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MasterLogic-200



Programmable Logic Controllers

Honeywell

Honeywell

MasterLogic-200

Overview

Honeywell introduces its next generation MasterLogic-200 Programmable Logic Controller (PLC) System. The MasterLogic-200 CPU is designed using state-of-the-art 32 bit processor technology which provides extremely fast speed for program execution, backplane data transfer and communication. MasterLogic-200 system has modular configuration and scalability to address wide range of applications across all industry verticals.

MasterLogic-200's user friendly engineering tool with integrated PLC programming and network configuration provides single platform for user.

Open Network Communication interface makes the MasterLogic-200 system interoperable with other systems and devices.

Key Features

Benefits

Powerful and versatile processors - High speed i.e.42 nano sec/step, 7MB program memory, 4MB system memory, 2MB data memory, 16MB built-in flash memory for program & data backup

For handling complex and large applications.

Redundancy for CPU, power supply, communication & I/O network

Ensures system availability and uptime.

Small foot print

Reduces the number of cabinets.

Wide range I/O modules which covers digital, analog, high speed counter, RTD, thermocouple, position control

Accepts of all types of field signals.

Smart I/O modules – Profibus™ DP, DeviceNet™, MODBUS

Modules are optimally configured.

Open network protocols with field devices – Profibus™ DP, DeviceNet™, MODBUS (Ethernet & Serial)

Mutually compatible open network protocols.

Peer-to-Peer communications between MasterLogic-200 PLCs through Fast Ethernet communication

Scalable platform caters to enhanced requirements.

Remove Insert Under Power (RIUP) for I/O modules

Prevents shutdown, system constantly available.

User-defined events recording

Troubleshooting made easy.

Self-diagnostics – network diagnostics, system logs, auto scan, and monitoring system

Troubleshooting made easy.

Integrated programming software

Single platform, saves development time.

Programming languages compliance to IEC611313 – languages supported are Ladder (LD) / Sequential Function Chart (SFC) / Structured Text (ST) / Instruction List (IL)

Offer application specific language selection options precise control.

Built-in library of function blocks and facility to create user-defined function blocks

Achieve tighter process control application specific function blocks.

Built-in program simulator

Offline program testing saves start-up time.

Seamless integration with Experion PKS

No additional software required.



