

# PRODUCT PRESENTATION

## MASTETLOGIC PLC HONEYWELL VFD

**HONEYWELL PROCESS SOLUTIONS  
PROCESS MEASUREMENT AND CONTROL**

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# AGENDA

**1.MasterLogic PLC**  
**MasterLogic 200**  
**MasterLogic 50**

**: 20 mins**



**2.HMI, HCiR series**

**: 10 mins**



**3.Honeywell VFD**  
**MVS100, MVH100, MVIS7**  
**New Product line**

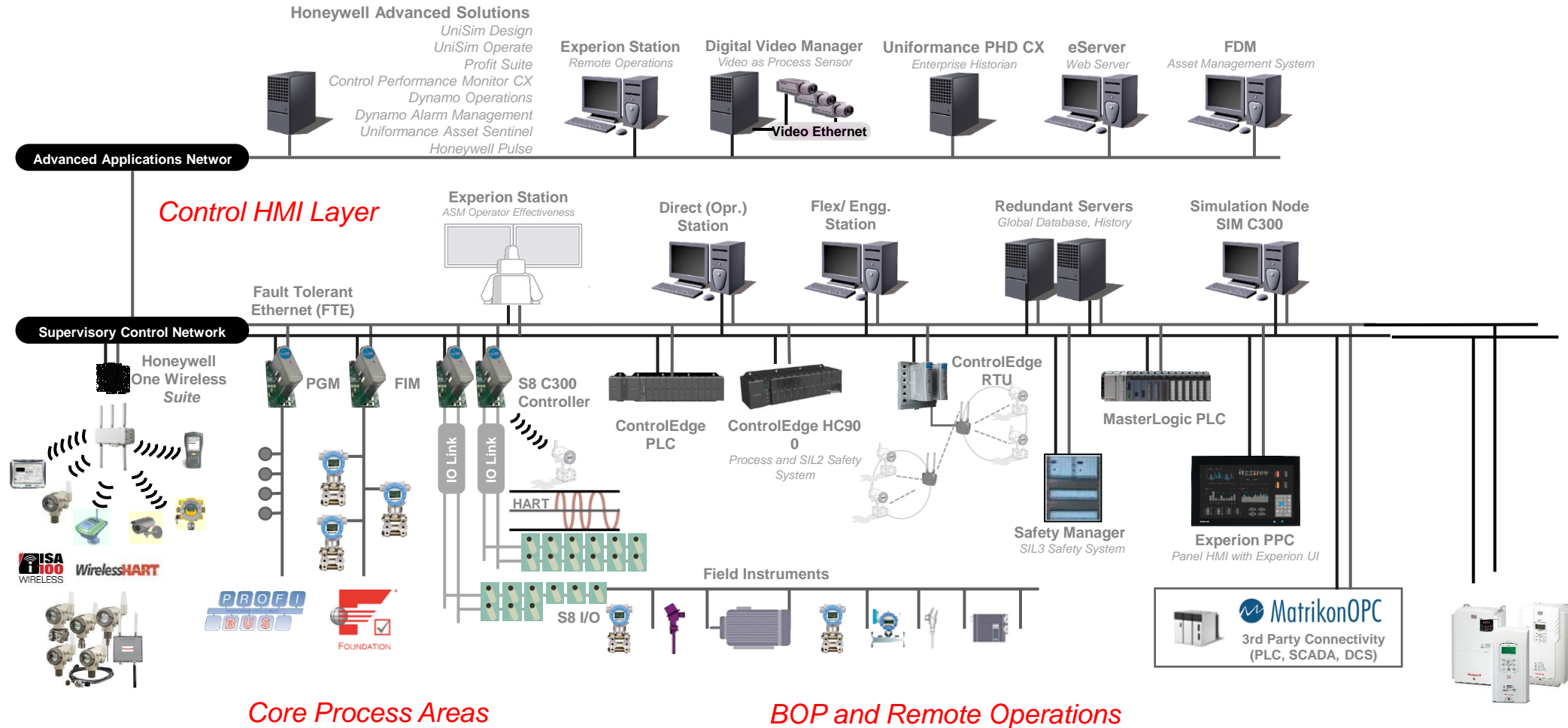
**: 15 mins**



# EXPERION LX ARCHITECTURE

*Advanced Solutions and Specials*

*Decision Support Subsystems*



## Enterprise-Wide Solutions



# MASTERLOGIC PLC

1. Optimized and Enhanced Solution
2. Application Oriented
3. Fully Redundant-  
CPU,Power,Network,IO Red.
4. Small to Large system
5. Economic to mid-range
6. Wide protocols & interface
7. Easy maintenance



# MASTERLOGIC PLC-200 AND 50

## Product Description

- MasterLogic's advanced technology enables higher speed processing and better control in applications of all types, particularly smaller unit operations.
- This compact and modular PLC offers all of the redundancy architecture options needed for most industrial operations—and at a competitive cost.



## Applications

- General purpose applications based on discrete logic control like building control systems, process control, etc
- Redundancy requirement(Enet, FO)
- Infrastructure Market and Integrated Design of PLC and HMI – Water treatment, Environmental control(HVAC), Heat treatment, tunnel systems, etc
- Data monitoring and retaining, restoring to client sys

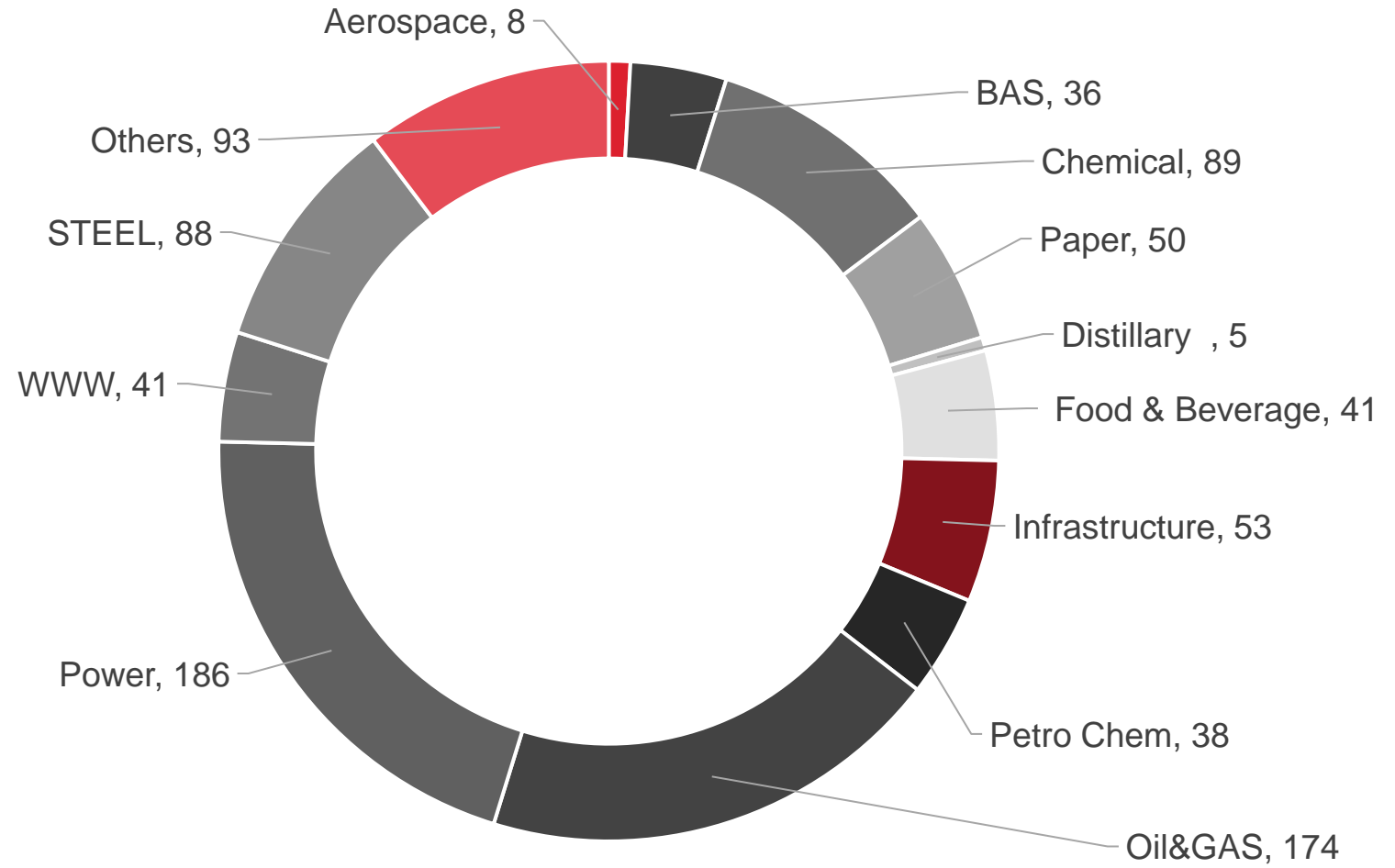
## Value Proposition

- Powerful and versatile processors for high-speed
- Improves productivity through ease of use
- Full redundancy for CPU, power and network
- Data management functions that derive from history collection and reporting
- Meets requirements of general purpose

# INSTALLED BASE SUMMARY

Market	Cases
Aerospace	8
<b>BAS</b>	36
Chemical	89
Paper	50
Distillary	5
<b>Food &amp; Beverage</b>	<b>41</b>
<b>Infrastructure</b>	<b>53</b>
Petro Chem	38
<b>Oil&amp;GAS</b>	<b>174</b>
Power	186
WWW	41
STEEL(MMM)	88
Others	93
<b>Total</b>	<b>902</b>

Summarized on 2021



# TARGET MARKET APPLICATION

## HPS Adjacent Verticals

- Water and wastewater
- Food & beverage
- Pharmaceuticals
- Specialty chem
- Mining and metal
- Infrastructure(Data Center)
- HVAC, buildings
- OEM

*Attach to core HPS Verticals where feasible*

## Target OEM

- HVAC OEMs
  - Water, Wastewater OEMs
  - Pharmaceutical OEMs
  - Others (Life Sciences, Infrastructure etc)
  - Combined MLPLC+VFD
- 
- *Need to build the infrastructure (AVL, expert SIs)*
  - *Need to improve the specific applications*

## Distributors/ System Integrators

- Partners with HWL solution-Experion sys
  - Build competency of existing partners, own business
  - Distributor network for better reach, and delivery schedule and repeat, run rate business
- 
- *Promotions to expand business scope*
  - *Need extensive training program*

# COMPETITIVE DISPLACEMENT



## Competitive legacy

- Legacy automation system reaching EOL
- Most suppliers do not have upgrade plan
- Need to avoid any downtime and cost increase



## Potential - Honeywell

- Huge cases of PLC system, S7-200/300, PLC5, etc
- Keep the integrated devices in field
- Sales potential to migrate install-base



## Upgrade?

- Need to keep compatibility with working system
- Spare availability, lost tech knowledge, lack of documentation
- Unplanned downtime, maintenance cost



## Non Honeywell Propo sition

- Secure system, advanced platform to widely integrate
- Packaged solution from a single vendor
- Standardization, easy-upgrade
- Support-GES, tech support plan, documentation

## 2022 Call to Action

- Proactive engagement-highlight legacy system vulnerability and Hon advantage, use GES support ecosystem
- Use ALHA too recommendations to assess
- Promote ControlEdge incremental features and upsell Modsys
- Marketing led promotion, collaterals and migration campaign
- Solution Notes and Promotions





# MASTERLOGIC PLC

**ML200 Redundancy**

**ML200 Hi-performance**

**ML50 compact, multi-functional on CPU**

# BENEFITS ON RED ML200



## Fast Discrete Control

MasterLogic PLC is dual separated CPU system, has fast scanning for discrete controls with CPU scanning speed of 42ns per step. It only takes around 15~20ms for 2,500 discrete I/Os

## Compact in Size

Its small and compact modular size offers cabinet spacing and rack room savings even the shipping costs (I/O size = 55\*98\*90 mm)

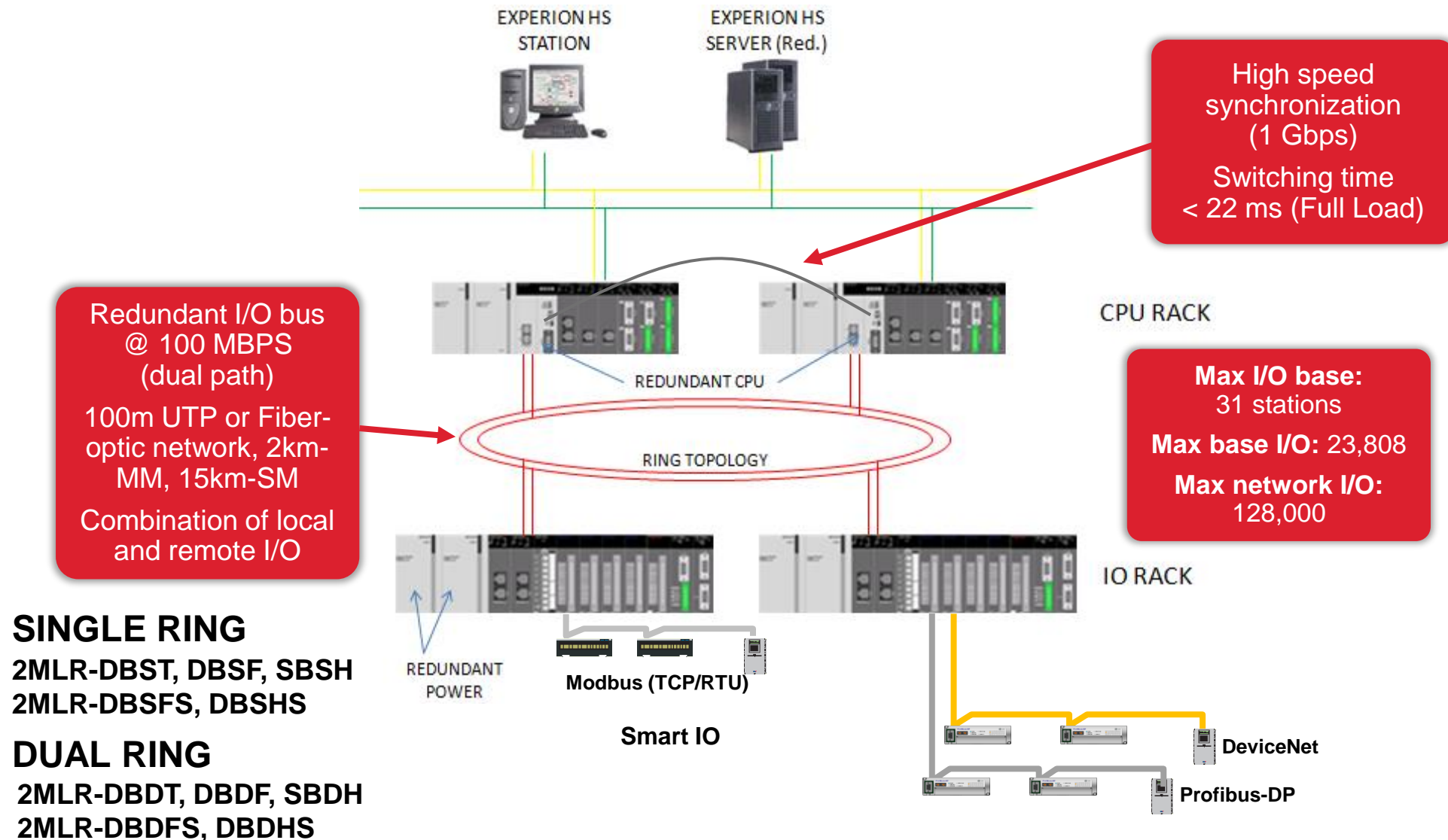
## Low Cost Solution

The net sell price of MasterLogic PLC is reasonable and cost-competitive in any price sensitive market. Smart IO is used for expanding remote IO.

