PAC system MSX-Box
for the PCI bus

- **Open and transparent Programmable Automation Controller system**
- **With free development tools**
- **Live DVD based on open source programs**
- **Real-time measurement system**

PAC systems

Programmable Automation Controller

PAC systems are mainly used for industrial measurement and control or regulation tasks as well as for motion control.

They execute several tasks simultaneously and in a deterministic way.

Core features of a PAC system:

- **Compact and robust design**
- **Programmable**
- **Standard Ethernet (TCP/IP)**
- **CPU board as system controller**
- **Different I/O modules**

Set course for freedom

Experience with the MSX-Box what freedom of decision-making really means:

- **You** select the components of your PAC system: The MSX-Box is based only on reliable standard technologies like for example PCI backplane. Freedom also means that you can use any of the numerous standard PCI I/O boards.

- **You** decide, whether and when to update your operating system: Using the real-time operating system Linux with RTAI extension, no need to take care of updates. Save time and money!

- **You** have free access to the software down to the kernel source code: You can make extensive system adaptations and realize your own optimized measurement system.
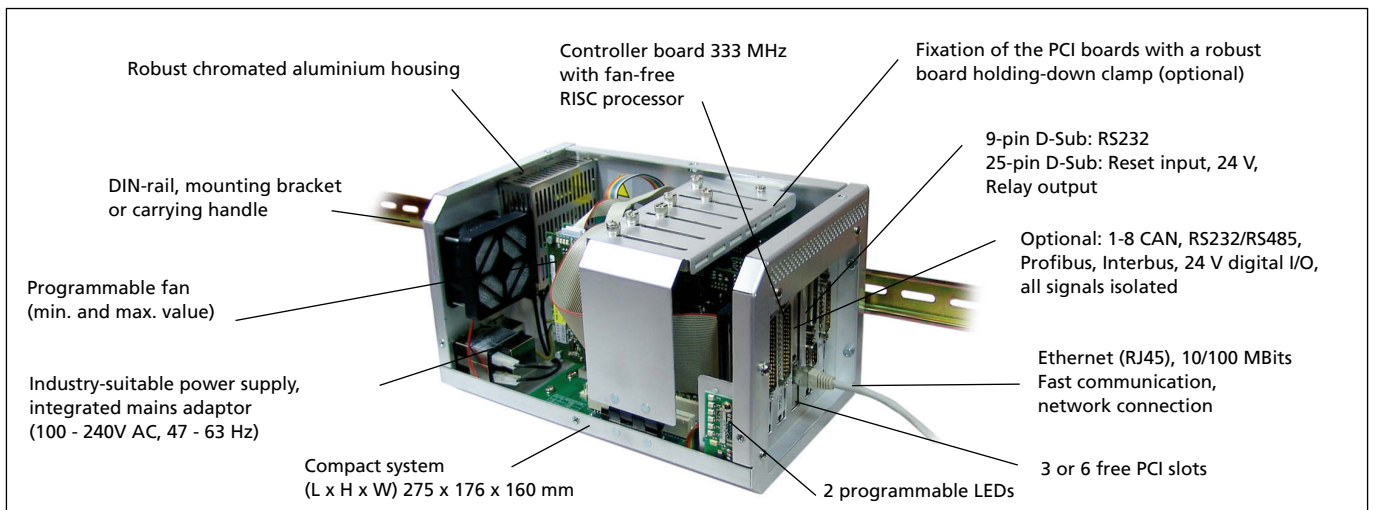
Boost your applications

Working with the MSX-Box that fits to your needs will boost your measurement and control applications.
The MSX-Box is supplied with development tools: You can realize even very complex tasks quite easily.

The most important advantage of a PAC system with such a transparent structure is that in case of emergency, you can react fast and efficiently.

Thanks to the long-term ADDI-DATA supply philosophy, you secure your investments for a long time.
Furthermore, the fact that the MSX-Box is supplied with free development tools limits the purchase price for serial equipment.

Experience today how to realize your applications of tomorrow:
www.msx-box.com

Robust chromated aluminium housing

Controller board 333 MHz with fan-free RISC processor

Fixation of the PCI boards with a robust board holding-down clamp (optional)

9-pin D-Sub: RS232
25-pin D-Sub: Reset input, 24 V, Relay output

DIN-rail, mounting bracket or carrying handle

Optional: 1-8 CAN, RS232/RS485, Profibus, Interbus, 24 V digital I/O, all signals isolated

Programmable fan (min. and max. value)

Ethernet (RJ45), 10/100 MBits Fast communication, network connection

Industry-suitable power supply, integrated mains adaptor (100 - 240V AC, 47 - 63 Hz)

Compact system (L x H x W) 275 x 176 x 160 mm

2 programmable LEDs

3 or 6 free PCI slots

Phone: +49 7229 1847-0   info@addi-data.com
Fax: +49 7229 1847-222   www.addi-data.com

ADDI-DATA
SPIRIT OF EXCELLENCE

MSX-Box-500

PCI controller board

RISC processor:	64-bit MIPs, no fan
Clock:	333 MHz
Memory:	16 MB flash, 128 MB SDRAM, Option up to 256 MB
Installed OS:	Embedded RTAI Linux
Standard interfaces:	D-Sub 9-pin: 1 x RS232
	D-Sub 25-pin: Reset input 24 V; „H" active
	1 x relay output, free prog.,
	closing contact
Optional:	D-Sub 25-pin.: 1-8 CAN, Master/Slave, isolated
	1 x RS232/RS485, isolated
	additional bracket:
	1 x Profibus/Slave, isolated
	2 x Interbus/Master, isolated
	4 x dig. input, 24 V/10 mA, isolated
	3 x dig. output, 24 V/200 mA, isolated
Dimensions:	PCI half-size board

Mains supply unit

Input voltage:	100 V - 240 V, AC, 47-63 Hz (other voltage on request)
Output voltage:	5 VDC-40 W (max. 6 A) (other voltage on request)
Protection against:	Short circuit; overload, overvoltage
Connection:	2 m power cable

ATX backplane with 5 PCI slots

PCI slots:	Total amount:	5
	Reserved:	1 x PCI controller board
		1 x PCI Ethernet board
	Free:	for 3 additional PCI half-size boards
Compliance:	PCI specification PICMG rev. 2.1.	