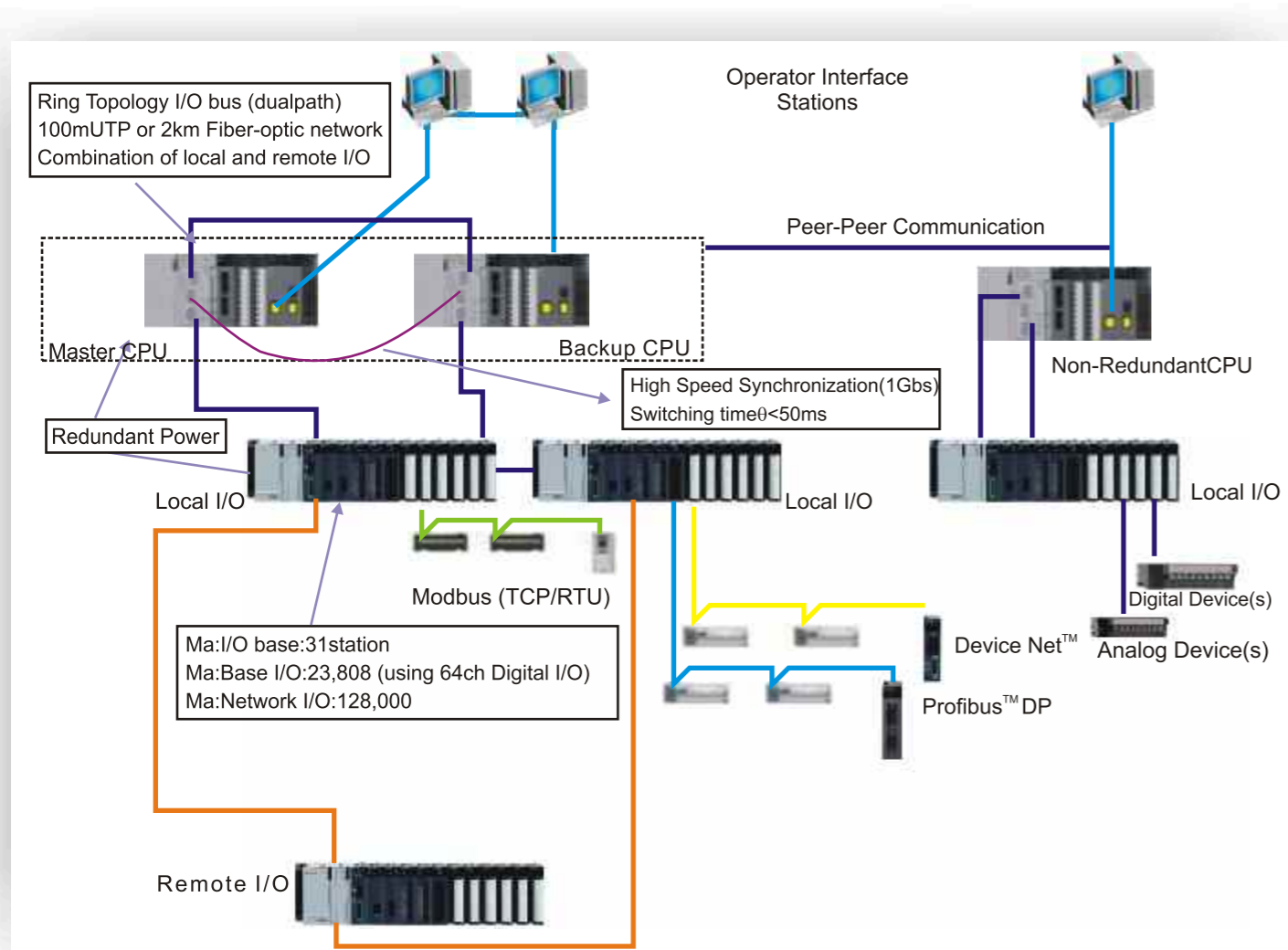
Redundancy Architecture

System Description

- CPU redundancy— Independent CPU Rack with Master & Back-up CPU, switch over from Master CPU to Back-up is 50 ms whenever Master CPU fails
- Power supply redundancy for CPU and I/O racks
- Network redundancy — Ring topology provides dual communication paths to I/O racks
- True hardware redundancy through dedicated high speed (1 Gbps) synchronization, fiber optic link for data transfer from Master to Back-up CPU
- I/O network redundancy using ring topology network, Built-in twisted pair for local (500m) or fiber-optic networks for remote I/O (2km)
- Base type remote I/O functionality
- Base I/O capacity enhanced to 23,808 (372 slots from 31 bases)



System Architecture



CPU Specifications

Key Performance Parameters

CPU Name		ML200	ML200R	
		2MLI-CPUU	2MLR-CPUH/T	2MLR-CPUH/F
	Scan time	10-15ms for 2500 I/O or 400 Kbyte of memory	10-15ms for 2500 I/O or 400 Kbyte of memory	
	RTC	Yes	Yes	Yes
Redundancy	CPU, Power Supply, Communication & I/O Network	No	Yes	Yes
Programming Languages	Compliance to IEC61131-3 standard which supports Ladder Language (LD), Sequential Function Chart (SFC), Structure Text (ST), Instruction List (IL)	Yes	Yes	Yes
Memory	User Define Function Blocks	Yes	Yes	Yes
	Program Memory	1 MB	7 MB	7 MB
	Data Memory	2 MB	2 MB	2 MB
	System Memory	2 MB	4 MB	4 MB
	Flash Memory	2 MB	16 MB	16 MB
I/O Capacity	Base I/O	6144	23808	23808
	Networked I/O	128000	128000	128000
	I/O Rack Support	8(Base+7)	31	31
	Max I/O Slots	96	372	372
	Max I/O Extension Distance	15 m	500 m	2 m
Open Network Communication	Modbus TCP/IP over Ethernet, Modbus (RTU/ASCII) over serial network, Profibus™ DP, DeviceNet™	Yes	Yes	Yes
	On-board Fiber Optic Communication Port	No	No	Yes

Communication & I/O Modules are common

Digital I/O Modules

MasterLogic-200 has a wide range of Digital I/O modules with channel density of 8, 16, 32, & 64 points. All digital I/O modules have LED for channel status indication and are with photocoupler isolation.