## Integration with Experion & Expandability

MasterLogic PLC offered in Experion architecture along with other components provides a tighter integration-Ethernet/IP, ModbusTCP with Experion server, saving considerable engineering time – approx 15%, Max 35%

# SYSTEM ARCHITECTURE



# DIGITAL I/O MODULES

- 24VDC input modules (sink/source or source only type)
- AC input modules (110V or 220V AC)
- Relay, Triac, transistor output modules (sink or source type)
- 8, 16, 32, 64 points I/O module
- Photo-coupler isolation
- Individual LED for DI/DO status
- Response time is as low as 1ms
- Output hold upon CPU fail/stop or I/O module fail
- Easy maintenance: terminal & connector type
- Diagnostic function, Digital Input and Output

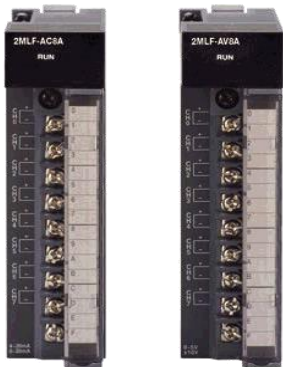


2MLI-D21A	8Pts. DC24V Input (Sink/Source Type)
2MLI-D21D	8Pts. DC24V input, Diagnostics
2MLI-D22A	16Pts. DC24V Input (Sink/Source Type)
2MLI-D22B	16Pts. DC24V Input (Source Type)
2MLI-D24A	32Pts. DC24V Input (Sink/Source Type)
2MLI-D24B	32Pts. DC24V Input (Source Type)
2MLI-D28A	64Pts. DC24V Input (Sink/Source Type)
2MLI-D28B	64Pts. DC24V Input (Source Type)
2MLI-A12A	16Pts. AC 110V Input
2MLI-A21A	8Pts. AC 220V Input
2MLQ-RY1A	8Pts. Relay Output, 2A , 1Pts./COM
2MLQ-RY1D	8Pts. Relay Output, 2A, Diagnostics
2MLQ-RY2A	16Pts. Relay Output, 2A
2MLQ-RY2B	16Pts. Relay Output, 2A , Bui-Varistor
2MLQ-SS2A	16Pts. Triac Output, 1A
2MLQ-TR2A	16Pts. TR Output, 0.5A (Sink Type)
2MLQ-TR4A	32Pts. TR Output, 0.1A (Sink Type)
2MLQ-TR8A	64Pts. TR Output, 0.1A (Sink Type)
2MLQ-TR2B	16Pts. TR Output, 0.5A (Source Type)
2MLQ-TR4B	32Pts. TR Output, 0.1A (Source Type)
2MLQ-TR8B	64Pts. TR Output, 0.1A (Source Type)

Digital Input

Digital Output

# SPECIAL ANALOG MODULES



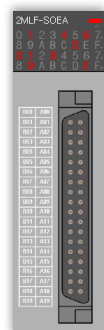
## Analog input and Output

- Voltage module and current module
- High speed A/D conversion & processing (250μs/channel)
- High resolution (16 bit 0 ~ 16,000)
- Easy configuration via SoftMaster and avoid programming
- LED status displays for RUN / ERROR conditions
- Each channel can be individually enabled / disabled
- Improve maintenance and overall processing speed
- HART analog input & output



## Datalog Module

- Capable to easily save PLC device data without PC
- Capable to save PLC control data without missing any change
- Capable to save a large volume of data file
- Long-term data saving is available since CF card and USB memory with a large volume of up to 16GB can be used(CF2001, Transcend)



## Event Input (Sequence-Of-Event, SOE)

- Detects the events from the field devices and records the event with a 1ms resolution time tag
- 1ms scanning at modular level
- 300 events per card (max. 3000 events)
- Tight integration with Experion Server
- Time sync with GPS time server internally

Model	Type	Specification
2MLF-AV8A	Analog Input	Voltage Input, 8channels
2MLF-AC8A		Current Input, 8channels
2MLF-AD8A		Voltage/Current Input, 8channels
2MLF-AD4S		Voltage/Current Input, 4channels, Isolated
2MLF-AD16A		Voltage/Current Input, 16channels
2MLF-AC4H		Current input, 4channels, HART
2MLF-RD4A	RTD Input	RTD Input, 4channels
2MLF-RD8A		RTD input, 8channels
2MLF-TC4S	TC Input	Thermocouple Input, 4channels, Isolated
2MLF-DV4A	Analog Output	Voltage Output, 4channels
2MLF-DC4A		Current Output, 4channels
2MLF-DC8A		Current Output, 8channels
2MLF-DV8A		Voltage Output, 8channels
2MLF-DC4S		Current Output, 4channels, Isolated
2MLF-DC4H		Current Output, 4channels, HART

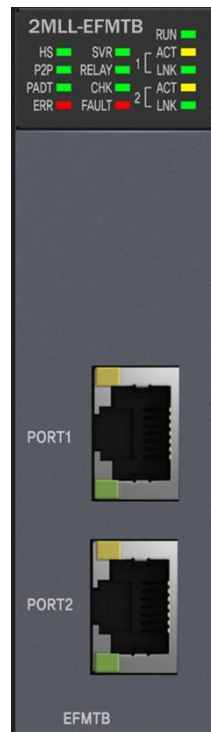


# NETWORK - FAST ETHERNET MODULE



## 2MLL-EFMHB

- 1) 100BASE-TX UTP/CAT5
- 2) 100BASE-FX Multi/Single-mode Fiber-Optic



## 2MLL-EFMTB

- 100BASE-TX UTP/CAT5



## 2MLL-EFMFB

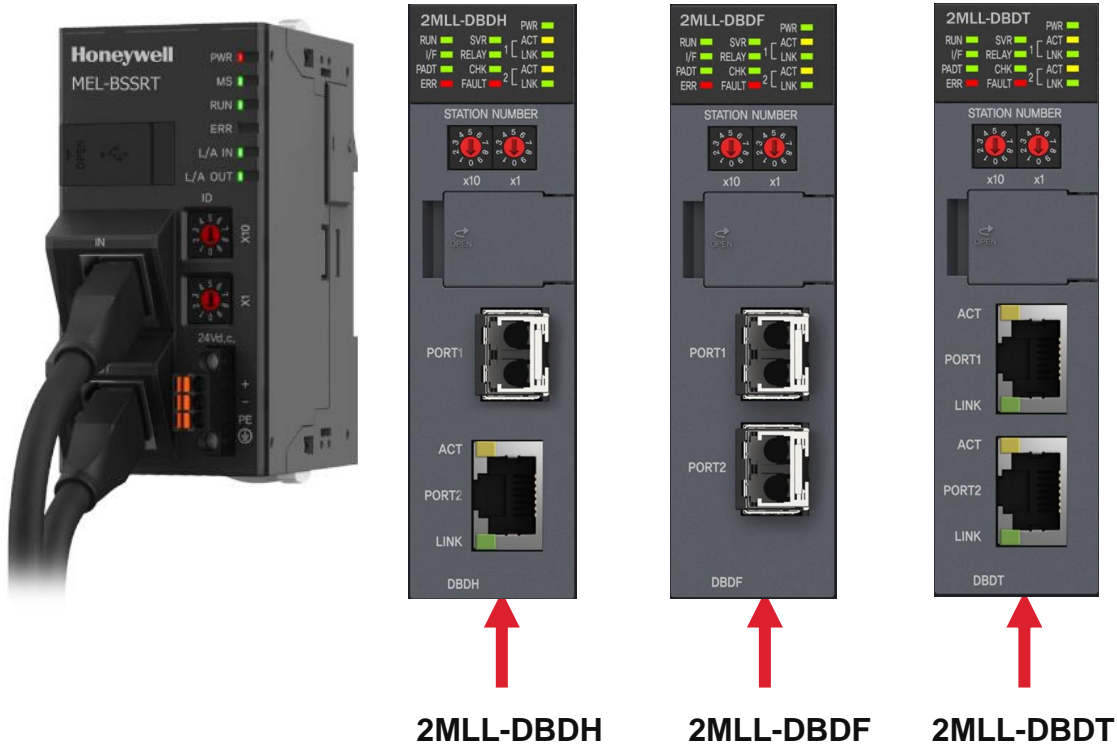
- 100BASE-FX Multi/Single-mode Fiber-Optic

- Supports both TCP/IP & UDP/IP protocols, Ver8, SoftMaster V4.3
- Twisted pair and Fiber-optic(MM/SM) media are available

Configuration	Application
<b>SoftMaster Service</b>	SoftMaster (PADT) service runs automatic by default in FEnet modules and does not require configuration. This means any SoftMaster PADT PC can communicate with any MasterLogic PLC's FEnet module provided they are on the same network.
<b>MLDP Server (ML Dedicated Protocol)</b>	For Experion PKS to communicate with MasterLogic PLCs for process and system alarms & events including SOE information. The PLC clocks can also be synchronized with server clock
<b>HSL Service Peer-to-Peer</b>	For MasterLogic PLCs to have peer-to-peer communication with few simple configuration steps. Diagnostics available to monitor frames and other communication status
<b>MODBUS TCP (Slave)</b>	For SCADA HMI or other MODBUS TCP master devices to initiate communication with MasterLogic PLCs on MODBUS TCP protocol
<b>MODBUS TCP (Master)</b>	For MasterLogic PLCs to act as MODBUS TCP master and initiate communication with other MODBUS TCP slave devices
<b>User-Defined Communication</b>	To send and receive user-defined TCP-IP communication packets
<b>HART (Pass-Thru)</b>	For Integration with FDM server(EXPERION), HART is supported
<b>Ethernet/IP</b>	For integration with devices thru Ethernet/IP, Implicit and Explicit

Functionally, more than one service can run simultaneously on a single FEnet Module  
SNTP for Time Synchronization and OPC UA(Server)

# NETWORK - REMOTE ADAPTERS(FENET)



- Supports wide protocols, ModbusTCP, EthernetIP, etc
- Twisted pair and Fiber-optic(MM/SM) media are available
- Integrated with ML200 IOMs and ML50 IOMs

Configuration	Application
<b>SoftMaster Service</b>	To integrate with EFMxB(ML PLC), automatically detects the IOs with adapters from SoftMaster. -Configure IP address -Diagnostics thru SoftMaster
<b>MODBUS TCP (Slave)</b>	For SCADA HMI or other MODBUS TCP master devices to initiate communication with MasterLogic PLCs on MODBUS TCP protocol
<b>Ethernet/IP</b>	For integration with devices thru Ethernet/IP, Implicit and Explicit Integrated with ControlEdge PLC, UOC, TYU
<b>RAPIEnet</b>	Dedicated protocol for ML PLC internally -Supported RING and START topology
<b>IP Address</b>	Manual config, DHCP from SoftMaster or server

Item-ML50	Item-ML200	Description
MEL-BSSRT	2MLL-DBDT	100BASE-TX UTP/CAT5
MEL-BSSRF	2MLL-DBDF	100BASE-FX Multi/Single-mode Fiber-Optic
MEL-BSSRH	2MLL-DBDH	1)100BASE-TX UTP/CAT5 2) 100BASE-FX Multi/Single-mode Fiber-Optic

Functionally, connecting to various clients and able to attend the networks

# REMOTE ADAPTERS AND SMARTIO

## Stand-alone Smart IO



## Remote Adapter



with ML50 IOM



with ML200 IOM  
S. power/S.Network



with ML200 IOM  
D. power/S.Network



Coming! 2024 Q2

with ML200 IOM  
D. power/D.Network

Item No	Description
MEL-D24C	24Vdc 32ch of Digital Input
MEL-DT4C1	24Vdc 16ch Digital Input, 16ch Digital Output
MEL-TR4C1	32ch Digital Output, SINK
MEL-RY2C	16ch Relay Output
MEL-AV8C	8ch Analog input, 1~5V/0~5V/0~10V/-10~10V
MEL-AC8C	8ch Analog input, 4~20mA, 0~20mA
MEL-DV4C	4ch Analog output, 1~5V/0~5V/0~10V/-10~10V
MEL-DC4C	4ch Analog output, 4~20mA, 0~20mA

# SMARTIO WITH BASE AND POWER

## Single Power, 2MLL-DBD#

Power	Item
	2MLP-ACF1
	2MLP-ACF1-CC
	2MLP-ACF2
	2MLP-ACF2-CC
	2MLP-AC23
	2MLP-AC23-CC
	2MLP-DC42
	2MLP-DC42-CC
Main Base	2MLB-M04A
	2MLB-M04A-CC
	2MLB-M06A
	2MLB-M06A-CC
	2MLB-M08A
	2MLB-M08A-CC
	2MLB-M12A
	2MLB-M12A-CC



## Redundant(Dual) Power, , 2MLL-DBD#

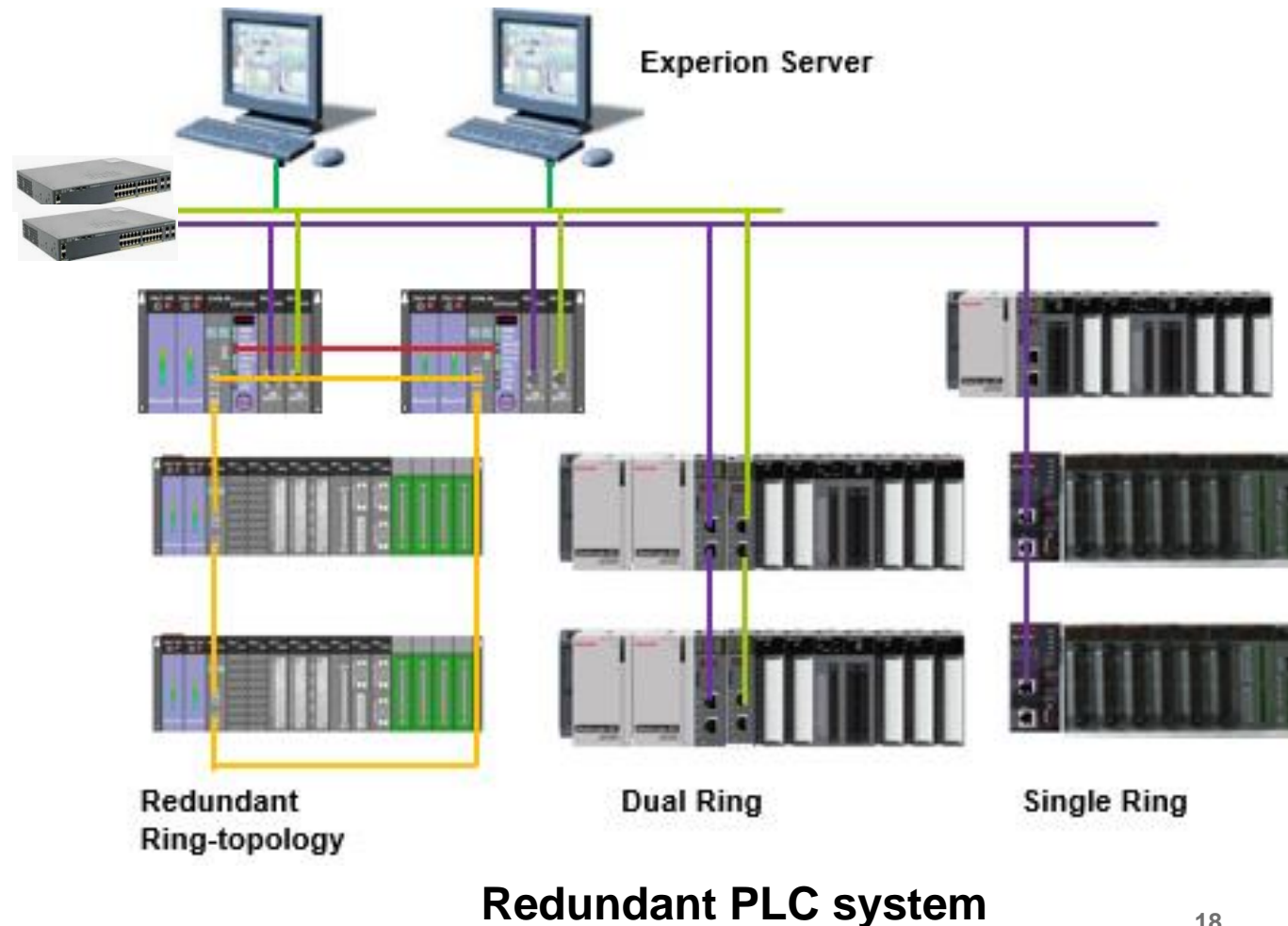
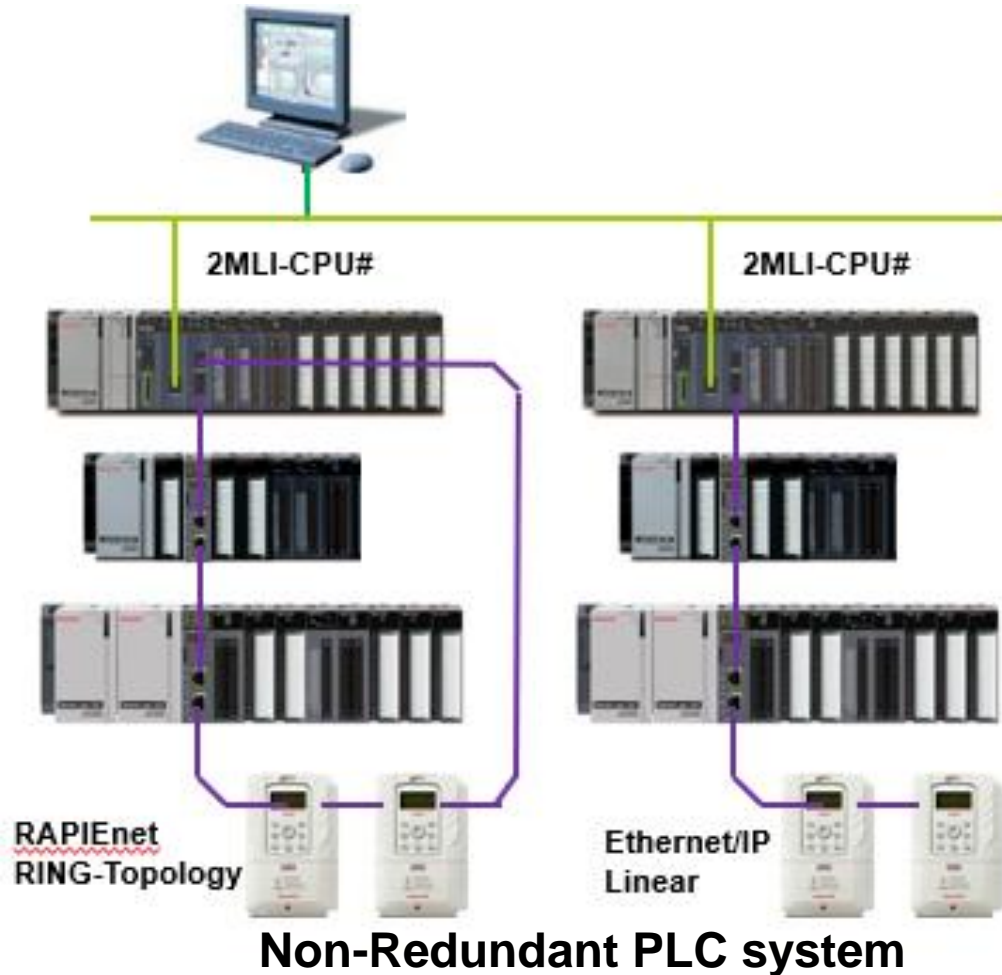
Power	Item
	2MLR-AC12
	2MLR-AC12-CC
	2MLR-AC13
	2MLR-AC13-CC
	2MLR-AC22
	2MLR-AC22-CC
	2MLR-AC23
	2MLR-AC23-CC
	2MLR-DC42
	2MLR-DC42-CC
Base	2MLR-E08P
	2MLR-E08P-CC
	2MLR-E12P
	2MLR-E12P-CC





