

T940X

MODEL

Features

- powerful controller with large application capacity
- redundant processor option
- open I/O network



Process Supervisor Technical Specification

General specification

Physical, case dimension and weight

Dimensions	Backplane:	402mm wide x 180mm high x 24mm deep
	Connection Module:	120mm wide x 180mm high x 126mm deep
	Processor Module:	120mm wide x 180mm high x 186mm deep
Backplane fixing centres:		382 horizontal x 125 vertical
Weight	Backplane:	2kg. max (without modules)
	Connection module:	1.1kg max.
	Processor module:	2.4kg max. (each)

Environmental operating ranges, and standards

Temperature	Storage:	-25 to +85°C
	Operation:	0 to + 50°C
Humidity:	Storage/Operation:	5 to 95% RH (non-condensing)
Vibration:		To IEC1131-2 section 2.1.3 (0.075mm peak amplitude 10 to 57 Hz; 1g 57 to 150 Hz)

EMC and safety standards

RFI EMC emissions:	BS EN561326 2000-02
EMC immunity:	BS EN561326 2000-02
Electrical Safety:	BS EN61010-1/A2:1993
Installation category:	II
Pollution:	degree 2

Power Requirements

Main supply:	24Vdc nom. (18 to 36Vdc)
Max power requirement:	at 50W per processor module
Supply voltage connector:	DC: Phoenix MSTB 2,5/2-ST-5.08 or equivalent. Two supplies can be connected, to ensure continued operation should one supply fails
Battery options	Internal: Nickel/metal hydride battery board maintains database and realtime clock for 72 hrs (min)
	Backup supplies External: 2.4 to 5Volt battery Typical drain per processor = 3.4mA at 3.4V
Fusing requirement:	No internal fuse
	24V supplies fuse: 3A Type T in each positive supply line
	External batteries fuse: 0.5A Type T in each positive supply line

Processor

CPU type:	Pentium MMX 266 MHz
Flash memory:	>8 Mbyte,
Serial Communications	Non-isolated RS232 terminal configuration port (RJ11 connector)

General (continued)

Health Relays

Relays:	One watchdog relay per processor Two user configurable relays per processor
Contact Format:	Common and normally open
Contact rating (resistive)	30Vac / 60Vdc at 0.5Amps
Isolation	(Contact-to-ground) 30Vac (RMS) or 60Vdc

Panel Indicators

Main supply (24Vdc nom) status
External battery Status
Internal battery status
Alarm relays status
ELIN/ALIN/Profibus/Modbus Master/Modbus Slave comms status
Primary processor status
Standby processor status
Watchdog status
Duplex (redundant mode) status

Control switches

Processor front panel	
Push button switches	Watchdog Halt Watchdog Restart Processor module synchronisation/ changeover Processor module desynchronisation
Rotary switch	Start-up mode selection
Back plane	
Configuration Switches	SW1: ALIN address SW2, segment 1: Watchdog retry (trip and try again mode) SW2, segment 6: Redundant/non-redundant mode select (duplex/simplex) SW2, segment 5: Modbus select

Other connections

Safety earth connection:	By M4 earth stud on right hand flange of the backplane
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Control Specification

Continuous database resources (default max values)

Continuous control	
database size:	320k Bytes
Number of templates:	50
Number of libraries:	28
Number of EDBs:	32
Number of TEATTs (external attachments):	512
Number of connections:	1024
Control database size:	256k Bytes (max)
SFC database size:	512k Bytes (max)

Sequence Control Resources

Sequence memory	
Program data:	256k Bytes
SFC Resources:	256k Bytes
Independent sequence tasks	
simultaneously active:	40
SFC actions:	170, including root SFCs
Steps:	640
Action associations:	2400
Actions:	1200
Transitions:	900

Communications specification

ELIN ports

Connectors:	pairs of shielded RJ45 connectors per processor unit
Network medium:	Ethernet Cat5
Network type:	LIN over Ethernet TCP/IP
Speed:	10/100 TX
Network Topology:	star connection to a hub
Line length (max):	100 metres, extendable by repeater
Allocation of IP address:	Manual Link-Local BootP

ALIN ports

Connectors:	Parallel wired pairs of shielded RJ45 connectors per processor unit.
Network medium:	ArcNet (screened twisted pair, 100 Ohm)
Network type:	Token bus
Speed:	2.5 Mbits/sec.
Number of nodes:	8 (max), extendable by repeater
Line length (max):	100 metres (max), extendable by repeater
Isolation:	60Vdc / 30Vac; 5.6kΩ to 0V

Master I/O Comms memory

Profibus:	200k
Modbus:	100k

Note: The comms spreadsheet must be used for the I/O sizing.

Modbus/Jbus (EIA422/485), Slave

Connectors:	Parallel wired pairs of shielded RJ45 connectors per processor unit.
Protocol:	MODBUS/JBUS RTU slave
Data rate:	Selectable between 600 and 38,400 Baud
Data format:	8-bits, 1 or 2 stop bits, selectable parity
MODBUS data tables:	16 tables of 16, configurable as registers or bits
Table length:	200 registers (max) or 999 bits
Memory allocated to tables:	24K Bytes
Isolation:	60Vdc / 30Vac

Modbus (DCM) Master

Connectors:	Parallel wired pairs of shielded RJ45 connectors per processor unit.
Protocol:	MODBUS/JBUS RTU master
Data rate:	Selectable between 600 and 38,400 Baud
Data format:	8-bits, 1 or 2 stop bits, selectable parity
Isolation:	60Vdc / 30Vac

Profibus

Connectors:	Parallel wired pairs of shielded RJ45 connectors per processor unit.
Protocol:	Profibus DP/DPV1
Number of nodes supported:	123 nodes max
Data rate:	Selectable between 9600 and 12M Baud
Isolation:	60Vdc / 30Vac; 1MΩ to Chassis

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