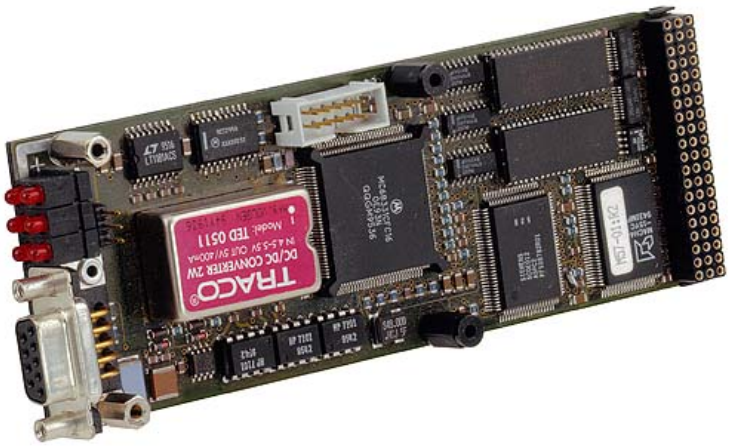
M57 – Profibus DP Master Interface

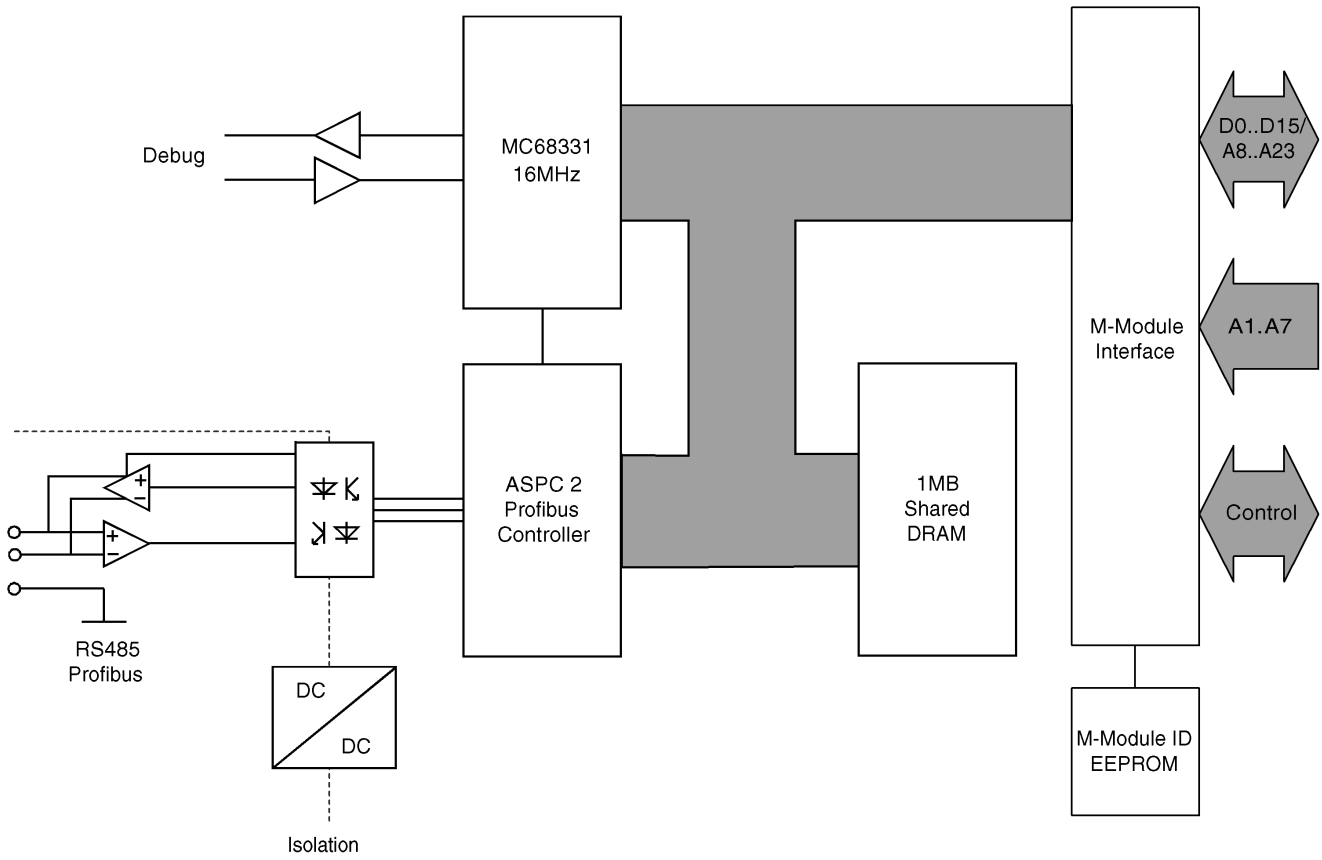
- **Class 1/2 Profibus DP master (DIN19245)**
- **Isolated RS485, RS232 (debug) interface**
- **Local 32-bit CPU**
- **Up to 127 active or passive stations**
- **12 Mbit/s data transfer rate**
- **1 MB DRAM**
- **Complete Softing Profibus software on board**
- **Compatible with PROFIBUS DP Configurator**