# NETWORK FOR REMOTE IO

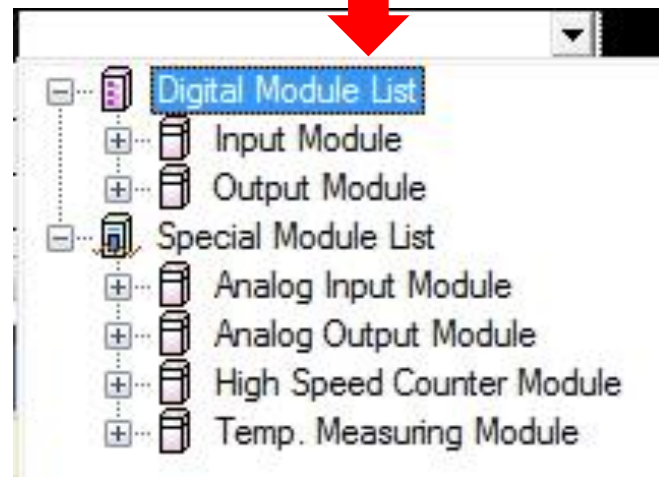
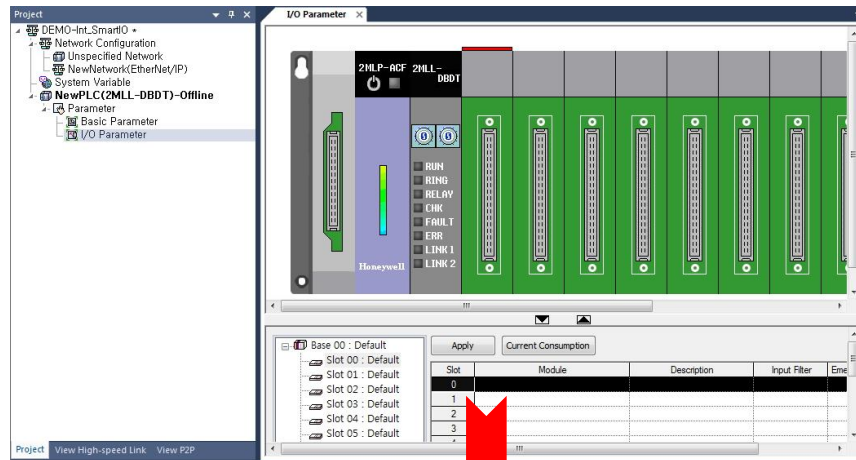
- **Smart Ext service** supports Ring topology on FEnet(based on RAPIEnet)
- For more improved performance, Slave replies Master with a group data
- ML200 IOs can be combined and communicated with other master
- Master of ML200 can scan the IOs info via Auto-Scan from SoftMaster





# SMART SERVICE on SoftMaster..

- Setup a Smart Remote IO  
Generate a new project, config IOM



- Automatically Scanning with wizards  
Make sure, if connected and RUN

**Wizard#1. Config a new project and EFMTB**  
**Start 'Smart service'**

**Wizard#2. Set the device count and click 'Autoscan'**

Details

No. of Communication Devices:  (1 ~ 63)

EB No.	Module Type	Module Name	Station	IP Address	Protocol	Apply
1	Modular	2MLL-DBDT	1	192.168.1.101	RAPIDnet	<input checked="" type="checkbox"/>

**Wizard#3. Check/set the exchange area**

Project

TEST\_Dec31 \*

- Network Configuration
  - Unspecified Network
    - NewPLC [B0S0 2MLL-EFMT(B)(T...
      - Smart Extension
        - New
          - EB01 - Generic EtherNet/IP ...**
- System Variable
- NewPLC(2MLI-CPUE)-STOP
- Global/Direct Variables

PLC Area Setting

Input/Output

Area:  Address:  Size:

Set the device memory for input / output refresh according to the slot information of the set EB. The memory address and size are calculated in words. (At least 0 words required)

☒ Enables EB/Slot Diagnostic Variables

Diagnostic

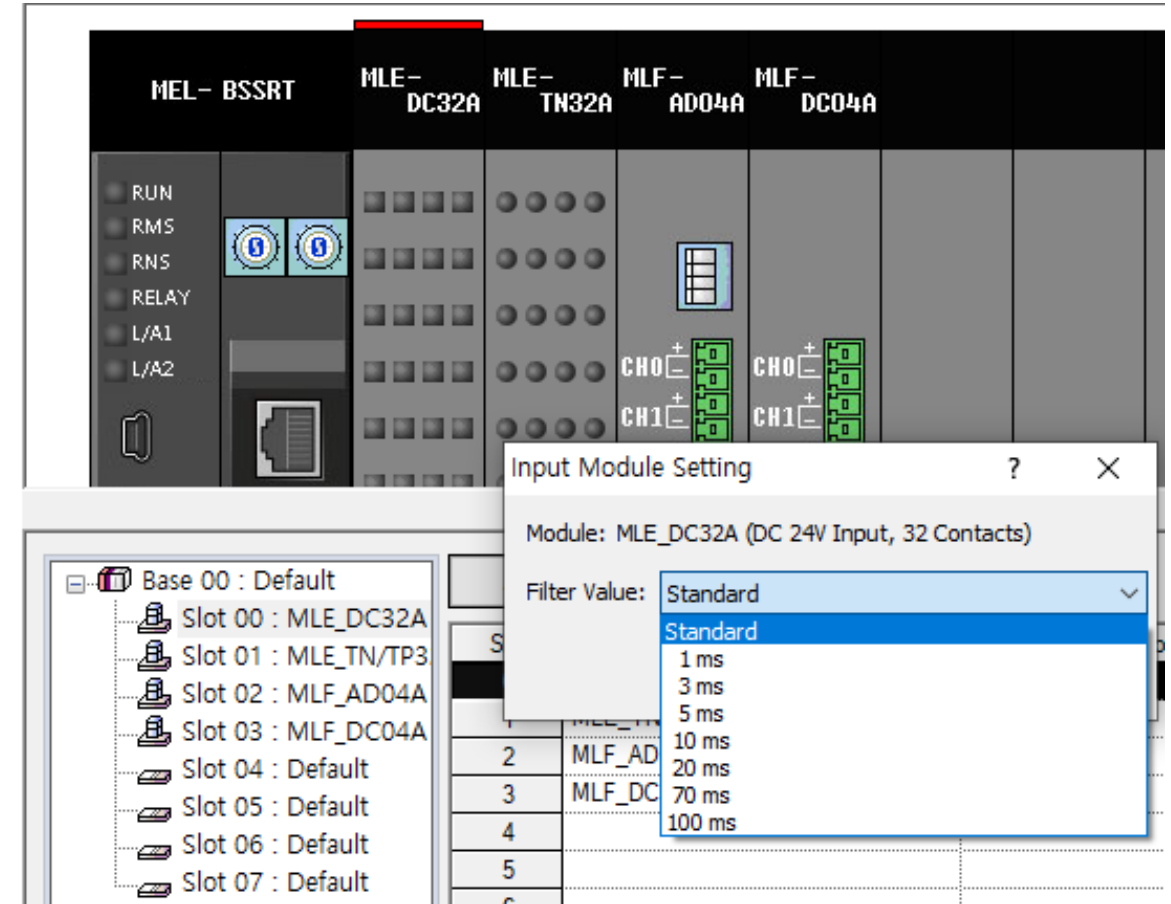
Area:  Address:  Size:

Sets device memory for diagnostic variables. you select Provide EB / Slot diagnostic variable, you can monitor the status information of EB and slot of Smart Expansion. The memory address and size are calculated in words. (At least 24 words required)

# HOW TO CONFIGURE SCAN RATE

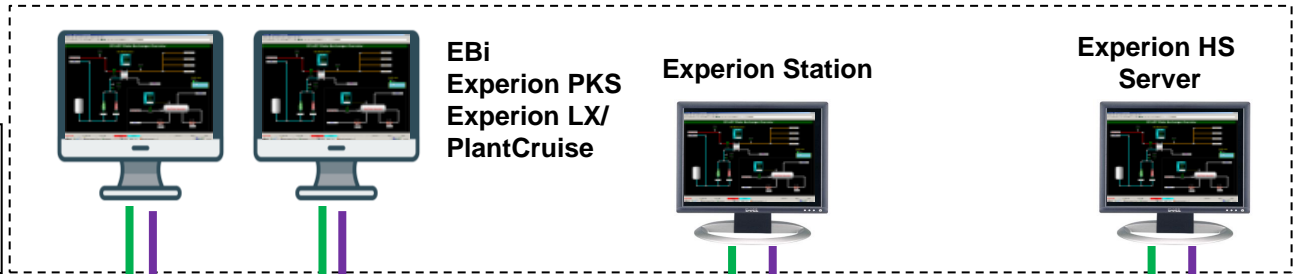
- Scan time, min period time for each node
  - Config Min. Scan time on SoftMaster
  - Calculation:  $(1 + (\text{Nodes} * 0.1))\text{ms}$ , to be integer
- 12slots \* 64ch(DIO), 16chAI, 8ch AO

Nodes	Min Control Scan time
1 ~ 10EA	2ms
11 ~ 20EA	3ms
21 ~ 30EA	4ms
31 ~ 40EA	5ms
41 ~ 50EA	6ms
51 ~ 60EA	7ms
61 ~ 63EA	8ms



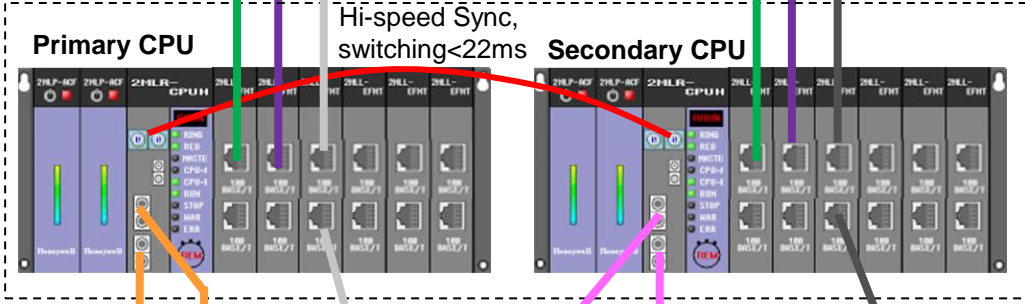
# SYSTEM ARCH.

Ring topology in IO bus(Dual Path)  
100m UTP or 2km FO(MM)/15km  
FO(SM) network, combination of  
Local and Remote IO



SNTP : time-Sync  
OPCUA(server)

Redundant  
Network

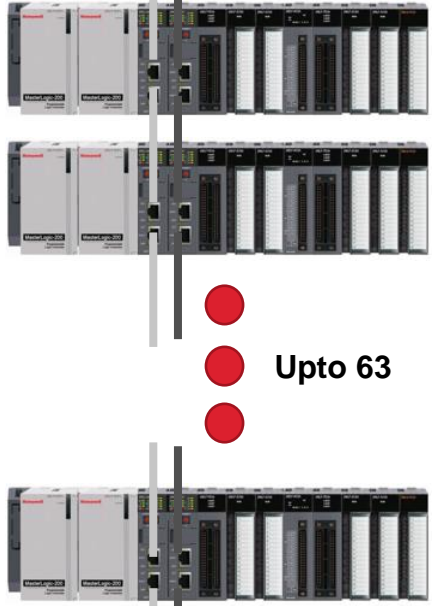


Multiple-network

Smart  
Remote IO

- (1)RING : Ethernet/IP
- (2)Linear and STAR Modbus TCP Ethernet/IP
- (3)Max IO=47k Points

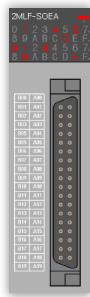
Smart REM.IO  
Adapter+IO



Upto 63

## Event Input (Sequence-Of-Event, SOE)

- Detects the events from the field devices and records the event with a 1ms resolution time tag
- 1ms scanning at modular level
- 300 events per card (max. 3000 events)
- Tight integration with Experion Server
- Time sync with GPS time server internally

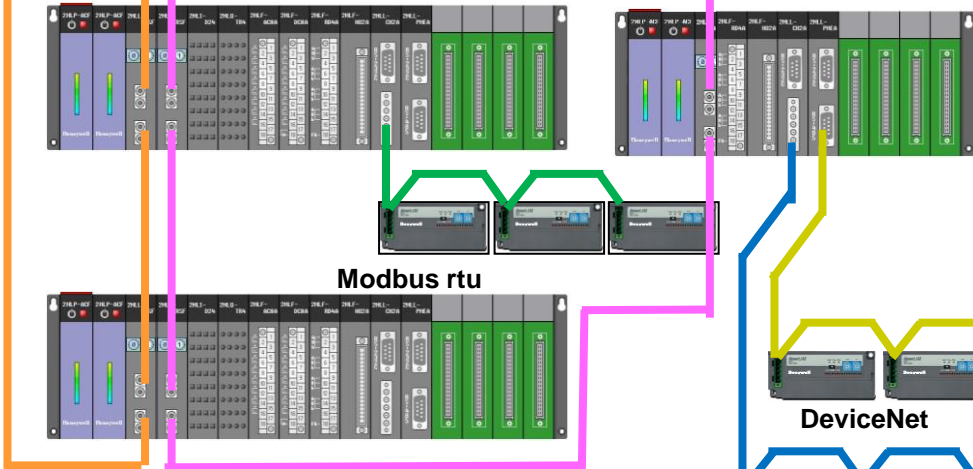


## Datalog Module (2MLF-DL16A)

- Capable to easily save PLC device data without PC
- Capable to save PLC control data without missing any change
- Capable to save a large volume of data file
- Long-term data saving is available since CF card and USB memory with a large volume of up to 16GB can be used(CF2001, Transcend)
- Retrieving the data using USB removable memory



USB port



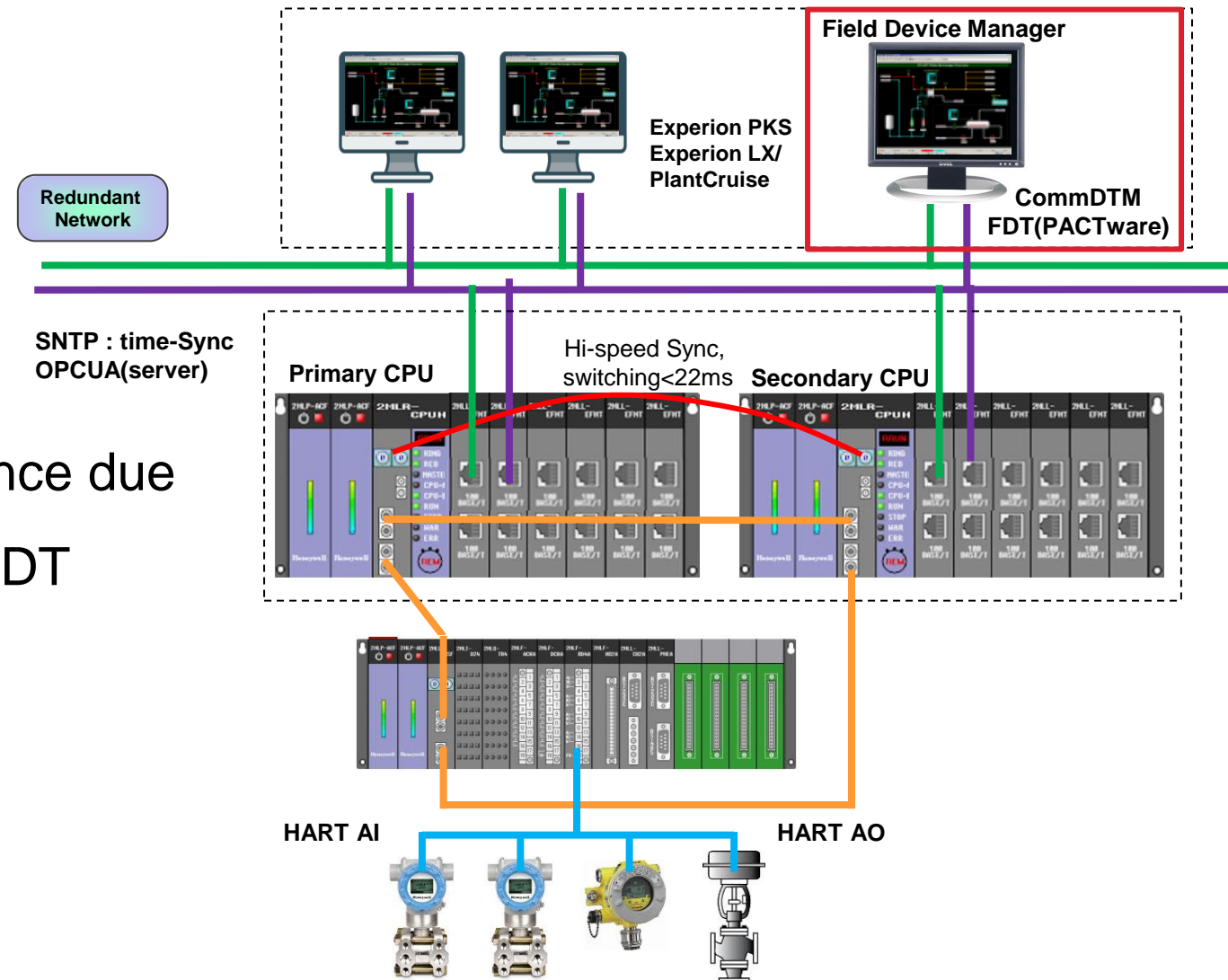
MAX IO stations=31  
MAX Base IO=23800(including 64ch Dig.IO)  
Max Network IO=128000

DeviceNet

Profibus-DP

# HART AND INTEGRATION WITH FDM

- Tight integration with Experion
- Open protocols for multi-vendors
  - Ethernet TCP/IP, Serial comm
- Improved uptime and easy maintenance due to integrated HART device on FDM/FDT



# OPCUA SERVER

Message encryption feature

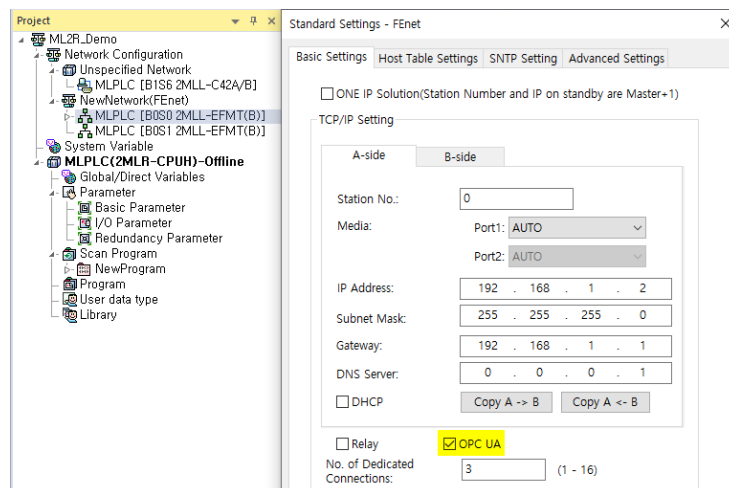
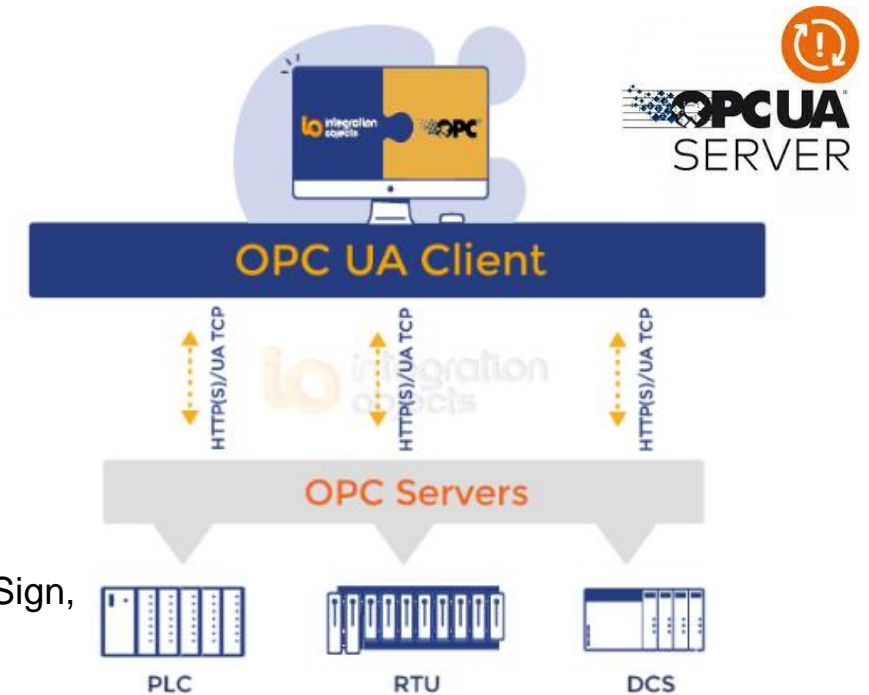
Authentication via Certificate

User security functions

Variable Monitoring (MonitoredItem) Function through Subscription

Alarm / Event function for variables

- Connect with up to 10 OPC UA clients (Connect 10 Sessions with OPC UA Client).
- Up to 7000 variables can be set for OPC UA.
- Have up to 50 subscription channels, 10 per session.
- Register 1000 and up to 5000 variables (MonitoredItem) per subscription channel.
- Security Profiles support No Security, 128Rsa15 Sign, 128Rsa15 Sign & Encrypt, 256 Sign, 256 Sign & Encrypt, 256Sha256 Sign, 256Sha256 Sign & Encrypt

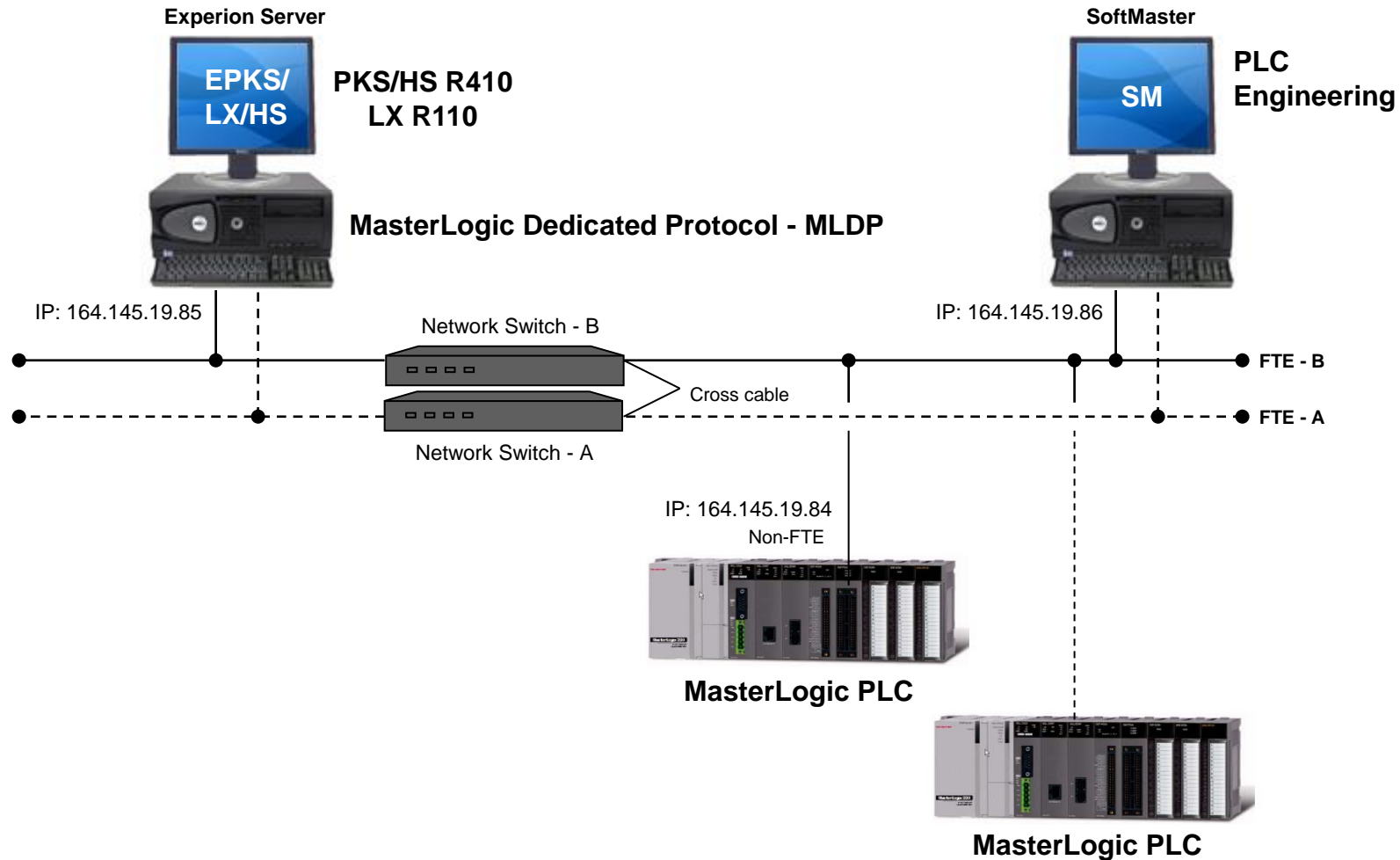


	Variable Kind	Variable	Type	Address	Initial Value	Retain	Used	EIP/OPC UA	HMI	Comment
455	VAR_GLOBAL_CONSTANT	_F0105_CH2_RA_PERIOD	UINT		58	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH2 rate-of-change alarm detection period setting
456	VAR_GLOBAL_CONSTANT	_F0105_CH2_SCAL_MAX	UINT		24	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH2 scaling range maximum value setting
457	VAR_GLOBAL_CONSTANT	_F0105_CH2_SCAL_MIN	UINT		23	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH2 scaling range minimum value setting
458	VAR_GLOBAL_CONSTANT	_F0105_CH2_SENSOR	UINT		03	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH2 sensor type setting
459	VAR_GLOBAL_CONSTANT	_F0105_CH3_AVG_SEL	UINT		13	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH3 average processing method setting
460	VAR_GLOBAL_CONSTANT	_F0105_CH3_AVG_VAL	UINT		17	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH3 average value setting
461	VAR_GLOBAL	_F0105_CH3_BOUT_CO	UINT		71	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH3 sensor d
462	VAR_GLOBAL	_F0105_CH3_ERR_COD	UINT		63	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temp. Measuring Module: CH3 setting



# MLPLC INTEGRATION WITH EXPERION

## ■ MLPLC Integration Solution.



# MLPLC INTEGRATION WITH EXPERION

## ■ MLPLC Integration Elements.

- **SoftMaster** - Writing ladder logic program and monitor (device monitoring window) the PLC values and/or force values into PLC.
- **Quick Builder** - Configuring MasterLogic Channel, Controller, Analog and Status Point.
- **Experion Station** - Monitoring the online status integration with PKS.  
- Change online status of MLPLC Channel and Controller.
- **MLPLC** - The MasterLogic PLC (ML200).
- **MasterLogic Server**- PLC are integrated to PKS through the ML Server. After a download, it starts communication with PLC and does the following:
  - Reads PLC information and write to PKS Server.
  - Write values from PKS Server to PLC.
  - Transfer System status, I/O information, alarms/events associated with PLC to PKS Server which can be monitored.
- **Experion Server** - Costs effective open control system and provides Plant Wide Control.  
- Address critical manufacturing objectives to facilitate sharing knowledge and managing work flow.

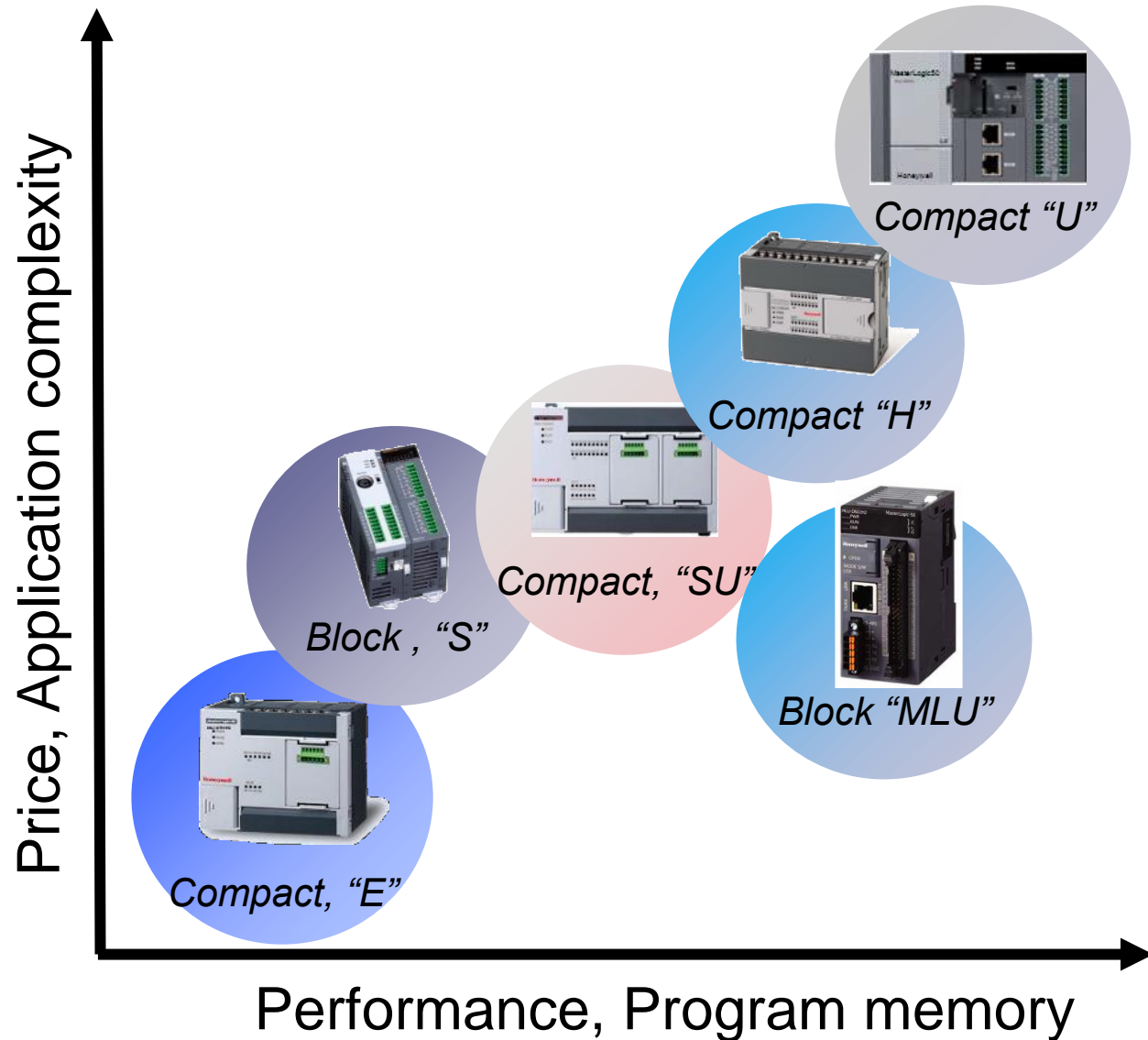
# MASTERLOGIC PLC 50

**Portfolio of ML50 PLC**

**Connectivity and Interface**

**Advanced Tech and updates**

# PORTFOLIO



## ML50 models..

*Ultimate Perform.& IoT service*  
**MLI "U"**

*High Performance*  
**MLC, MLI "H"**

*Small Package*  
**MLM "S", MLU**

*Cost Effective*  
**MLI "SU", "E"**

*Compatibility*  
**Over MLDP, Modbus**

# PRODUCT INFO

Product	Model	Supplying Power	Serial Network	Ethernet	IO points	Built-in Func.				Safety cover
						HSC	Position	Pulse catch	Network Motion	
Non-IEC	MLM 'S'	DC24V	RS232C, RS485		DI/DO-TR/Relay 7 modules	○	○	○		
	MLC 'H'	AC100-240V DC24V	RS232C, RS485		DI/DO-TR/Relay 10 modules	○	○	○		
IEC61131-3	MLI 'H'	AC100-240V DC24V	RS232C, RS485		DI/DO-TR/Relay 10 modules	○	○	○		
	MLI 'SU'	AC100-240V	RS232C, RS485		DI/DO-TR/Relay 8 modules(2 opt)	○	○	○		D_40SU
	MLI 'U'	AC100-240V DC24V	RS232C, RS485	On board	DI/DO-TR/Relay 8 modules(wt motion)	○	○	○	○	
	MLI 'E'	AC100-240V	RS232C or RS485		DI/DO-TR/Relay 2 option module	○	○	○		
	MLU	DC24V	RS232C, RS485	On board	DI/DO-TR 7 modules(w motion)	○	○	○	○	

HSC : High-Speed Counter, H=Hi-Performance, S/SU=Standard, E=Economic, U=Ultimate perform.



# PRODUCT – MLI ‘U’

**MLI U** sets new standards in **Ultimate Performance** with its many innovations.

**IoT**(Internet of Things) realizes smart factories, ‘**User-Oriented**’ controller, Webserver

**All-in-one**, analog IO and Ethernet

- Analog Input and output upto 8 channels(optional)
- Basically, built-in Ethernet dual ports
- Dual ports Ethernet switch, Daisy Chain(without any Enet switch)

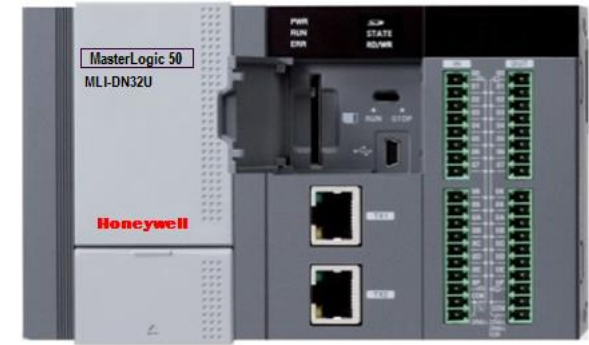
**Various communication options**, serial, Ethernet(TCP)

**Wide protocols** : Modbus, MLDP

Externally, Ethernet IP, EtherCAT, CANopen, Profibus-DP

**Data acquisition** with external memory(SD card, upto 16GB)

**Value added service**, FTP Link, Diagnostics info, e-mailing with attached data log file



# PRODUCT – MLU-DN32HP

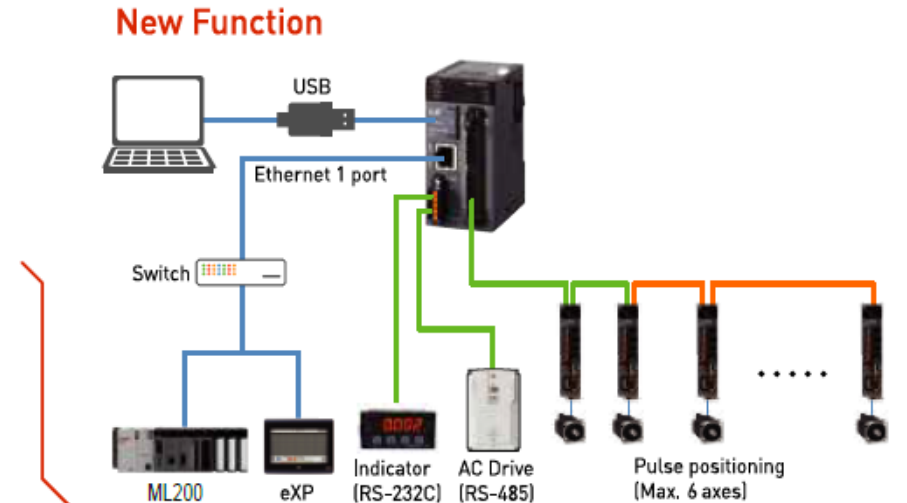
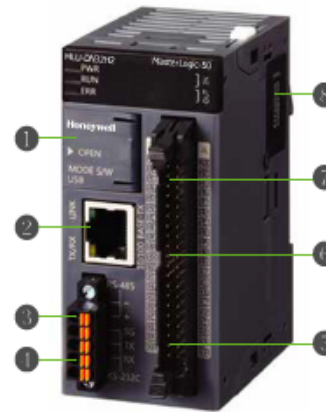
**MLU** series is a new standards in **Advanced Performance** with its many innovations.

## Slim size and hi-performance

- DI/DO and position control, EtherCAT modules for motion control
- Basically, built-in Ethernet one port, Modbus TCP
- Data retention: no-data loss even after long term power-off

**Various communication options,**  
serial, Ethernet(TCP)

**Wide protocols :** Modbus, MLDP  
Externally, Ethernet IP, EtherCAT, CANopen,  
Profibus-DP



## Built in Function

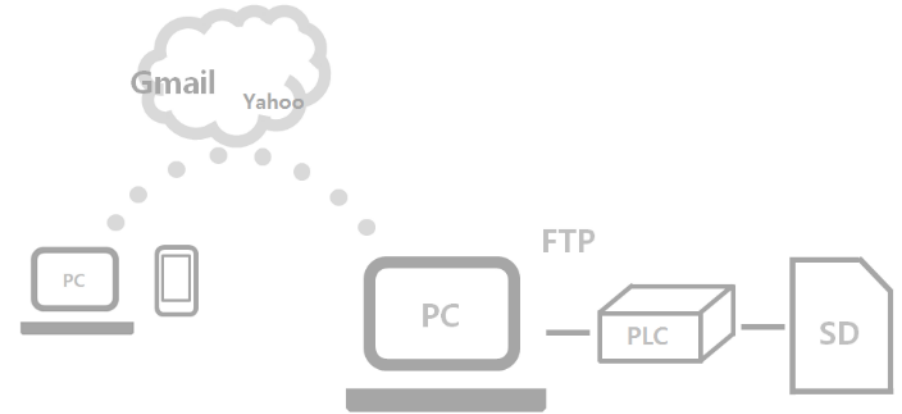


Connectivity and Expandability

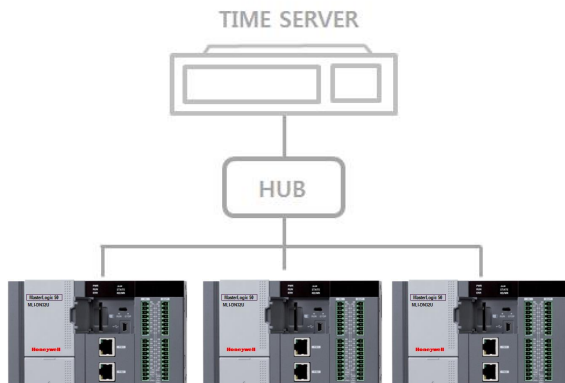
More interfaces are available, Profibus-DP, Ethernet/IP, CANopen

# EMAIL SERVICE AND SNTP FOR MLI U AND MLU

- SMTP for e-mail service
  - Send email when user-defined conditions happen
  - Send email when mode of PLC changes (RUN, STOP, STOP ERROR, ERROR)
  - Send email with a log file (.csv) when data log event occurs



- SNTP for Time Sync
  - Time synchronization with simple IP setting
  - Easy to build up comprehensive coverage of wide-used open automation network



2015-03-15 17:03:04 2015-03-15 17:03:04 2015-03-15 17:03:04

FTP / Web Server Setting

☒ Use SNTP time synchronization

IP Address of the

Port Number

Synchronizat

# **SOFTMASTER**

**Features**

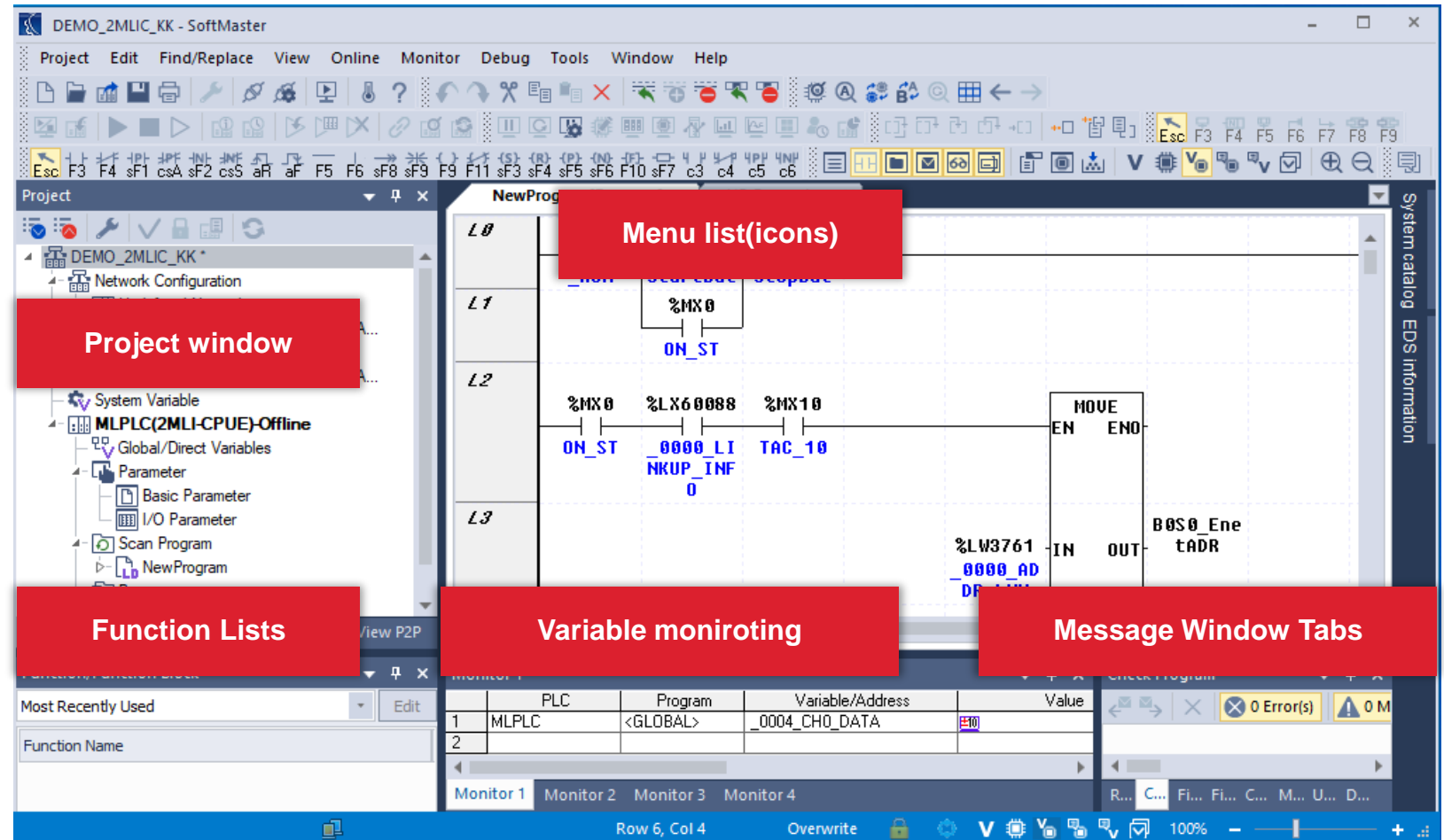
**Services for users**

# PROGRAMMING – SOFTMASTER V4

- New format and integrated all configuration tool, configurable programs and communication setup on one page
- Easy to build up settings of parameters including communication, Programming and monitoring
- Protection against Cyber attack(Vulnerability)
- No License



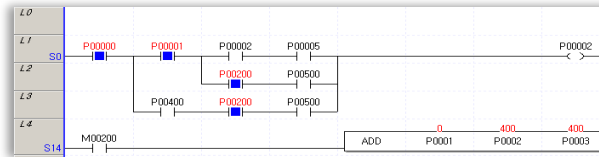
- Programming
- Configuration -Network
- Debugging
- Controller simulation
- Monitoring
- Trouble-shooting
- Documentation
- Maintenance etc.





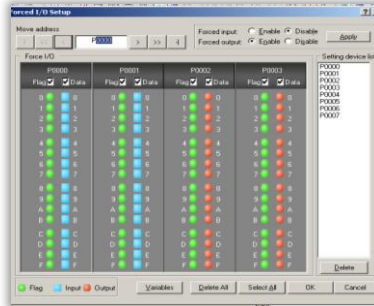
# SOFTMASTER – MONITORING

Ladder Monitor

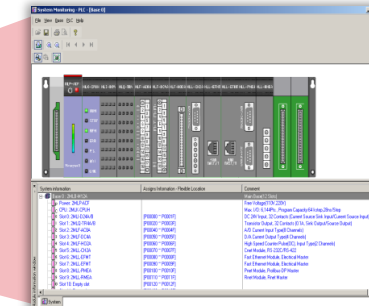


Variable Monitoring

PLC	Type	Device	Value	Variable	Comment
1	PLC	BIT	P00000	RUN	RUN
2	PLC	BIT	P00001	STOP	STOP
3	PLC	BIT	P00002	ERROR	ERROR
4	PLC	BIT	P00003	DEBUG	DEBUG
5	PLC	BIT	P00004	LOCAL_CON	Local control
6	PLC	BIT	P00005	MANUAL_CON	Manual mode ON
7	PLC	BIT	P00006	REMOTE_CON	Remote mode ON
8	PLC	BIT	P00007		
9	PLC	BIT	P00008	RUN_EDIT_BIT	Transferring a program or online editing mode
10	PLC	BIT	P00009	RUN_EDIT_DONE	Processing online editing internally
11	PLC	BIT	P0000A	RUN_EDIT_DONE	Online editing done
12	PLC	BIT	P0000B	RUN_EDIT_HLG	Online editing abnormal termination
13	PLC	BIT	P0000C	CHMOD_KEY	Change operation mode by the switch
14	PLC	BIT	P0000D	CHMOD_RESET	Change operation mode to the local PLC
15	PLC	BIT	P0000E	CHMOD_RESET	Change operation mode to the remote PLC
16	PLC	BIT	P0000F	CHMOD_LINK	Change operation mode by the remote communication module
17	PLC	BIT	P00010	FORCE_IN	Force input
18	PLC	BIT	P00011	FORCE_OUT	Force output



Force I/O



System Monitoring

Monitoring, @ V4.7x  
 -User-defined FBs  
 -Auto-scan VFDs  
 -Advanced settings on Ethernet/IP



Trend Monitor

Item	Max/Min value	Current value
CH0 AD value	4214 / 4211	4213
CH1 AD value	0 / 0	0
CH2 AD value	0 / 0	0
CH3 AD value	0 / 0	0
CH4 AD value	0 / 0	0
CH5 AD value	0 / 0	0
CH6 AD value	0 / 0	0
CH7 AD value	0 / 0	0

Item	Setting Value	Current Value
Channel	CH0	
Channel status	Disable	Enable
Input range	4~20mA	4~20mA
Output type	0~16000	0~16000
Filter process	Disable	Disable
Filter constant		
Average setting	Disable	Disable
Average processing	Count-Air	Time-Air
Average value	2	4

Special Module Monitoring

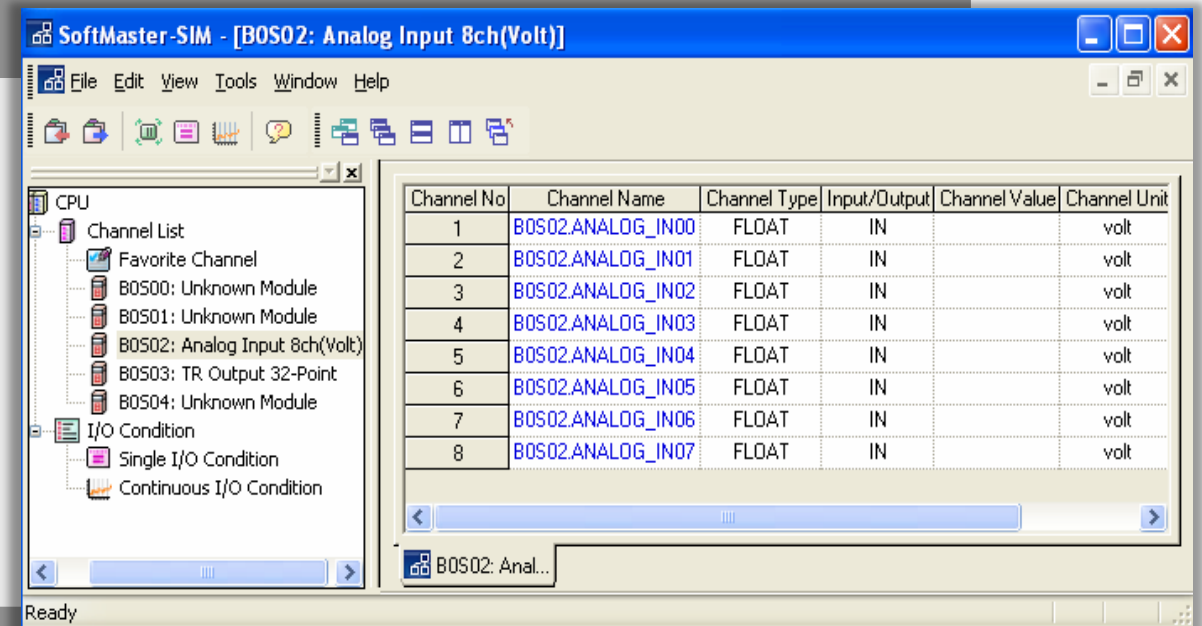
Comm status Monitoring  
 -Frame monitoring  
 -Service status and capturing packets

# SOFTMASTER - SIMULATOR

## Program Simulator

Test and program the controller without the need of a physical machine

- Support all type languages (LD / IL / SFC / ST / FB)
- Program simulation
- Online editing function
- Debugging function
- Module Simulation
- External I/O condition



- A **single menu click** from SoftMaster: “Start Simulator”
- **No need to modify user program** just for simulation purposes
- **No need to configure I/O module database separately** – integrated with SoftMaster configuration

# COMPARISONS-MLPLC VS CE PLC

## MasterLogic 200



The highlights of MasterLogic-200 PLC system are:

- Powerful & Versatile CPU (32bit high speed / memory, IEC 61131-3)
- Compact footprint
- Modular options (power supply, wide I/O modules, interface options)
- Flexibility in module assignment – installable and detectable any IOM.
- Open networks (Fast Ethernet, UTP/FO, serial RS232C /422/485)
- Open protocols (Profibus-DP, MODBUS ASCII/RTU/TCP, DeviceNet, Ethernet/IP, BACnet-IP, OPCUA, EtherCAT, CANopen)
- Peer-to-Peer networks (Dedicated Fast Ethernet on UTP/Fiber-optic)
- Simulation Environment to test control logics.
- Engineer-friendly software (wide connections, easy configuration & trouble-shooting)
- SNTP : Time Synchronization with server on network

## ControlEdge PLC



- Auto-mapping of PLC variables into Experion
- Inbuilt PLC System diagnostics displays in Experion, HART device Diagnostics (FDM)
- Cyber Security- ISA EDSA Level 2, OPC UA interface
- Universal IO with HART, Serial interface card & more
- Flexible IO network- Ring, Star, Mixed
- User defined function blocks
- Simulation & Cloud Engineering
- Best-in-class Connectivity: Ethernet/IP, DNP3, PROFINET, MQTT, IEC 60870, Modbus TCP/IP, Serial
- CDA peer to peer with Experion Controllers

# COMPARISONS-MLPLC VS CE PLC

Item	MasterLogic PLC	ControlEdge PLC
Name / Rev No	<b>SoftMaster V4.72.x</b>	<b>ControlEdge Builder, R174</b>
Char. for Tool	Config tool for Masterlogic PLC, 200/50 and Remote IO	ControlEdge PLC, RTU
Vulnerability	Complied(2022.Oct)	Complied
Standards	IEC61131-3(LD, ST, IL, SFC)	IEC61131-3(LD, ST, IL, SFC)
Programming Environment	<b>Function Block with LD(Essential, EN)</b>	Function Block with Instruct. No(Optional, EN)
Editing/Modifying	Graphically block editing on grid	Graphically editing, Drag-Drop
<b>Distributing tool</b>	<b>FREE</b>	<b>Need to set License</b>
<b>System Monitoring</b>	<b>Graphically(same shapes, and modules)</b>	only text
Accessing module info	OK, all the modules for IO, Interface -Monitoring data, parameters -parameterized	OK for configuring, IO and Interface -Monitoring operations, data -NA
Communication	Checking parameter, operating condition Frame Monitoring, capturing	Checking parameter, operating condition -
<b>Interface and Communication</b>	<b>HART devices and CommDTM(HART pass-thru)</b>	<b>HART device and HART/IP(Fully integrated with FDM)</b>
<b>Available interface</b>	<b>Ethernet : Ethernet/IP, ModbusTCP, BACnet/IP, EtherCAT, OPCUA(Server), DNP3(outstation), SNTP, SMTP</b> Serial : Modbus rtu, Profibus-DP, DeviceNet, CANopen	<b>Ethernet : Ethernet/IP, ModbusTCP, OPCUA(Master&amp;Server), DNP3, PROFINET, IEC 60870-5-104</b> Serial : Modbus rtu
Hardware		
Compatibility	Hardware, fully compatible for all versions Software, Config data, program logic	Hardware, not compatible for lower version Limited to access Software, config data, limited to upgrade program logic
Hot-Swappable	OK(Wizards on SoftMaster)	OK
Maintenance	Available thru SoftMaster	Available thru Builder
Firmware Upgrade	Interface modules on SoftMaster CPU need to use a separated tool	CPU, EPM, UIO, serial modules on CE Builder

