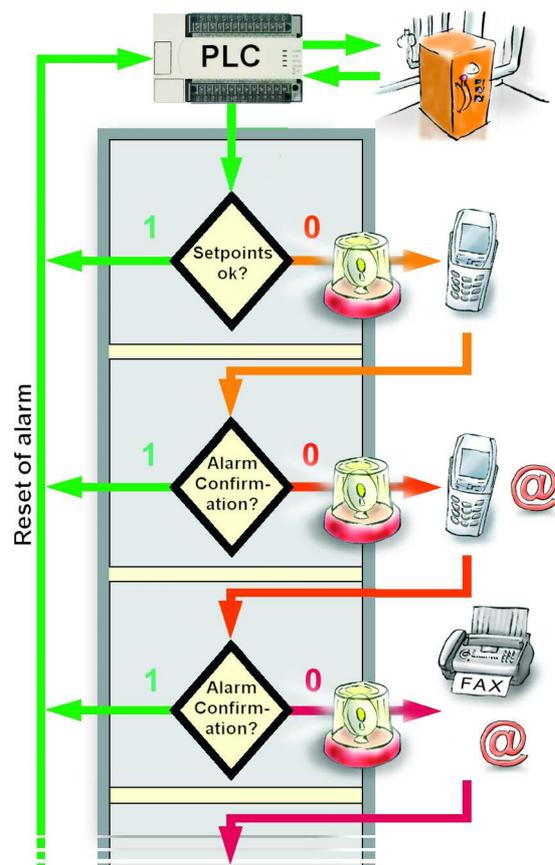
Tele-Switching via SMS and Email

A short command sent via SMS or Email may switch outputs of a connected PLC or write to PLC variables. The successful execution of the command may be acknowledged in a return SMS or EMail.

4 - 20 SMS or Email switch commands with optional parameters and optional passwords can be defined.

Alarming Schedule - the multi-level alarm plan

Up to 3 freely definable alarm levels may be configured.

Example:

The Mitsubishi Alarm Modem monitors the variables and ports in a PLC.

Alarm Level 1:

In the event of a fault being detected, MAM sends an SMS to service technician A.

If this person acknowledges receipt within a predefined time (e.g. 10 minutes), MAM resets the alarm.

Alarm Level 2

If MAM does not receive the acknowledgment within the pre-defined time, it starts alarm level 2 and sends several messages to other destinations:

- An SMS to service technician B,
- a fax to the service center,
- an email to the owner of the installation and to the archiving data base on the web.

Alarm Level 3

If technician B does not acknowledge receipt within a defined time, MAM initiates the next alarm level.

Remote maintenance

The modem allows the programming software of the PLCs, e.g. AL-PCS/Win, GX IEC Developer or GX Developer, to be used for remotely accessing the PLCs via analog modem or GSM-modem as if the PC was directly connected via RS 232 to the PLC. Program upload and monitoring variables and changing variables is possible.

SECURITY is given top priority since unauthorized dial-in attempts are prevented by means of a login procedure with user name and password (all remote dial-ins and dial-in attempts are logged in non-volatile memory).

Modem Models

1.   Mitsubishi Alarm Modem M6   56k / GSM   est. LP: 380€ / 480€

Intelligent modem for **Alpha XL**
- for remote configuration of a connected Mitsubishi Alpha XL
- **6** Alarms on digital PLC input ports via SMS, Email or Fax
- Remote switching of **4** output ports via SMS or incoming call
- 2 Alarm levels
- 2 MB user memory

Intelligent modem for **MELSEC FX Series**
- for remote configuration of a connected Mitsubishi MELSEC FX PLC
- **6** Alarms triggered by PLC variables (markers) via SMS, Email or Fax
- Remote switching of **4** MELSEC FX markers via SMS or incoming call
- 2 Alarm levels
- 2 MB user memory

2.   Mitsubishi Alarm Modem M20   56k / GSM   est. LP: 480€ / 580€

Intelligent modem for **Alpha XL**
- for remote configuration of a connected Mitsubishi Alpha XL
- **20** Alarms on digital PLC input ports via SMS, Email or Fax
- Remote switching of **20** output ports via SMS or incoming call
- 3 Alarm levels
- 2 MB user memory (max. 66 MB)