Digital I/O module categories are :

- 24V DC input modules (Sink/Source or Source Type)
- AC input modules (110V or 220V AC)
- Relay, Triac & transistor output modules (sink or source)



Analog I/O Modules

Analog input module range includes current, voltage, RTD & Thermocouple. Analog Output modules are voltage & current output type.

Some of the key features of Analog modules are :

- High speed A/D or D/A (250 s/ channel) conversion and processing
- Channel to channel isolation for selected modules
- High resolution (16 bits), 14 bit for data
- Digital value in 4 data formats
- Channel Input signal disconnection status
- LED status displays for RUN / ERROR conditions
- RTD (2-wire, 3-wire, 4-wire)
- Thermo-couple (K, J, B, T, E, R, S, N, C types)

Special Modules

- Two channel high speed counter (voltage input or differential voltage incremental encoder, preset function)
- Positioning modules
- Motion Control module



Smart I/O Modules

MasterLogic-200 Smart I/O modules provide the user with flexibility in making the control system architecture, when control and monitoring of scattered remote devices need to be provided through the main control system.

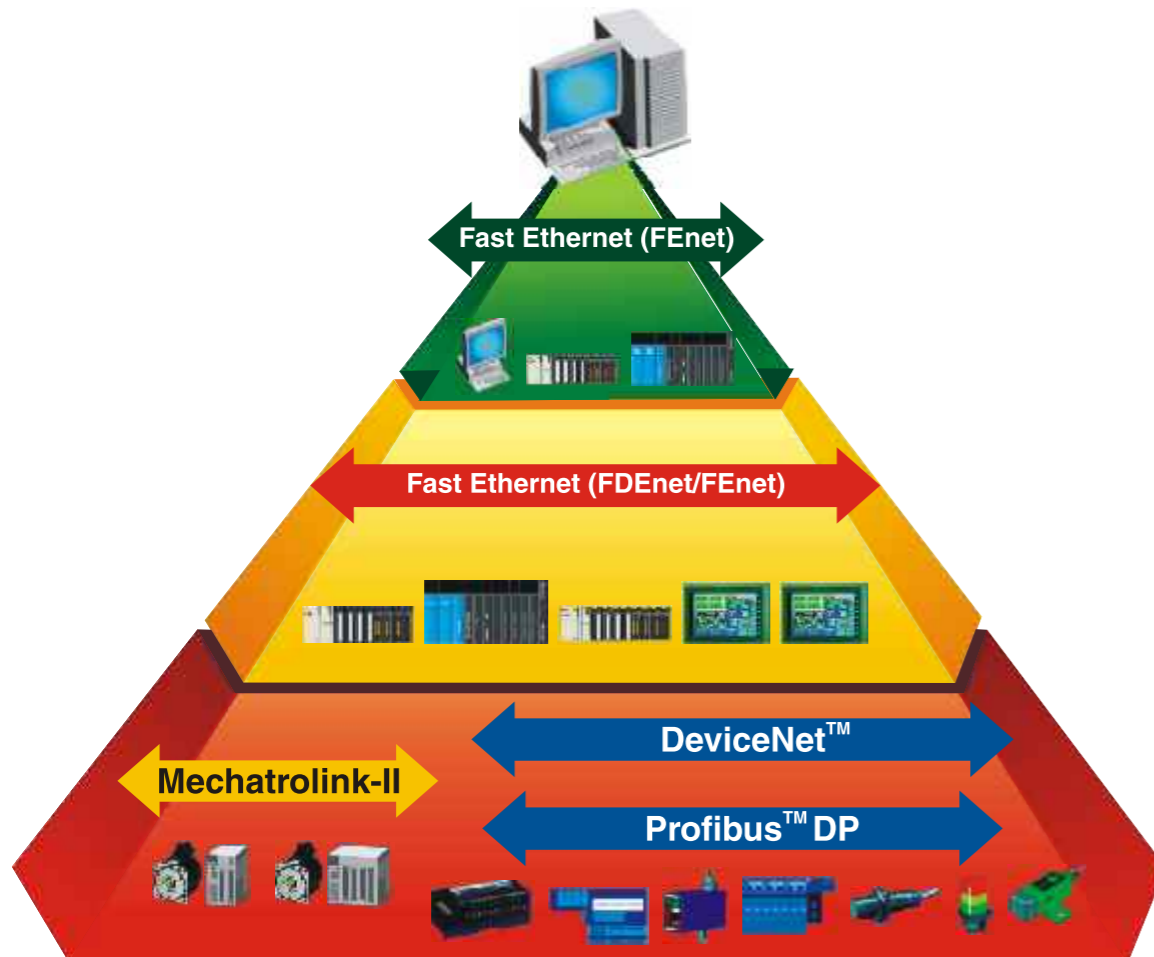
The family of MasterLogic-200 includes Smart I/O modules such as Profibus™ DP, DeviceNet™ and MODBUS serial modules, providing selection options to meet I/O network suitability.



Open Network Communication

Open Network Communication Standards have continuously evolved to make the systems and devices interoperable with each other through seamless integration of data exchange. MasterLogic-200 has specific communication modules to support open network communications at supervisory level, control level and device level:

- **Fast Ethernet Modules (FEnet)**
Peer-to-Peer integration with other MasterLogic-200 systems offers scalable platform and Modbus TCP/IP Master/Slave protocols provide interface to third party SCADA/HMI panels along with integration with Honeywell's Experion System
- **Serial Communication Modules (Snet)**
Modbus RTU/ASCII Master/Slave protocols are user defined protocols for interfacing with third-party devices
- **Profibus-DP (Pnet)**
Provides interface to systems and field devices over Profibus™ DP network, conforms to International Standard of EN 50170, and supports Auto Baud Rate Detect
- **DeviceNet™ (Dnet)**
Provides interface to field devices which communicate over DeviceNet™ network



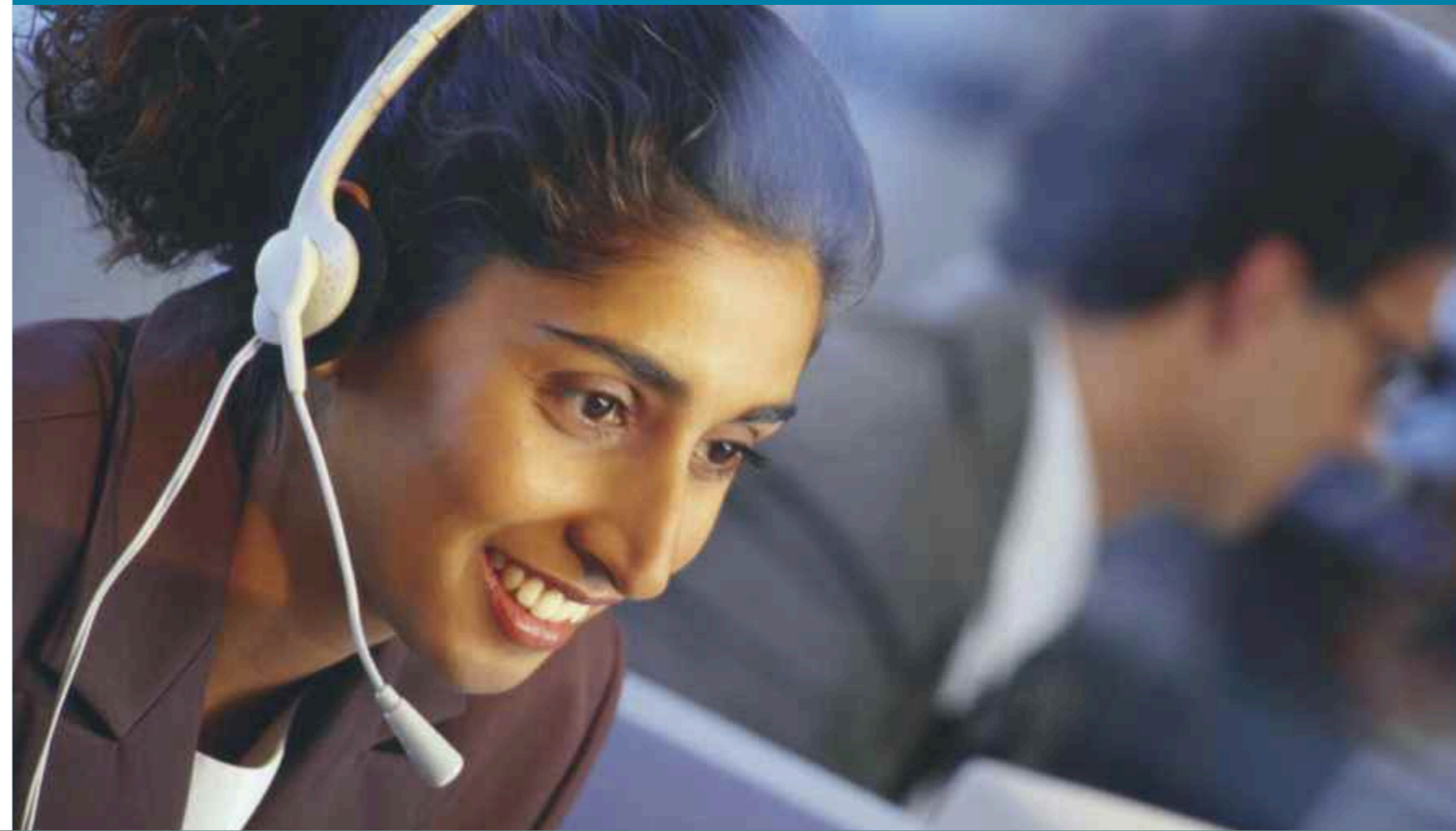
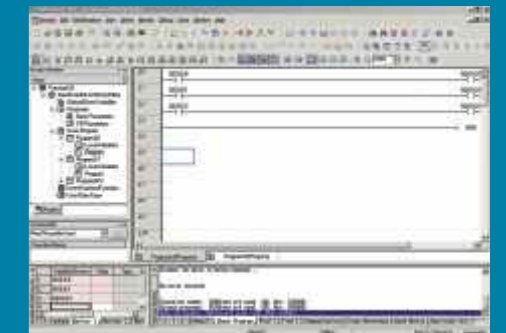
Online Maintenance and Troubleshooting



- Removal of inserted I/O modules in Power-On condition through a software wizard or a CPU dip switch
- Force I/O values (bit and word) for maintenance and troubleshooting
- Skip I/O for I/O modules or the I/O rack
- User-defined Event Recording or SOE – Digital devices can be configured for automatic event recording when falling, rising or Change of State (COS) with mSec timestamp for SOE analysis

Integrated PLC Engineering Environment

SoftMaster provides the user with integrated platform for PLC engineering – through menu driven selection for program development, system configuration, network configuration, online editing & monitoring, testing & debugging, troubleshooting and project documentation. This benefits the user by saving development time and enabling quick learning.



MasterLogic-50 – MicroPLCs

- Max I/O Capacity : 480
- Very compact size
- CPU speed : 160 ns / step
- 7 expansion modules (snap-on)
- Max. program capacity : 10 Ksteps
- CPU Built-in functions
- RS232C/ RS485 communications
- Built-in 2-axis position control
- Built-in high speed counter
- PID control (cascade control)
- Pulse catch/ input filter



Master Panel



- 192 x 64 dot graphic LCD/ Compact size (160W x 90H x 30D mm)
- Built-in 256K flash memory (Screen and Font)
- DC 24V
- Multi-Language support: English, Chinese, Russian, Korean
- Graphic Editing tool with bitmap and tag support
- User-definable function keys (F1 ~ F4, 4 arrow keys)
- Built-in RTC
- Two Separate channels : RS-232C and RS-422/485, configurable as loader port or MODBUS (master/slave - ASCII/RTU) or other manufacturer PLCs

HCi & Series

- Color TFT - LCD (256 colors) - 3 sizes - 10.4", 12.1", 15.0" models
- Touch Screen Operation
- 32 bit RISC CPU Processor
- CE/UL/FCC Approved
- IP65 Front Face Enclosure
- RS-232 & RS-485 Comm - configurable as MODBUS RTU or loader port
- Graphic Design Software (HCi Designer)
- Multi-Language Display (English, Chinese, Korean etc.)
- Power supply: DC or AC input option



Industries Served



Metals, Minerals & Mining



Oil & Gas



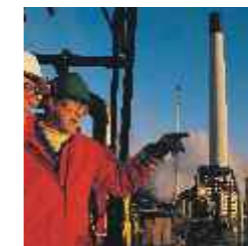
Hydrocarbon Processing



Power Generation



Life Sciences



Petrochemicals



Pulp, Paper & Print



Infrastructure
(Metro Rail, Airports,
Sports Complex, SEZ)