# COMPARISONS-MLPLC VS CE PLC

Services on Config Tool	Several modules	Several pages
	Programming Logic	Programming Logic
	Parameterizing IOMs	Parameterizing IOMs
	Parameterizing Interface modules	Parameterizing Interface modules
	Config for Profibus-DP(Master) & DeviceNet	-
	Smart Remote IO and Adapters+IOM	Config for Remote IO(Ethernet/IP)
	PSRA(Profibus-DP Slave Remote Adapter) + IOM	-
	Motion Control config.	-
	System Monitoring	System Monitoring
	Frame monitoring	-
	Firmware Upgrade	Firmware Upgrade
	Device Monitoring or variable monitorign tab(need to register)	Variable monitoring on Global/Local VAR table



# ROADMAP

**MasterLogic 200**

**MasterLogic-50**

**New function and Modules**

# MASTERLOGIC PLC ROADMAP

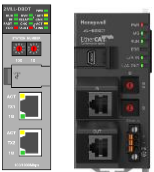


ML CPU-ML200  
'Z' series

Future 2023 and beyond  
*(Connectivity & Integration)*

ML PLC New platform

- Integration with FDM via Enet(non-Redundant)
- Tighter Experion integration
- Remote adaptor for Extended IOs, ML200 Red. Ethernet/IP with Ring topology, Modbus/TCP
- MLIO Integration with CE PLC via Smart adaptor (Ethernet IP)
- Snet modules on RIO(Smart adaptor)



**Q4 '20-Q1 '21**

## Improvement

- Multiple protocol in Enet OPC UA(Server), Modbus, EthernetIP, MLDP, user-defined on Module : 2MLL-EFM\_B
- **BACnet-IP** : integrate with EBi application for BMS

**Q4 '21**

## Improvement

- **MLIO integration with CE PLC** : RemoteIOM on ML PLC, DHCP, Ring, Ethernet/IP
- 2MLL-DBD# with ML200IOM
- MEL-BSSR# with ML50 IOM



**Q1 '23**

## Improvement

- Snet on Smart adaptor
- Smart-IO with ML200 Red. DHCP, Dual-RING
- Advanced integration with VFD
- Implement DNP3 on ML200
- Integration with FDM(non-Red)
- Modbus config and operation

ML PLC Exp.adaptor  
Ethernet/IP(IOs)

**Q4 '23-Q1 '24**

## Improvement

- Dual Ring SmartIO on ML 200 Red.
- **New CPU 'Z' series**

## New development

- IEC61850
- New Safety PLC(ML50S)**
- Enhanced operating temp.
- Wide protocols
- Cost-Competitive

**Internal Only**

# HCIR SERIES

**Portfolio**

**Features**

**New product, HCiRB (Processor)**

# HMI “HCIR” SERIES

## Premium :

HCiRP + HCiRD10/12/15

- Separated display and processor part
- Multi-media, IP cam, HDMI out
- Wide protocol

## General purpose (Hi-perform.)

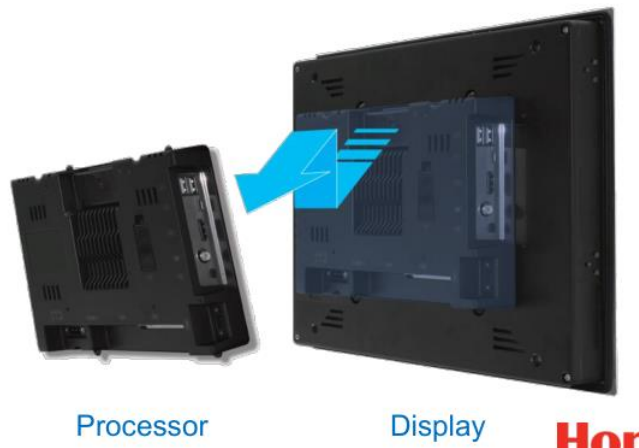
HCiRX05/08/10/12/15

- Hi-performance
- Wide Interface

## Economic (Market-Oriented)

HCiRW05/07/10

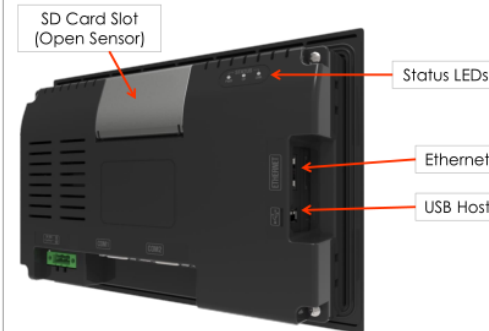
- Good price, better performance
- Wide Interface



HCiRW05 View  
HCiRW07 View  
HCiRW10 View



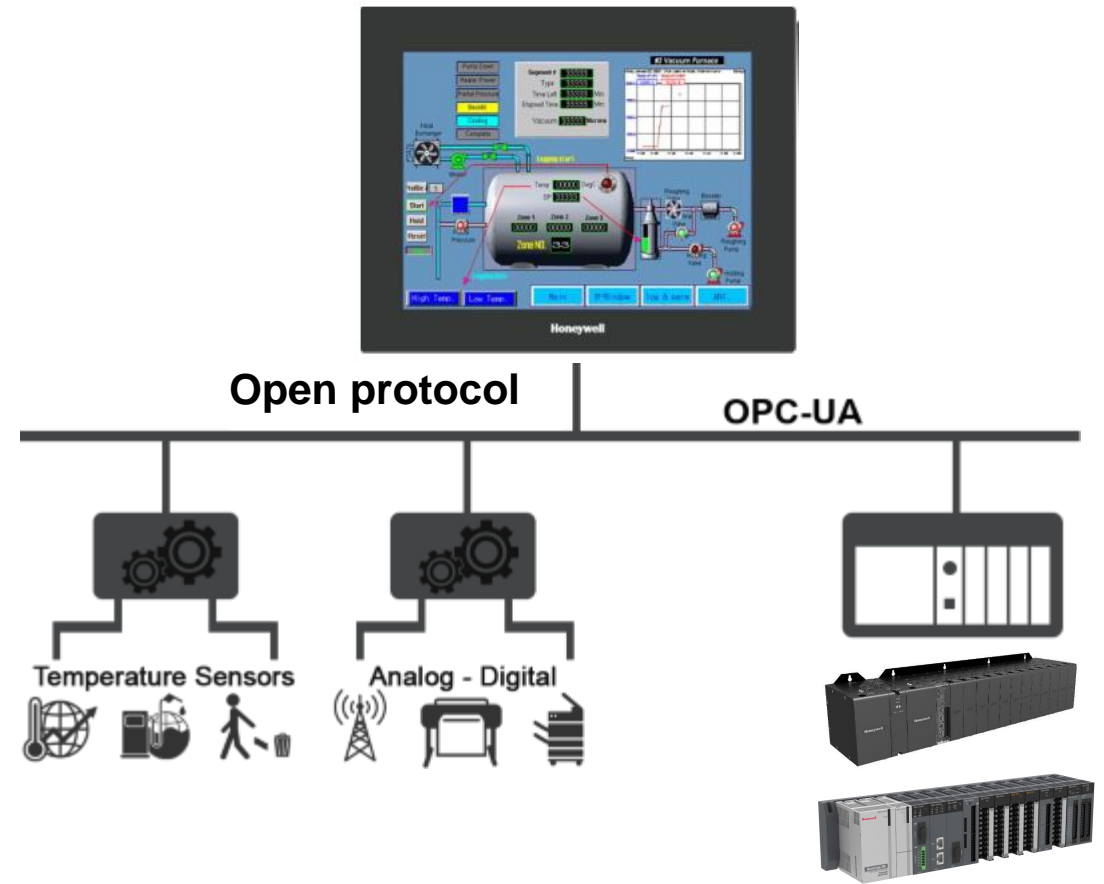
HCiRW07 View (Rear view)



All in one solution-Market Oriented

# OPCUA CLIENT

- Automatically accessing controller and upload all info/variable groups
- Easy to config and to setup comm table
- Open protocols for multi-vendors
  - Ethernet TCP/IP, Serial comm, over 250+ drivers
- Improved uptime and easy maintenance due to engineering tool , FREE



**DCS, Honeywell  
Experion LX/  
PlantCruise**



# HCIRB - PROCESSOR PART FLEXIBLE DISPLAY

## Features

- Processor part without a display, 24Vdc power supplying
- Minimized form factor to processor from standard platform
- Selectable screen for each purpose, application
- Installable on back-side of Monitor(VESA) or DIN-Rail, wall mounting on panel(cabinet)
- Configurable project on same tool, HDS(HCi Design Studio)
- HDMI-out for choosing a display in user side, FHD(1920x1080)
- USB host, to support Mouse, Keyboard, bar-code reader, printer(PCL)
- Interface, 2xEnet, 2xSnet, and wide protocols for control system
- SD(SDHC) upto 32GB and USB removable memory(FAT32)
- Expandable Monitor over HDMI, Touch interface over USB



# HDS(HCI DESIGN STUDIO)

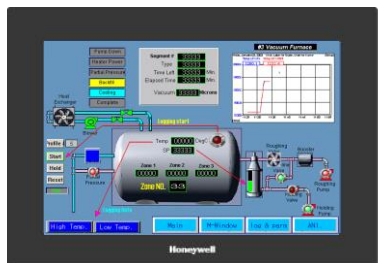
Free

## Features

- Intuitive menu and reducing configuration time
  - Scalable tags&functions on editing, multi-language
- State-of-the-Art, improved service for engineering work
- Upload and download project over Ethernet, USB, etc
- Immediately downloading thru Ethernet
- Upload gathering data, Logging, Alarm/event data
- Check-up the latest Firmware before transmitting project
- Effective error checking and set focus-on the tag
- Efficient setup Tag data, uploading variables for user program
  - Modbus map for ControlEdge PLC, HC900
- Easy & convenient to edit tags for OPCUA
- Configurable scripts for each tag for more dynamic operation
- Widely open-protocols, Ethernet, DNP3, PROFINet, EtherCAT, Robotics



# HCIR SERIES ROADMAP (2023-)



- Adding protocols
- RING Topology on network(Ethernet/IP)
- Cyber Security

**Q4 '22**

## Improvement

- OPCUA,DNP3 (Mapping)

**Q2 '23**

## Improvement

- Remapping address for HC900
- Editing maps\_Modbus

**Q4 '23**

## Improvement

- WEB Browser(access HTML5,XML)
- Interface with SCADA(station)
- Item with Security
- HCi Design Studio V2.x

## Improvement

- WEB client(access HTML5,XML)
- Interface with SCADA(station)
- New Item, processor(HCiRB)
- Compliance to Pharma.

**Q1'24-Q4'25**

## Improvement

- Protocols : IEC60870
- Implement DNP3,multi-master client & server Class0,1/2/3
- Redundant networking
- Compliance to CL1 DIV2



HCiRB



# HONEYWELL VFD

**Portfolio**

**Features**

**Planning to launch a new product line**

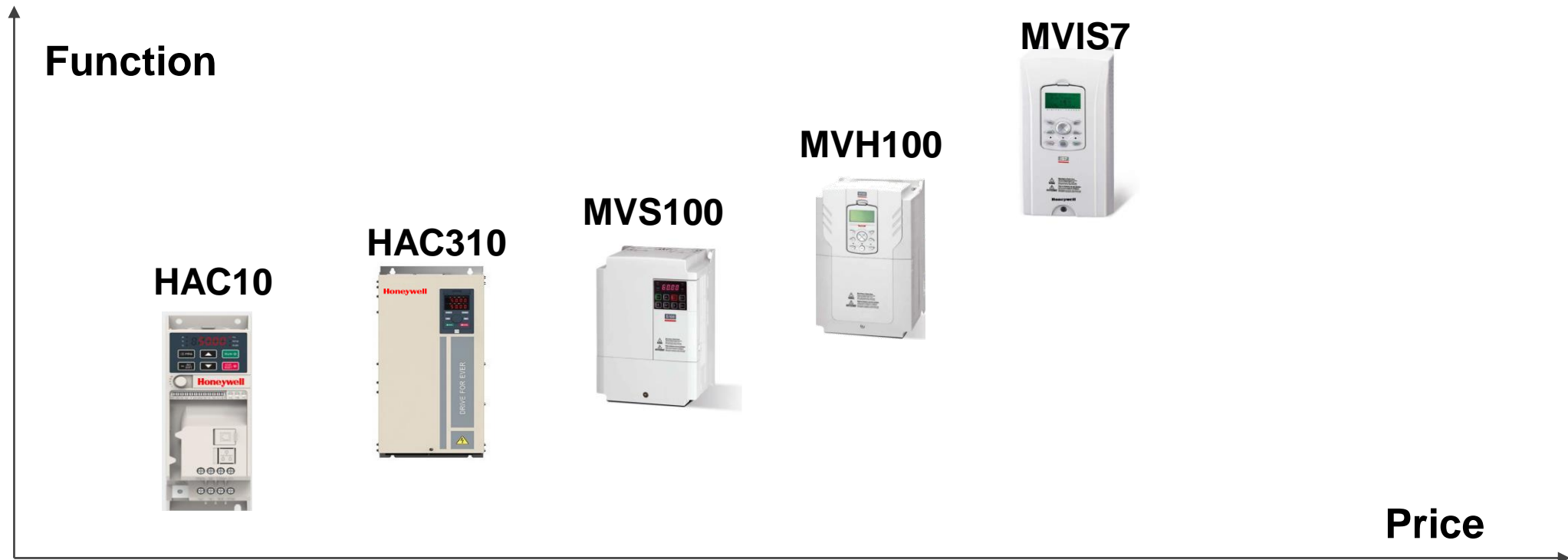
# PORTFOLIO

## Low-end and growing market

- **HAC10** :Mini package, Small to mid power, General app.
- **HAC310** : Standard, mid to hi-power, Logistics

## Enhanced and hi-performance

- **MVS100** : Standard, STO, Oil&Gas, Logistics
- **MVH100** : Fan&Pumps, Infra., BMS
- **MVIS7** : Hi-performance with precise control, winding/unwinding, hoist, crane





# VARIABLE FREQUENCY DRIVES

## VFD Market

- \$4.3Bn HPS Potential SAM, 90% in non-O&G
- 45% of market led by packaged automation providers- Controls+ Drives+ FI
- Significant play of OEMs, Partners and distributors
- Used across all HPS served verticals, great fit for OEMs



## Honeywell VFD

- LV Drives designed for various process applications: 1ph/3ph, 0.4 to 500/1100KW;
- Compact design and versatile connectivity for brownfield
- Seamless integration with Experion DCS and ControlEdge with cyber secure communication
- Option to supply complete packaged power solutions- panels, switchgears, bypass, up to full MCC

*Delivers improved asset performance, significant energy savings, increased in production uptime and profitability*

## Focus in 2023







- Build market awareness and execution competency
- Develop a new solutions for low-end to hi-performance, and onboard preferred partners/distributors for drives in every region
- Promote VFDs delivering to projects
- Engage key OEMs, AVL, pilot
- Differentiate through integration, support and service
- Marketing Campaign- App note, success flash, Demokit, roadshows, competitive loaders
- Launching New VFDs, HAC10, HAC310

**Attach with ModSys, Drive awareness and develop ecosystem**

# HONEYWELL VFD OVERVIEW



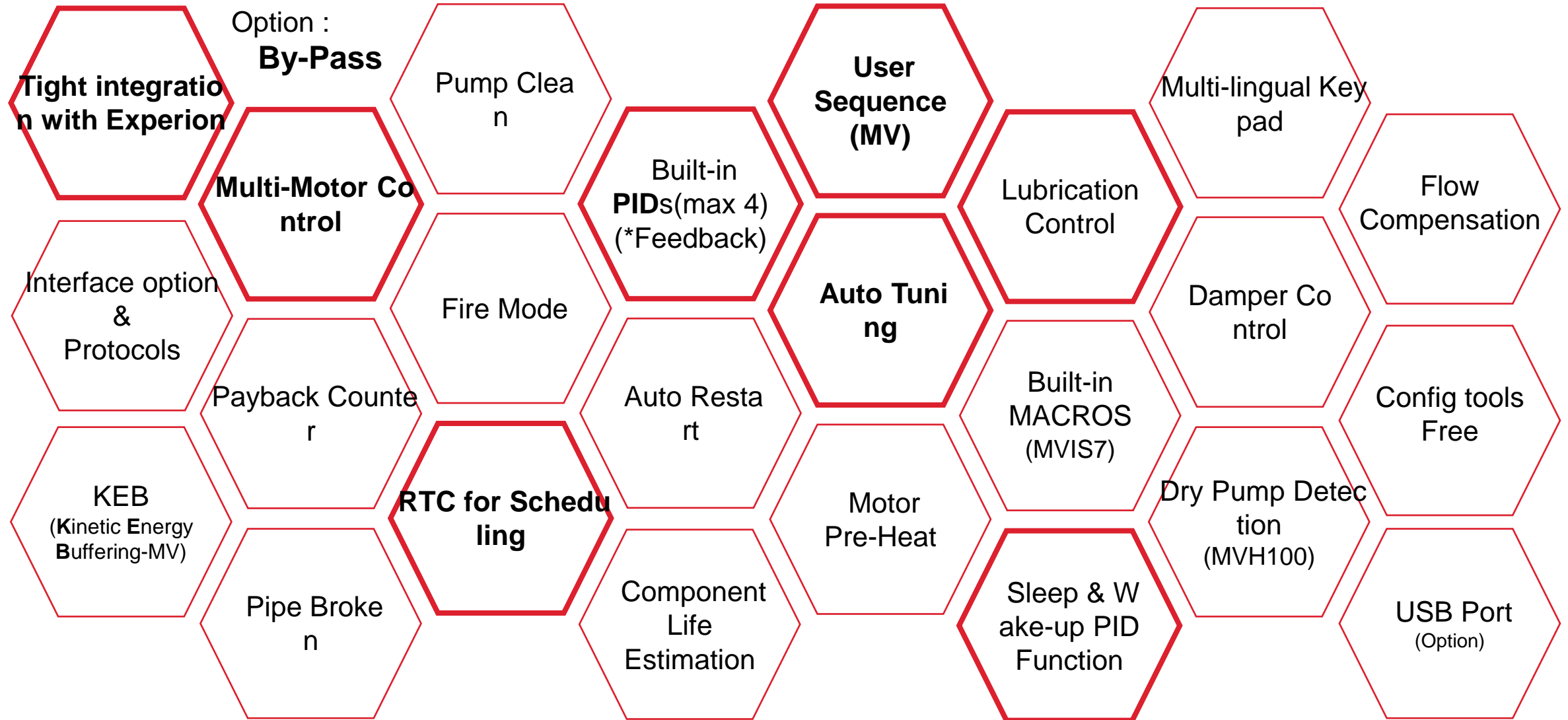
## Delivering High performance and stable control

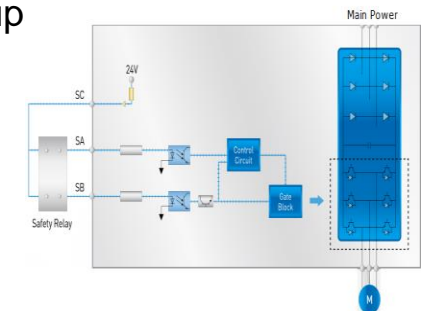
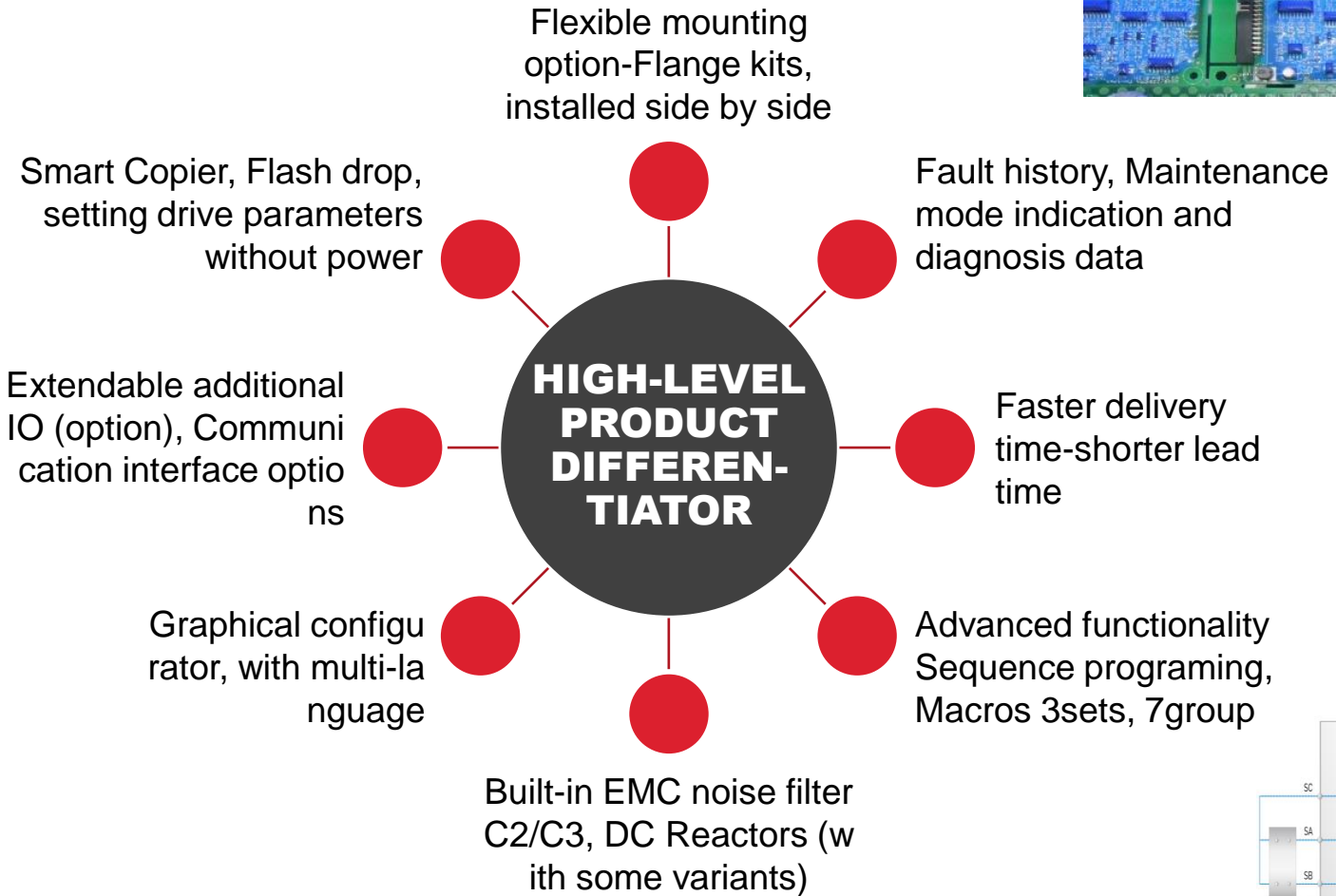
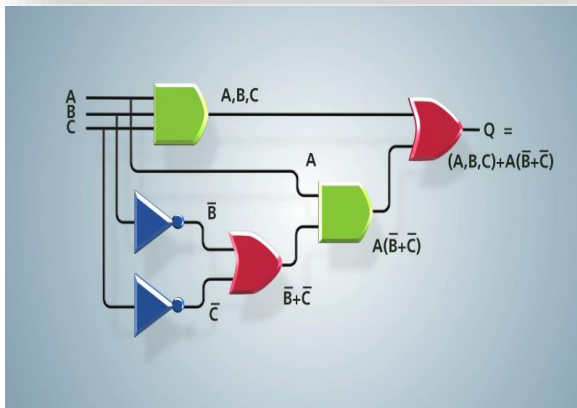
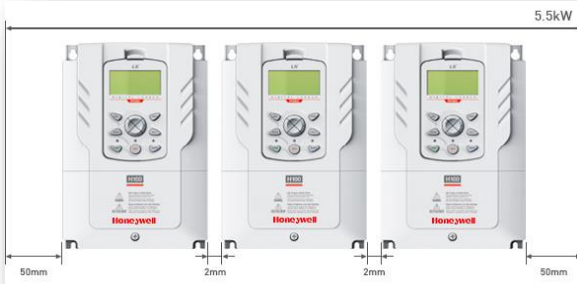
<p>FLEXIBLE VOLTAGE OPTIONS</p> <p><b>1ph/3ph</b></p> <p>1Ph 200V, 3ph 200V, 3Ph 400V</p> 	<p>LOW TO MID-RANGE</p> <p><b>0.4 to 500kW</b> <b>0.4 to 1100kW</b></p> <p>Space efficiency in a compact size</p> 	<p>ENCLOSURE</p> <p><b>IP 66(NEMA4x)</b> <b>IP54</b></p> <p>UL with IP protection</p> 	<p>NOISE REDUCTION</p> <p><b>C2/C3</b></p> <p>Compliant with international standards</p> 	<p>ENERGY SAVING</p> <p><b>30-40%</b></p> <p>Improved P.F. Precise control - PID</p> 	<p>REDUCED THD</p> <p><b>Reactor</b></p> <p>Filtering harmonics</p> 
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- Seamless integration with Experion & ControlEdge with TotalCare
- Noise filtering harmonics, DC reactor, Soft Start
- Multi-copier, Hand-held configurator, multi-lingual display
- MVS100 / MVH100 / MVIS7
- Enclosure protection IP66/NEMA 4X, SIL2, 3C2, Marine Certs
- HAC10 & HAC310
- Enclosure protection IP54/NEMA 3S, 3C2, Certs, CIP

- Improved system performance and support assurance
- Environment and asset protection, up to 40% Energy savings\*
- Faster startup time, efficient operations and decision workflows
- Designed for harsh environment use, with safety and compliance
- Designed for protection, compliance to industrial requirement

# HONEYWELL VFD'S TOP FEATURES





**+ Seamless and cyber secure integration with Experion systems**

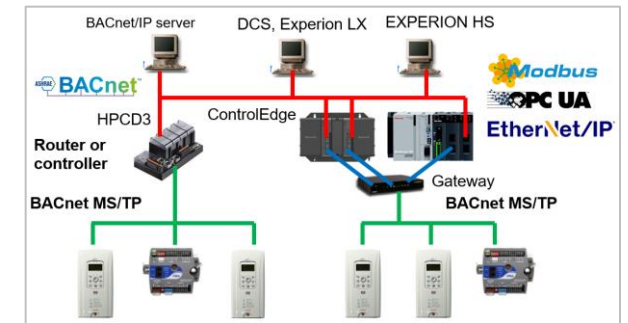
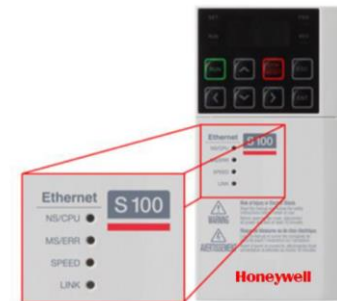
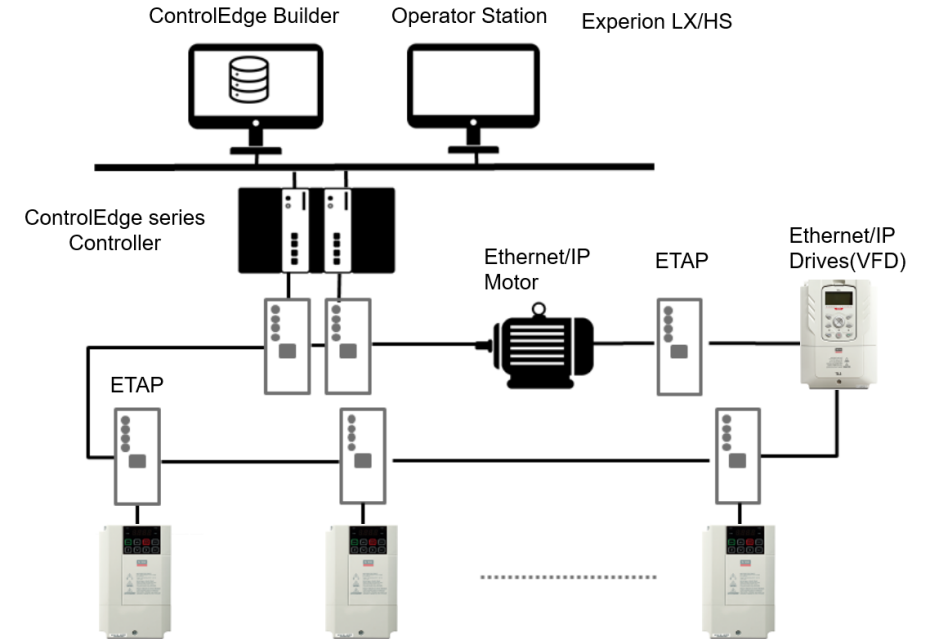
# HONEYWELL VFD INTEGRATION

## With Honeywell Systems

- High-speed bus based seamless integration with Experion DCS and ControlEdge PLC
  - ControlEdge supports Flexible network topology- Star, DLR, Linear
- Built-in library EIP based in Control Builder and ControlEdge builder
- Native drives alarm, event and diagnostics

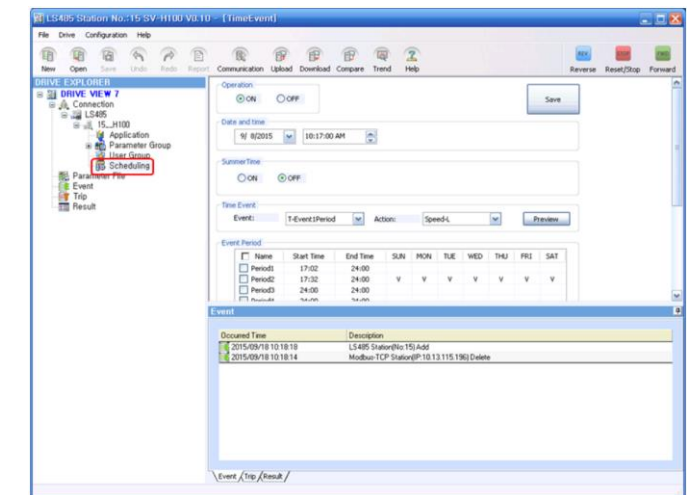
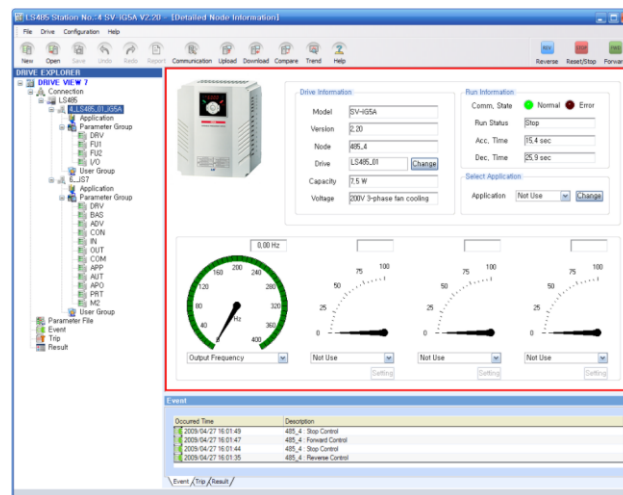
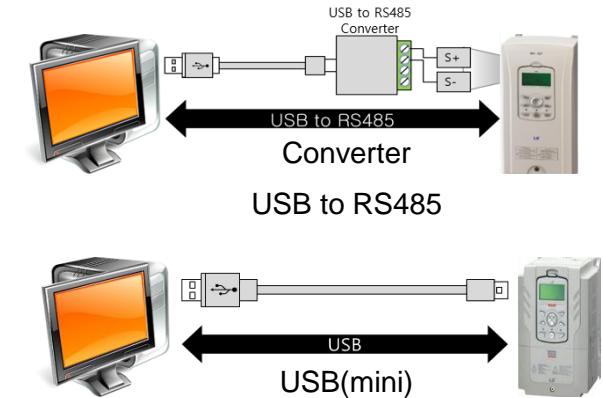
## With Third party Controllers

Serial Comm Protocol	Ethernet-based Protocol	Remark
Modbus RTU	Modbus/TCP	Honeywell, Modicon
Profibus DP	PROFINET	Siemens
DeviceNet	EtherNet/IP	Rockwell
BACnet MS/TP	BACnet/IP	For HVAC
Metasys N2		Johnson Controls for HVAC
CANopen	EtherCAT	Backhoff
	POWERLINK	B&R
CC-Link	CC-Link IE TSN	Mitsubishi



# VFD BUILDER SOFTWARE TOOL

- Software user for configuring VFDs (Variable Frequency Drive)
- Comes bundled with the drives package (no extra price, or part number required)
- Allows users to parameterize, copy and transfer Config, monitor performance, remotely control and generate reports.
- Also various drives analytics such as maintenance mode indication, diagnostics
- Ethernet ports or serial (via converter) can be used to connect the VFD to the computer



Videos on Use of VFD Builder Software Tool - <https://www.youtube.com/watch?v=F7-PVfaxsHs>



# VALUE PROPOSITION

## For

Industrial automation users

## Who need

Energy efficient plant operations, with improved asset life and performance

## Honeywell's

Variable Frequency Drives (VFD) solution

## Provides

Improved asset performance, energy savings & increase in production uptime and profitability

## Unlike

Control packages using DOL or Soft Starter with motors or legacy VFDs that are loosely integrated with the controller

## We do this by

Offering integrated control package with VFDs, with advanced diagnostics, application function blocks and necessary safety standards

## As proven by

Total cost of ownership and lifecycle advantages offered by Honeywell control system worldwide across various industrial applications

# SUCCESS STORY

## Food & Beverage -

- Leading specialist manufacturers of high quality cold pressed oils, Food & Beverage (F&B)
- Needed a control package for their greenfield food oils processing plant
- Solution **Experion LX+ UOC+ VFDs (38)+ Experion Batch+ Virtualization Ethernet/IP, integrated with Experion LX**
- Drives for entire plant- product movement, leveling (pump, motors)
- Led by Australia based channel partner with strong Experion knowhow and integration experience. Who engaged early with tech consultancy and control package selection
- Potential play for loading, unloading, Tank farm and more

### Benefits

Experion batch for better traceability

Single and integrated package with native integration with Honeywell drives



## Metal & Mining -

- Leading specialist manufacturers of steels, rods and wires
- Needed a package for their new steel plant
- Solution **VFDs (23)**
- Drives for entire plant - product movement, Kiln, Feeder, Fan.
- Led by channel partner who engaged early with End customer and control package selection

### Benefits

Single and integrated package with native integration with Honeywell drives



# HONEYWELL VFD ROADMAP



## Promotion & Demo

- Current promotion for rest of the year (running)
- MVIS7 Demo Kit released from April 2022

**Q3 '21**

## Launch

- Honeywell VFD
- MVS100, MVIS7, MVH100 Models
- Introduction & Training
- Emails & Videos

**Q4 '21**

## Enhancements

- VFD Config tool for operation
- Certificates: CE, UL
- Interfaces – Ethernet IP, Modbus RTU

## Marcom

- Bulletin Board Page
- Product image
- Drawings
- Technical Spec document

**Q1 '22**

## Enhancements

- Drives Configuration tool
- Certificate: UL, RoHS,
- Fieldbus: Profinet, BACnet, Lonworks

## MarCom

- Internal Sales Webinar
- Product webpage on new HPS.com
- Partner Communication - Sales Kit
- Social Media Campaign

## Engage across LOBs

**Q2 '22**

## Integration

- ControlEdge R17x integration testing and EIP based FB

## Marcom

- HUG Tech Talks session
- Infographic, Flyers
- Application specific solution note
- Webinar Videos
- PR activities (need basis)

**Q4 '22**

## Enhancement

- Update of Builder tools
- Certificate: Marine

## Marcom

- Drives Micro Sites
- Ebooks
- App Notes
- Yammer announcement
- Application specific solution note

**1Q '24**

## Expand scope

- Contract with new supplier for low-end market
- Alternate VFD offering
- Low-end VFDs (Focused on highly competitive market)
- Seamless integration of Low-end VFDs
- EthernetIP, Profinet
- Experion R520.x integration (C300, EIM)

## Marcom

- Paid media campaign

# **SUCCESSS STORY & ROADMAP**

**New Interface and wide Connectivity**

**ML200**

**ML50**

# SUCCESS STORY



**GAIL (INDIA) LIMITED**  
(A Government of India Undertaking)

## Company and Project Overview

### GAIL() for Petrochemical plant.

While there are currently no automated fire-fighting measures in Singapore road tunnels, fire extinguishers and fire hoses are located every 50m within the tunnels, which are also equipped with heat detectors, air-monitoring sensors and ventilation fans

## Customer Needs and How to win

- (a) Available HART AI and HART AO on ML200 Redundancy, and wide interface option with Honeywell Experion sys, secured the complete Turn-key project.
- (b) Better solution for integrating with FDM over Ethernet, CommDTM
- (c) User will be in advantage position for securing for a long time, if they propose HON solution.