Intelligent modem for **MELSEC FX Series**
- for remote configuration of a connected Mitsubishi MELSEC FX PLC
- **20** Alarms triggered by PLC variables (markers) via SMS, Email or Fax
- Remote switching of **20** MELSEC FX markers via SMS or incoming call
- 3 Alarm levels
- 2 MB user memory (max. 66 MB)

3.   Mitsubishi Alarm Modem M24   56k / GSM   est. LP: 500€ / 600€

Same as M20 versions, but with a RS485 interface to connect the modem to a network.

Mitsubishi Electric Europe will also offer standard 56k and GSM modems:

4.   Mitsubishi Industrial Modems   56k / GSM   est. LP: 190€ / 295€
- Standard modem
- for remote configuration of a Mitsubishi PLC
- Simple SMS send function (Alpha XL + GSM model only)
- No user memory
- No intelligent functions

Modem Overview

Intelligent Alarm Modem

Code	Model Code	Analog/ GSM	Ports	PLC Protocol	Alarms/ switching	PLC-remote	Flash Memory	Software
Alarm Modem M6	MAM-AM6 MAM-GM6	analog GSM	1 x RS232	yes	6/4	yes	2 MB	MX Alarm Modem Editor
Alarm Modem M20	MAM -AM20 MAM -GM20	analog GSM	2 x RS232	yes	20/20	yes	2 MB	MX Alarm Modem Editor
Alarm Modem M24	MAM -AM24 MAM -GM24	analog GSM	1 x RS232 1 x RS485	yes	20/20	yes	2 MB	MX Alarm Modem Editor

Mitsubishi PLCs supported by intelligent alarm modems
- Alpha XL
- MELSEC FX1S, FX1N, FX2N, FX2NC (, FX3U)
- MELSEC System Q (MC24 protocol) under preparation

Features for : Alpha XL and **MELSEC FX**

- Alarm messaging (SMS, Email, Fax)
- Alarm cascade (2-3 levels)
- Remote switching of PLC outputs (CLIP: 2 numbers, SMS)
- Remote configuration of PLC
- Variables and ports for messaging (6/4, 20/20)
- Password protection for local and remote configuration.
- Further options, like data logging function could also be offered in the future.

Standard Industrial Modem

Code	Model Code	Analog/ GSM	Ports	PLC Protocol	Alarms/ recipient	PLC- remote	Flash Memory	Software
Standard Modem	MIM-A01 MIM-G01	analog GSM	1 x RS232	-	-	yes	-	MX Configurator MIM

Software "MX Alarm Modem Editor" for Alarm Modem (MAM) configuration and software "MX Configurator MIM" for MIM setting.

MX Alarm Modem Editor is a simple to use input and administration tool for editing alarm notifications with PLC variables (markers and I/O-ports) for Mitsubishi PLCs. MX Alarm Modem Editor can be used for remote configuration of Alarm Modem with optional password-protection. All entries are stored in a project file (XML) which is loaded into the Mitsubishi Alarm Modem locally via RS232 or remotely via a dial up modem connection.

MX Configurator MIM is a simple to use modem configuration software without using AT commands.

Code	Model Code	Price	Contacts/ Messages	Alarms/ switching	Description
MX Mitsubishi Alarm Editor Pro	MX-MAE-M100	240€	100/100	100/100	MX Mitsubishi Alarm Editor Pro Configuration software for the professional user, recommended for: Mitsubishi Alarm Modems **M20, M24**
MX Mitsubishi Alarm Editor	MX-MAE-M6	50€	6/6	6/4	MX Mitsubishi Alarm Editor Recommended software for: Mitsubishi Alarm Modems **M6**
MX Mitsubishi Alarm Editor Lite	MX-MAE-M1	free	1/1	1/1	MX Mitsubishi Alarm Editor Lite Free demo version for Mitsubishi Alarm Modems **M6, M20, M24**

Preliminary sample pictures of the MX Alarm Modem Editor: