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A Sonepar Company

MSC-ME-ZB

MSC-ME-MS

MSC-ZB-RS


MSC-PS-MS

MSC

MASIBUS SMART CONVERTER

MSC-PS-MS : Profibus DP Slave to Modbus RTU Master
MSC-ME-MS : Modbus Serial to Modbus Ethernet
MSC-ME-ZB : Modbus ZigBee to Modbus Ethernet
MSC-ZB-RS : ZigBee Wireless to RS485 Serial (ZigBee Adapter)

The Masibus Smart Converter series addresses a market segment that sets the focus on cost savings & space saving compact design. The economic design combined with its Master-Slave conversions makes MSC an attractive gateway/converters in terms of price, universality and flexibility.

This MSC family converts two industrial protocols simply and efficiently into each other. Be it a simple serial RS485 bus, Ethernet, classic Profibus or Wireless-ZigBee, MSC provides a common platform for a transparent conversion of automation protocols. It smoothly integrates into the existing field networks in Plant with both wired and wireless network standards.

MSC is configured and diagnosed by a dedicated configuration tool (MSC Studio)

MSC Converter design combines the two network interfaces on a DIN-rail & Wall mount housing. LED indicators reveal the status information for Power & Bus Communication. The protocol conversions are pre-programmed and loaded as dedicated firmware into the device.

Masibus ZigBee adapter delivers wireless connectivity to electronic devices through advanced mesh network. It provides wireless connectivity to replacing existing wired RS485 network of the sensors, controllers and other Serial devices. It works both as a Router and a Co-ordinator/Aggregator/Master.

Features

MSC-PS-MS

- Integrates multiple Modbus RTU slaves into Single Profibus Network
- Fast cyclic data communication between Master and Slave
- Supports up to 100 commands or 512 Read & Write Registers on MODBUS
- Diagnostic and configuration via RS232
- Maximum of 244 bytes cyclic input and output data on Profibus DP Slave

MSC-ME-MS

- Supports max upto 64 Modbus RTU Slave devices on RS485
- No of RS485 Ports (Modbus RTU Master): 2 (Only one active at a time)
- Modbus TCP/IP (ModNet) - 10/100Mbps- auto-detecting
- No. of Client supports on Modbus TCP/IP (ModNet) – Up to 15
- Supports upto 192 commands or 2048 Read/1024 Write Registers on MODBUS

MSC-ME-ZB

- Supports upto 64 Modbus RTU Slave devices on RS485 & ZigBee
- Number of Master Ports (Modbus RTU): 1 RS485 (Wired) & 1 ZigBee (Wireless) - Only one active at a time
- ZigBee Topology: Point-Point/Point-Multipoint/Mesh
- Modbus TCP/IP (ModNet) - 10/100Mbps- auto-detecting
- No. of Client supports on Modbus TCP/IP (ModNet) – Up to 15
- Supports up to 192 commands or 2048 Read/1024 Write Registers on MODBUS

MSC-ZB-RS

- Number of Ports: 1 RS485 (Wired) & 1 ZigBee (Wireless)
- ZigBee Topology: Point-Point/Point-Multipoint/Mesh
- Router/Co-ordinator/Aggregator/Master/Slave configuration through MSC studio
- MSC-ZB-RS (Router/Slave) can connect to MSC-ME-ZB or MSC-ZB-RS (Co-ordinator/Master)
- Wireless range extension possible through router

Applications

- Data sharing between PLC, DCS, Controllers, Inverters and other network devices
- Operator Interfaces
- Industrial / Factory / Process/Building Automation
- Intelligent Field Sensors and Actuators Communication
- Solar String / Environmental Monitoring

TECHNICAL SPECIFICATIONS FOR MSC-PS-MS

General	
Communication controller Type	ARM 926EJ-S / 200 MHz / MMU
Configuration Port	RS232 For Diagnostic and Configuration
Master Communication	RS485 (optically isolated) Modbus RTU
Configuration Software	mPC Tool (Supports Windows OS)

PROFIBUS DP Slave Value	
I/O	Maximum of 244 bytes cyclic input and 244 bytes output data
Transmission Rate	9.6 to 12 Mbps
Connector	D-Sub female connector, 9 pin
Functions	DP V0 (cyclic communication)
Data Transport Layer	DP V0 (cyclic communication)