MSX-Box-800

Same as MSX-Box-500 with 8 PCI slots on the ATX backplane, incl. 6 free slots for PCI I/O boards

Mains supply unit

Input voltage:	100 V - 240 V, AC, 47-63 Hz (other voltage on request)
Output voltage:	5 VDC/12 VDC/60 W (max. 6A)
Protection against:	Short circuit; overload, overvoltage
Connection:	2 m power cable

ATX backplane with 8 PCI slots

PCI slots:	Total amount:	8
	Reserved:	1 x PCI controller board
		1 x PCI Ethernet board
	Free:	for 6 additional PCI half-size boards
Compliance:	PCI specification PICMG rev. 2.1.	

For MSX-Box-500 and MSX-Box-800

PCI Ethernet board (RJ45)

Data transfer rate:	10/100 MBits

Extensive software support

Free development tools (GNU Compiler, Cygwin, samples in source code), Knoppix Live DVD development environment

Housing

Material:	Chromated aluminium, colour RAL 5010 blue „Enzianblau"
Heat dissipation:	Through programmable fan
Temperature range:	0 - 50°C
Temperature monitoring:	Configuration at delivery 5 °C to 45 °C, min. and max. value programmable through software. The temperature value can be monitored. Resolution: 0.5 °C
Front openings:	For 5 PCI-boards and 1 bracket (MSX-Box-500)
	For 8 PCI-boards and 3 brackets (MSX-Box-800)
Housing dimensions	278 x 170 x 165 mm (MSX-Box-500)
(L x H x W):	292 x 170 x 292 mm (MSX-Box-800)
Weight:	approx. 2 kg (standard MSX-Box system) MSX-Box-500
	approx. 3 kg (standard MSX-Box system) MSX-Box-800
Status display:	5 LEDs, incl. 2 freely programmable

Optional accessories

Board fixation:	Board holding-down clamp
Mounting possibilities:	• DIN rail
	• Removable mounting bracket
	• Carrying handle
Cable:	2 m Ethernet patch cable, shielded, RJ45 connector (PC ↔ MSX-Box)
Network card: MSX-ComboCard with additional functions:	• 2 x PCI FireWire IEEE 1394, 1 x internal, 1 x ext. connection, data transfer rate up to 400 Mbps
	• 2 x PCI USB 2.0, 2 external, 1 x internal connection,
	• 1 x RJ-45 LAN, 10/100 Mbps connection
	• 1 x 5-pin female connector, 12 V
	• Network card PCI 10/100 Mbps, 10Base-T, 100Base-TX, IEEE802.3, 802.3 u protocol, recognition of data transfer rate 10 Mbps or 100 Mbps, data transfer rate 10 Mbps and 100 Mbps, Chipset REaltek RTL8139,
	• 32-bit PCI system
	• 5 V voltage
Colours:	Other housing colours (according to RAL scale) and inscriptions (on request)

Ordering information

MSX-Box: PAC system, incl. development tools (GNU compiler, Cygwin, source code samples, ...) and technical description

Versions
MSX-Box 500: 5 PCI slots (incl. 2 slots reserved for controller and Ethernet board; 3 free PCI slots for half-size boards)
MSX-Box 800: 8 PCI slots (incl. 2 slots reserved for controller and Ethernet board; 6 free PCI slots for half-size boards)

Options
MSX-256MB: Memory extension up to 256 MB
MSX-485/ MSX-232: 1-port serial interface, RS485 or RS232, optically isolated
MSX-Basis: Basic equipment for options MSX-CAN, MSX-Profibus, MSX-IBS and MSX-DIO-IO
MSX-CAN-x: 1/2/4/8 x CAN bus, master/slave, optically isolated
MSX-Profibus: 1 x Profibus, slave
   FB-Profibus: 9-pin D-Sub female connector for the option MSX-Box Profibus (please order separately)
MSX-IBS-x: 1/2 x Interbus-S, master
MSX-DIG-IO: 4 digital inputs and 3 digital outputs, 24 V.
All extensions are isolated and include a ribbon cable with a 9-pin D-Sub male connector with bracket
MSX-RTSYNC: for the synchronisation of several MSX-boxes (with time stamp)

Accessories
MSX-CLAMP-500/-800: Board holding-down clamp for board fixation
MSX-SCREW: Wall mounting for MSX-Box-500
MSX-SCREW-800: Wall mounting for MSX-Box-800
MSX-RAILDIN: DIN rail mounting
MSX-GRIP: Carrying handle
MSX-COMBOCARD: Network card LAN / USB /Firewire connection
MSX-COMBOGIGA: Network card Giga LAN /USB /Firewire connection
MSX-500-PS-12V/-24V: Mains power supply unit 12 V DC or 24 V DC
ST ETH-2: Ethernet patch cable 2 m, shielded, RJ45, between PC and MSX-Box
MSX-CBLRS232: RS232 cable, 1.5 m – 9-pin.
On request: Other housing colour or inscriptions on the front side