

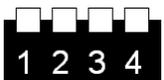
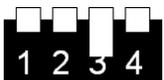
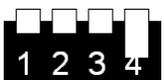
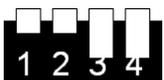
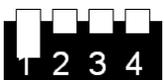
Power supply

FM// is remotely powered at 12V (300mA) by means of the FD-BUS cables connected to the respective RJ45 connectors (1) (2) or by means of the special extractable screw block (3).
When FM// is powered through the AWG24 wires of the FD-BUS, the voltage drop on the wires limits the maximum reachable distance as shown in the following table:

Wire type			Distance from the power supply in function of the load [m]					
AWG	mm ²	Ohm/Km	100mA	200mA	500mA	1A	2A	5A
24	0,2	85	118	59	24	12	6	2

Functioning mode

The FM// DIP-switch is used to set the functioning and/or switch-off modes:

	<p>FM with common backbone mode (DEFAULT) or UltraMax with 1 serial & 1 C&D reader FD-BUS-A + FD-BUS-B (COM0), RS232 (COM1), READER1 (COM2), READER2 (C&D). { DEFAULT setting} While set in this way, FM// is still able to switch to the other modes by means of a software configurable internal registry.</p>
	<p>FM with double backbone mode or UltraMax with 2 C&D readers emulation mode FD-BUS-A (COM0), FD-BUS-B (COM2), RS232(COM1), READER1 (C&D), READER2 (C&D)</p>
	<p>UltraMax with 1 serial & 1 C&D reader emulation mode READER0 (COM0), READER1 (C&D), RS232 (COM1), RS485 on FD-BUS-B (COM2)</p>
	<p>UltraMax with 2 serial readers emulation mode READER0 (COM0), READER1 (COM1), RS485 on FD-BUS-B (COM2)</p>
	<p>Linux controlled switch-off To perform the Linux controlled switch-off you just have to low down the first DIP-switch lever and wait until the central LED turns red still on (shutdown completed).</p>

Internal jumpers

Inside FM// there are 2 normally closed jumpers (on J19 and J18), which activate the 120ohm line terminators on the FD-BUS-A e FD-BUS-B RS485 backbones.
The quintuple jumper (on P21) allows to transfer the remote power supply from FD-BUS-A to FD-BUS-B. By removing this jumper, the FD-BUS-B RS485 will result totally floating.
The FD-BUS-B RS485 is internally powered (by means of an insulated DC/DC), thus it doesn't need to apply an external power supply to work.



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FM // FM-BA01

Control Unit for the Xatlas system



Hardware features

CPU & Memory:

- AM3517 (CORTEX A8), 600MHz, 256MB Flash + 256MB SDRam

Operating system:

- Linux

Settings and visual indications:

- Reset button
- 4 bit DIP-switch to set the functioning mode
- 5 bicolor LEDs:
Power supply – red still ON: device powered
Ethernet - OFF: cable disconnected; red blinking: detected network activity; red still ON: uplink with no network activity
Status - OFF: FM // running; red still ON: halt / power off command
RS-485 A – OFF: RS485 not configured; red still ON: cabling problems;
Green blinking: polling / transmission; red blinking: receiving from field device;
RS-485 B - just like as RS-485 A but for the other backbone

Connections:

- 2 USB host ports;
- 2 RJ45 ports for FD-BUS (RS485+power supply)
- 1 RJ45 port for Ethernet 10/100 (IP default: 192.168.1.100)
- 1 RJ45 port for serial RS232
- (optional, by means of a special board) 4in (opto / dry contacts)+ 4out (relays), double reader

Power supply:

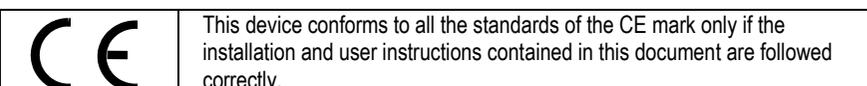
- 8..14Vdc. The power adapter must be of SELV type, separated by parts subjected to dangerous voltage by means of a safety transformer, and its output must be protected from short circuits and overloads (2A max). Consumption: 350 / 500 / 1000mA@12Vdc (min / typical / max)

Physical data:

- Casing: ABS for DIN bar (9 units), Size: 156 x 85 x 57mm (W x H x D) Weight: 150 g

Environment:

- Temperature range: Working: -10°..+50° Storage: -25°..+55° Humidity: 0-100%
Warning: the internal NiMh batteries should not exceed 50°C – See "Important Note" on the back



Anti-Tampering

FM// is intended to be used in a limited access location, and is provided with an anti-tampering function. This can be achieved by connecting the special tamper input to a normally closed contact to be mounted on the door of the cabinet which hosts the FM itself, or by means of the internal light sensor (photocell) which can be used to activate the tampering alarm upon light detection. To activate the photocell you must remove the jumper.