Modbus RTU Master Value	
I/O	Max. No. of I/O data 512 Read/512 Write registers or 100 commands
Function Codes	01 - Read Coil Status 02 - Read Input Status 03 - Read Holding Register 04 - Read Input Register 05 - Force Single Coil 06 - Preset Single Register 15 - Force Multiple Coils 16 - Preset Multiple Register
Serial Communication Parameters	Data bits - 8 bits Stop bits - 1, 2 Parity Bits - None, even, odd
Maximum Units	31 unit per host(Node Number: 1 to 126)

Indication	
Status LEDs	2 LEDs, (System Status + Communication Status) & Power Status

Power Supply and Isolation	
Power Supply	24V DC ±10% @ 130 mA Current (200mA Max)
Power consumption	3 Watt (max.)
Isolation (Between Supply and Communication ports)	1000VAC RMS

Physical	
Mounting	DIN Rail (35mm) EN 60715
Enclosure material	ABS
Dimension (in mm)	75 (H) X 22.5 (W) X 110 (D)
Color	Light Grey
Weight	150 g

Environmental	
Operating temperature	0 to 55 °C
Storage temperature	-10 to 70 °C
Humidity	30 to 95 % non-condensing

Ordering code

Model				
MSC	XX		XX	
	PS	Profibus DP	MS	Modbus RTU

Accessories

Configuration and Diagnosis RS232 Cable (1 meter)

(**Note**: Latest Software can be downloaded from Our Website)

TECHNICAL SPECIFICATIONS FOR MSC-ME-MS and MSC-ME-ZB

Performance	
Processor	32-bit CPU ARM Core
Maximum No. of Read Registers	2048
Maximum No. of Write Registers	1024
Maximum No. of Modbus commands supported	192
No. Of Modbus Devices Supports on serial Port	64
No. of Clients supported on TCP/IP	15

Configuration Software	
MSC Studio	Configuration and Diagnostics

Communication Output	
RS485 Serial port	
Protocol	Modbus-RTU Master
No of Ports	2 (MSC-ME-MS) 1 (MSC-ME-ZB)
Communication Speed (Baud rate)	9600, 19200, 38400, 57600, 115200 bps
Parity	ODD, EVEN, NONE
Data bits	8
Stop bit	1, 2
Default Settings	9600, 8 Data bits, 1 Stop bit, No Parity
Connector	Plug-in screw terminals, 1.5mm² Cable Size
Recommended Cable	Shielded, twisted pair, size: 0.14mm²
Ethernet port	
Protocol	Modbus Over Ethernet(TCPIP-ModNet)
No of Port	1
Speed	10/100 Mbps (auto-detecting)
Connector	RJ45 (auto-crossover)

ZigBee Wireless(applicable for MSC-ME-ZB model only)	
Frequency Band	ISM 2.4 GHz
Communication Port	ZigBee (IEEE 802.15.4 standard)
Protocol	Modbus RTU Master or Modbus RTU Slave
Transmit Power	63 mW (+18 dBm)
Receiver Sensitivity	-101 dBm
Distance (max)	3000 meter typically (Line of sight) without Any Obstacles
Indoor Range	20 to 100 meter typically
Connectivity	Connect to Masibus ZigBee Adapter MSC-ZB-RS (For data collection over Wireless communication)
Antenna	Dipole pluggable 2.1 dBi (3 meter Extension Cable can be provided optionally)
Operating Channels	11 to 26

Power Supply	
Voltage	18-32 V DC ±10%
Power consumption	<5W
Isolation	
Supply to RS485: 1500VAC RMS	
Supply to Ethernet: 1000VAC RMS	

Physical	
Dimension (in mm)	101(H) x 22.5(W) x 120(D)
Mounting	Din Rail (35 mm)
Weight Approx.	<160 grams
Enclosure material	Molded ABS
Enclosure Protection	IP20
Color	Black

Environmental	
Ambient temperature	0 to 55°C
Storage temperature	-10 to 70°C
Humidity	30% to 95% RH (Non-Condensing)

TECHNICAL SPECIFICATIONS FOR MSC-ZB-RS

Performance	
RF Data Rate	250 kbps
Indoor Range	20 to 100 meter typically
Outdoor Range	3000 meter typically (Line of sight) without Obstacles
Transmit Power	63 mW (+18 dBm)
Receiver Sensitivity	-101 dBm

Features	
Antenna	Dipole pluggable 2.1 dBi (3 meter Extension Cable can be provided optionally)
Frequency Band	ISM 2.4 GHz
Working Mode	Can work as Router and Coordinator
Serial Data Interface	RS485 (can connect to Masibus or any third Party RS485 Network)

ZigBee Wireless	
Network Topologies	Point-to-point, Point-to-multipoint, Mesh
Protocol supported	DigiMesh
Operating Channels	11 to 26
Spread Spectrum	TYPE Direct Sequence
Filtration Options	PAN ID, 64-bit MAC

Power Supply	
Voltage	24 V DC (Externally) Or optionally using 12VDC Adaptor
Power consumption	3W

Physical	
Dimension (in mm)	75(H) x 75(W) x 35D)
Enclosure material	ABS
Enclosure protection	IP20
Mounting	Wall mount (alongwith mounting clamps/screws)
Weight	110 grams approx

Environmental	
Ambient temperature	0 to 55°C
Storage temperature	-10 to 70°C
Humidity	30% to 95% RH (Non-Condensing)

Ordering Code

Model	
MSC-ME-MS	Modbus Serial to Modbus Ethernet

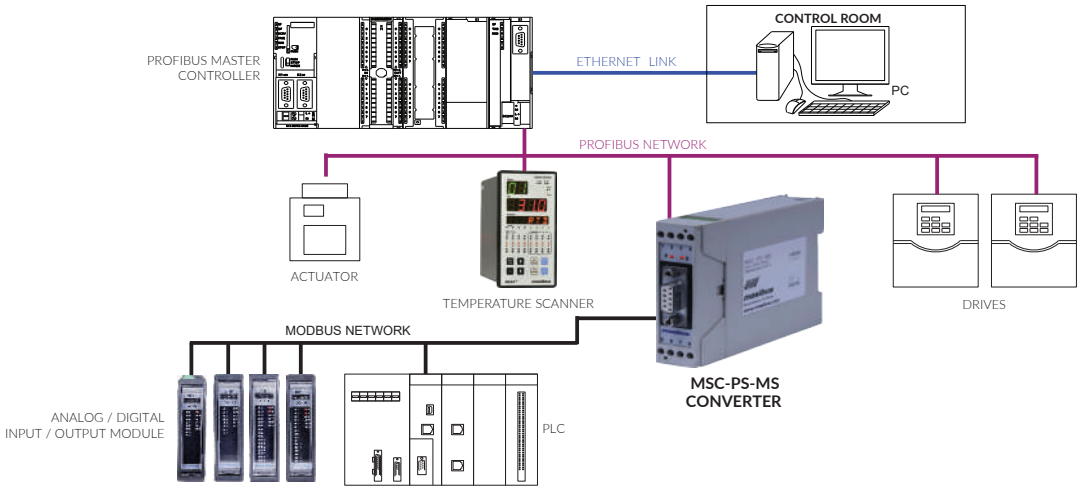
Model	
MSC-ME-ZB	Modbus ZigBee to Modbus Ethernet

Model	
MSC-ZB-RS	ZigBee Wireless to RS485 Serial (ZigBee Adapter)