The M57 is a Profibus DP (Distributed Peripherals) interface. The M-Module is based on the ASPC 2 controller and the 16-MHz Motorola MC68331 CPU. It is an ideal interface solution for intelligent remote I/O applications via a very popular fieldbus standard.
The ASPC 2 is an advanced Profibus controller allowing 127 stations with 254 SAPs (Service Access Points) each. It allows data transfer rates of up to 12 Mbaud on the M57.
The mezzanine card MC68331 is a 68020-based CPU which handles communication with the host CPU via the on-board 1 MB of shared DRAM. The advantage of this Profibus application using the MC68331 is that the complete Profibus protocol stack runs locally on the M-Module with very reduced interaction of the host CPU.

The Profibus firmware consists of the true Softing protocol stack. The corresponding driver software comes from MEN and complies with the standard Softing PROFIBUS DP Configurator tool. It supports configuration of the M57 for each application in a very convenient way.
The driver is based on MDIS (MEN Driver Interface System) which makes the M57 ready for use under Windows®, Linux and RTOS environments.
The optically isolated RS485 Profibus interface is supplied by an on-board DC/DC converter.
The M57 is based on the M-Module ANSI mezzanine standard. It can be used as an I/O extension in any type of bus system, i.e. CPCI, VME or on any type of stand-alone SBC. Appropriate M-Module carrier cards in 3U, 6U and other formats are available from MEN or other manufacturers.

Diagram


Debug
MC68331
16MHz
D0..D15/
A8..A23
M-Module
Interface
A1..A7
ASPC 2
Profibus
Controller
1MB
Shared
DRAM
Control
RS485
Profibus
DC
DC
M-Module ID
EEPROM
Isolation

Technical Data

MC68331/16MHz CPU	■ CPU32 performance ■ Complete Profibus DP software on one M-Module ■ Local interrupt controller ■ Hardware watchdog
ASPC 2 Profibus Controller	■ Up to 12Mbaud data rate ■ 16-bit DMA interface (local) ■ Complete bus access protocol ■ Up to 127 active or passive stations
Miscellaneous	■ 1MB shared memory for communication and program ■ Fast M-Module interface with autoincrement address mode ■ Status LEDs ■ Isolated Profibus interface
Peripheral Connections	■ Via front panel on a shielded 9-pin D-Sub receptacle connector
M-Module Characteristics	■ A08, A24, D16, INTA, IDENT
Electrical Specifications	■ Isolation voltage: 500V DC ■ Supply voltage/power consumption: +5V (4.85V..5.25V), 800mA typ. ■ MTBF: 45,000h @ 50°C (derived from MIL-HDBK-217F)
Mechanical Specifications	■ Dimensions: conforming to M-Module Standard ■ Weight: 92g
Environmental Specifications	■ Temperature range (operation): □ 0..+60°C □ Industrial temperature range on request □ Airflow: min. 10m³/h ■ Temperature range (storage): -40..+85°C ■ Relative humidity range (operation): max. 95% non-condensing ■ Relative humidity range (storage): max. 95% non-condensing ■ Altitude: -300m to + 3,000m ■ Shock: 15g/11ms ■ Bump: 10g/16ms ■ Vibration (sinusoidal): 2g/10..150Hz ■ Conformal coating on request
Safety	■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
EMC	■ Tested according to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst)
Software Support	■ Softing protocol portation (ISO/OSI protocol layer 2/DP) ■ MEN Driver Interface System (MDIS for Windows®, Linux, VxWorks®, QNX®, OS-9®)

Ordering Information

Standard M57 Models	**04M057-00**	Profibus DP interface, 0..+60°C
Miscellaneous Accessories	**05M000-17**	25 mounting screw sets to fix M-Modules on carrier boards
Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	13M057-06	MDIS5 low-level driver sources (MEN) for M57 and P6
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13M057-70	MDIS4/2004 / MDIS5 Windows® driver (MEN) for M57 and P6
Software: VxWorks®	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M057-06	MDIS5 low-level driver sources (MEN) for M57 and P6
Software: QNX®	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M057-06	MDIS5 low-level driver sources (MEN) for M57 and P6
Software: OS-9®	This product is designed to work under OS-9®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13M057-06	MDIS5 low-level driver sources (MEN) for M57 and P6
Software: Miscellaneous	For use of the MDIS4 driver you also need the Softing PROFIBUS DP Configurator tool. You will find more information on this tool and a demo version at www.softing.de.	

For operating systems not mentioned here contact MEN sales.

Documentation	Compare Chart fieldbus M-Modules » Download	
	20M000-00	M-Module Draft Specification, Rev. 3.0
	20M057-00	M57 User Manual

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