FD-BUS connectors signals

Each FD-BUS RJ45 connector provides the following signals:

FD-BUS-A		FD-BUS-B With jumpers on P21		FD-BUS-B Without jumpers on P21	
PIN	SIGNAL	PIN	SIGNAL	PIN	SIGNAL
1	GND	1	GND	1	Float GND-REF
2	GND	2	GND	2	Float GND-REF
3	RS485+ A	3	RS485+ B	3	RS485+ B
4	RS485- A	4	RS485- B	4	RS485- B
5	GND	5	GND	5	Float GND-REF
6	AC_PRESENT	6	AC_PRESENT	6	-
7	+ 12V	7	+ 12V	7	-
8	+ 12V	8	+ 12V	8	-

AC_PRESENT is a 3-states signal, produced by the power supplies of the *Xatlas* system, which provides the power supply status:

AC_PRES = 0V	→ low battery: beginning shutdown
AC_PRES = 5V	→ on battery
AC_PRES = 12V	→ main AC power supplied

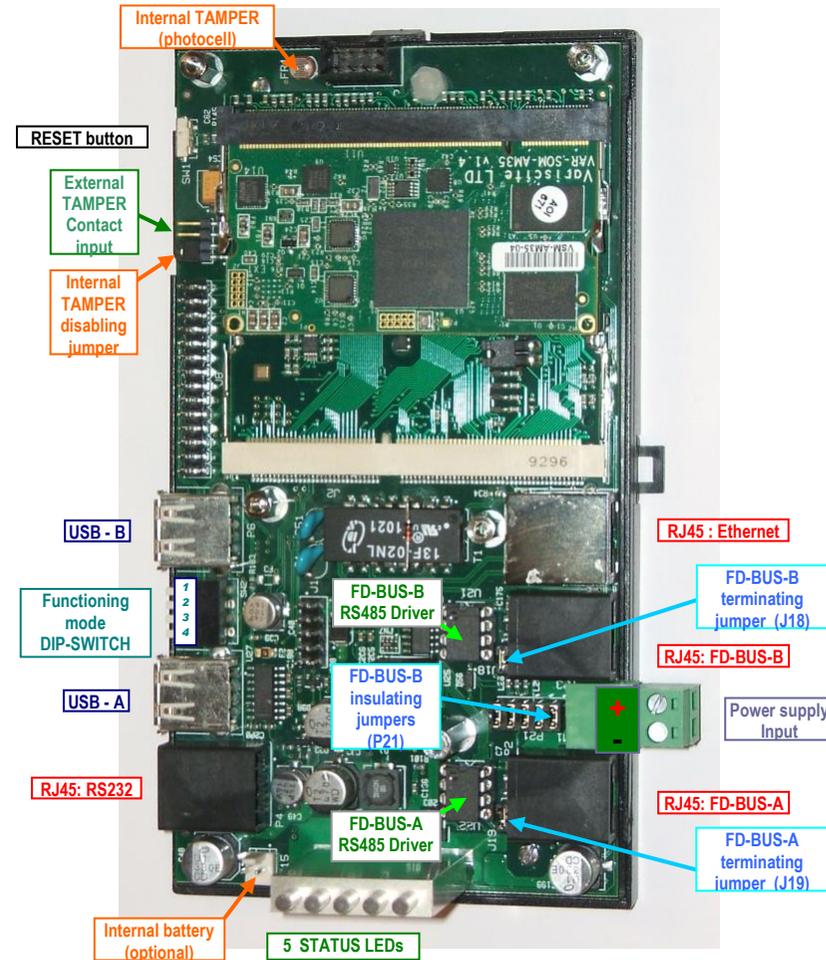
RS232 connector signals

The RS232 RJ45 connector provides the following signals at EIA +10V/-10V levels:

RS232	
PIN	SIGNAL
1	Cable shield
2	RXD
3	TXD
4	DTR
5	Signals ground
6	DSR
7	RTS
8	CTS

FM // FM-BA0x

Parts identification



Network parameters setting

The easiest way to perform the network parameters setting is to connect via Ethernet directly to PC, with any straight or crossed UTP cable: FM // is supplied with the factory IP 192.168.1.100. By means of the Putty client (available at the <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html> address for free) you can connect to FM // in SSH, perform the login by using user=`root` and password=`axs`, and then send the following configuration command:

```
net_save_cfg IP NETMASK GATEWAY HOSTNAME
```

where you should specify, in their order: new FM // IP address; subnet mask; gateway; FM // unique network name. By confirming the entered string, the new parameters immediately become effective. To verify the entered parameters you can use the following command: `ifconfig`