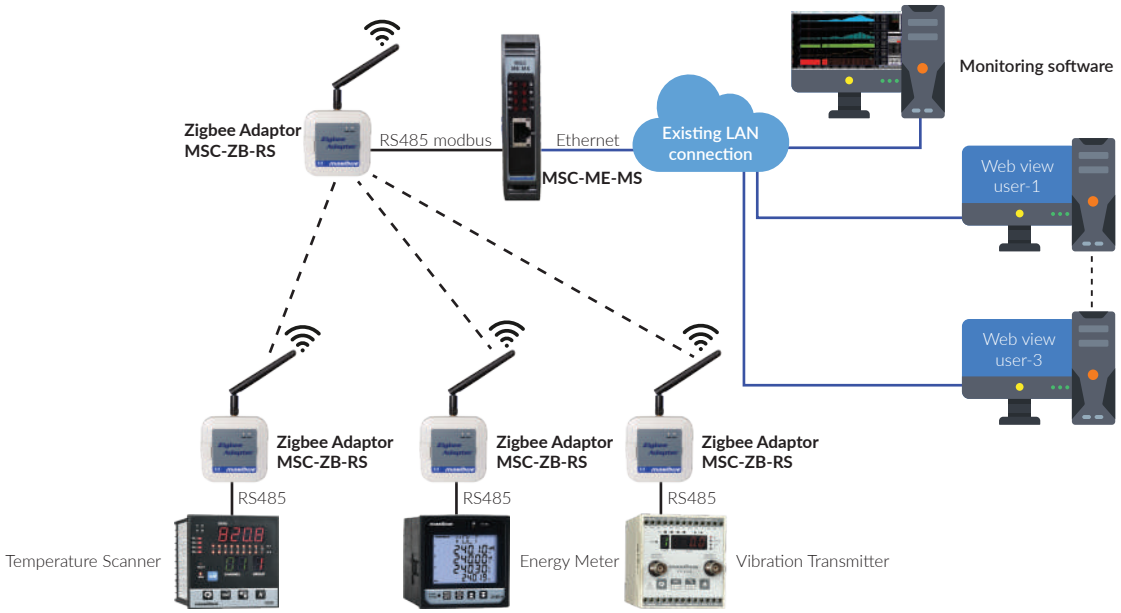
Optional Accessory (extra cost) for Zigbee model
CBL-ZB-ANT-03: 3 meter Extension Cable for antenna

APPLICATION DIAGRAM

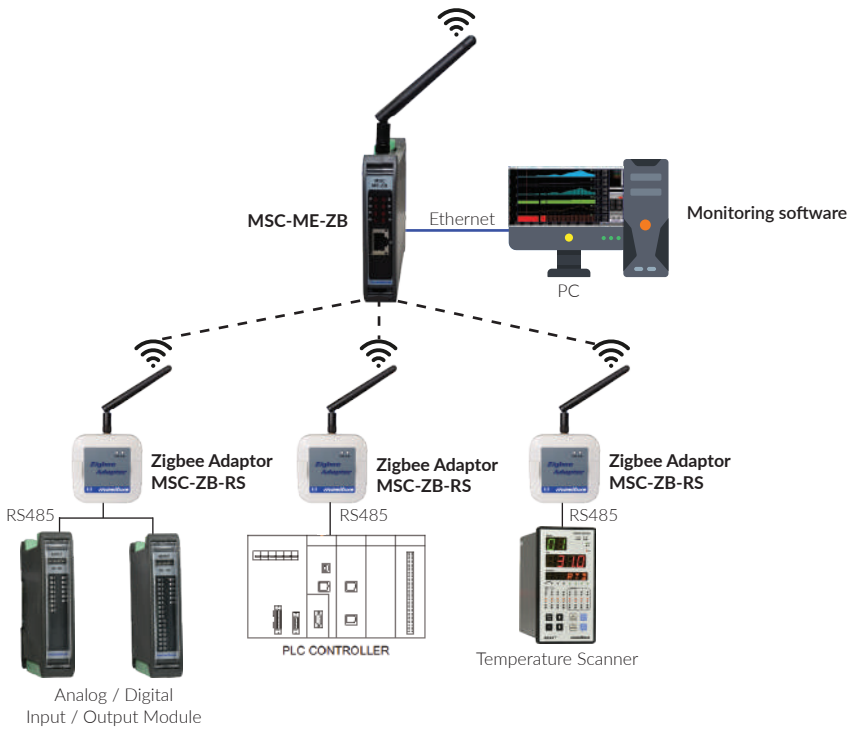
DATA ACQUISITION SYSTEM OVER PROFIBUS NETWORK



PROTECTION MONITORING SYSTEM USING ZIGBEE MESH NETWORK



WIRELESS DATA ACQUISITION SYSTEM USING ZIGBEE MESH NETWORK



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