## Solution Offered – USD 150K

ML200R with HART AI and HART AO

## Customer Benefits

- Fully integration ML200 Redundancy with FDM on the Network architecture.
- Reliable product and installation track record and brand





# SUCCESS STORY

## Company and Project Overview

**Land Transport Authority Singapore tender for Water-mist systems for Singapore Tunnels as concerns rise over vehicle fires.** While there are currently no automated fire-fighting measures in Singapore road tunnels, fire extinguishers and fire hoses are located every 50m within the tunnels, which are also equipped with heat detectors, air-monitoring sensors and ventilation fans

## Customer Needs and How to win

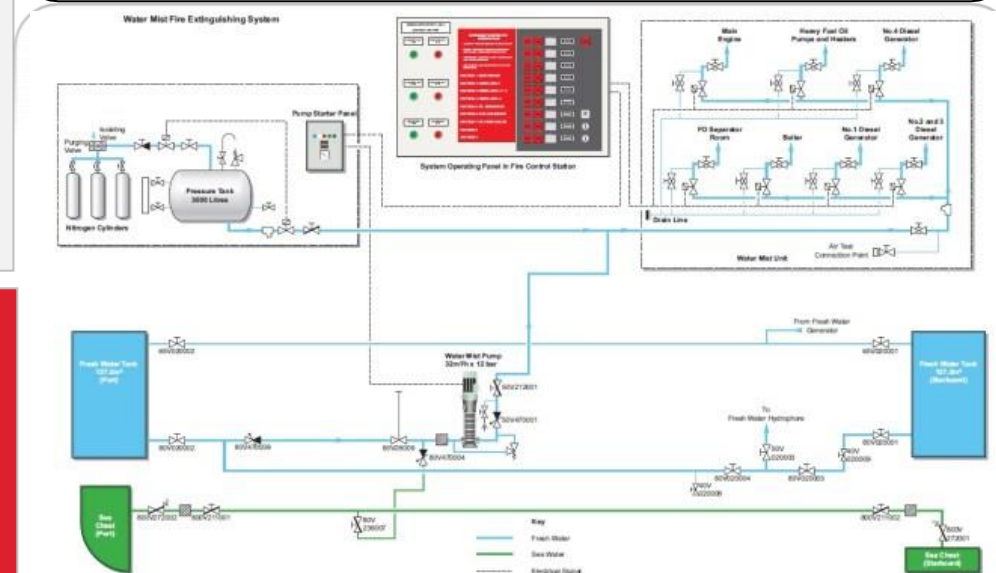
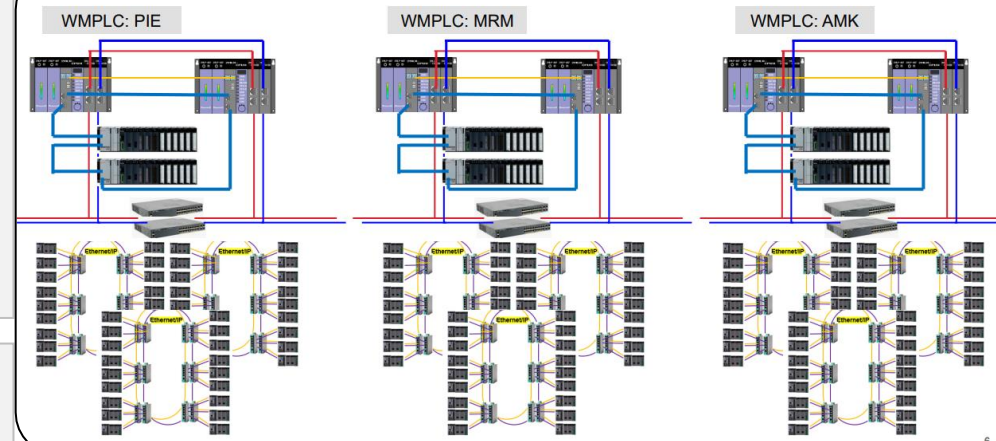
- (a) User experienced in delivering and implementing infrastructure projects with LTA Singapore , using Mitsubishi and Hon MLPLC , secured the complete Turn-key project.
- (b) ML200 and ML50 was a perfect solution to compete against Mitsubishi
- (c) User will be in advantage position for securing 10 years Maintenance contract bid, if they propose HON solution.

**Solution Offered – USD 577K**

ML200R and ML50 – 662 sets

## Customer Benefits

- On par solution against Mitsubishi with ML50 and ML200 Network architecture.
- Reliable product and installation track record and brand





# SUCCESS STORY..

## DUBAI METRO RTA 2020 (HBT)

**Overview:** Roads & Transport Authority (RTA) is Government body of Dubai, UAE. The Dubai Metro is a rapid transit rail network spanning 49 stations and covering a total length of 75 kms

As part of their Expo Event in 2020 they are expanding existing Metro Network to 2020 Exhibition Venue. Total 7 stations are getting added (15km). Honeywell Building Solutions (HBS) were invited to bid for SIL2 and general purpose PLC for Environmental Control System (ECS) and Tunnel Ventilation System (TVCS)

### Customer Need:

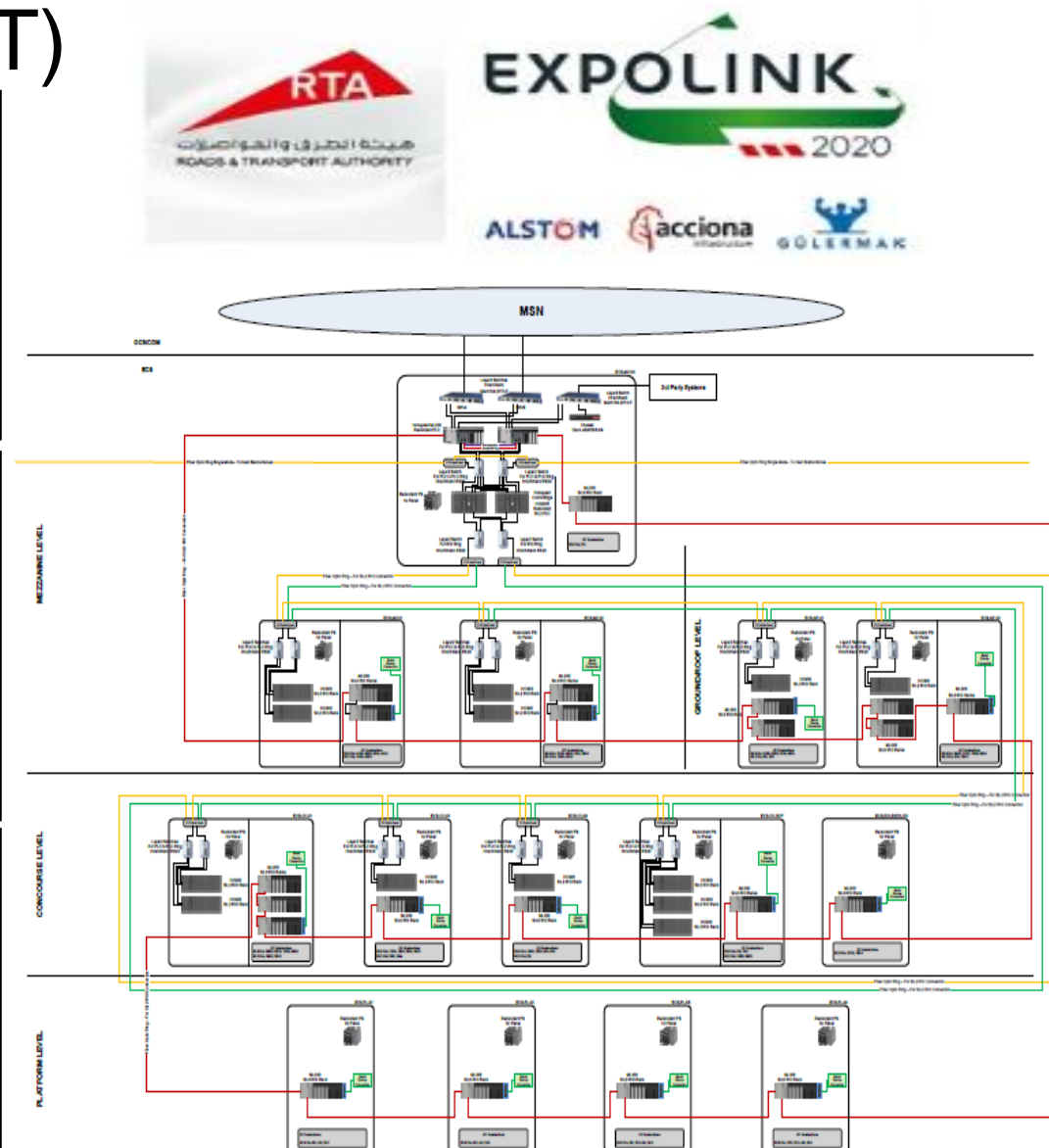
- Railway/Metro domain knowledge
- Redundant SIL2 for TVCS and ML200 Red. PLC for ECS
- Experienced supplier in HVAC, Fire Alarm, RAIL, Tunnels & Bldg application
- Execution capability in large projects & financially stable company
- A good after service team to maintain assets post handover

### Solution Offered:

- ControlEdge HC900 SIL2 for TVCS and Life Safety Systems
- MasterLogic PLC ML200 for ECS

### Customer Benefits:

- Great Technology delivered by reputed supplier
- Minimum inventory required with SIL UIO modules
- System Integrator with very wide experience in delivering Metro Projects



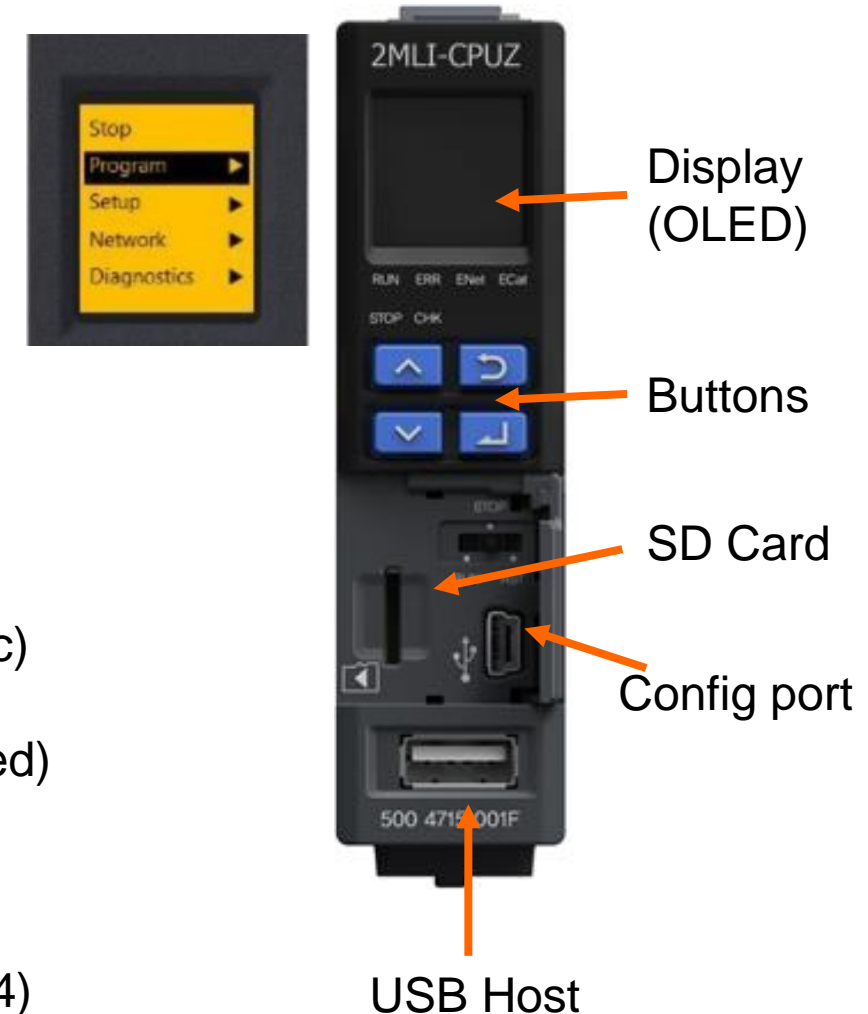
# Next Generation of new CPU

## Overview

- **Simple connectivity** over dual Ethernet ports on CPU
- Networking for interface, Ethernet, Serial comm
- Applicable for industrial requirements(**DNP3**, Ethernet/IP) Water-treatment, Pharma., Food&Beverage, BMS, etc
- **IoT Ready-Webserver**

## Feature

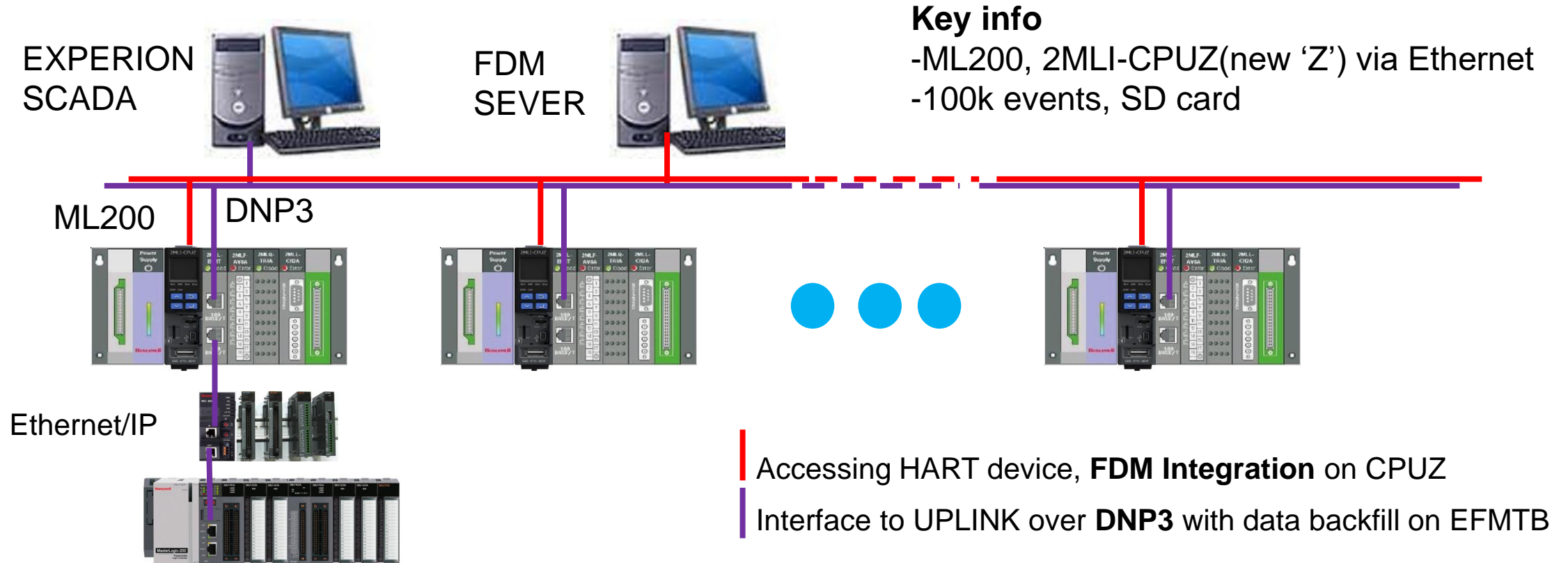
- Hi-speed discrete control and hi-performance, displaying data Upgraded and advanced functions comparing with current sys
- Ethernet ports on board(CPU), bottom side
- Operability and control functions(Process control, PID, HART, etc)
- Optimized for Motion Control(EtherCAT), Servo Control, etc
- Connectivity-Ethernet/IP, Modbus, OPCUA, RAPIEnet+(Dedicated)
- Special conn. with SNTP, SMTP
- Extended USB Host – conn. to WiFi
- Micro-SD card on board
- **Cyber Security**, Compliant to ISA/IEC62443-4(will be done 2024)
- Webserver with encrypted data



# Proposed - Water Treatment with DNP3

Expanding the Remote IO racks on non-Redundant CPU over DNP3

- Main PLC : ML200 CPU(non-Redundant) with Ethernet
- FDM integration over TCP/IP



# MRS ENET SWITCH

## MLPLC series

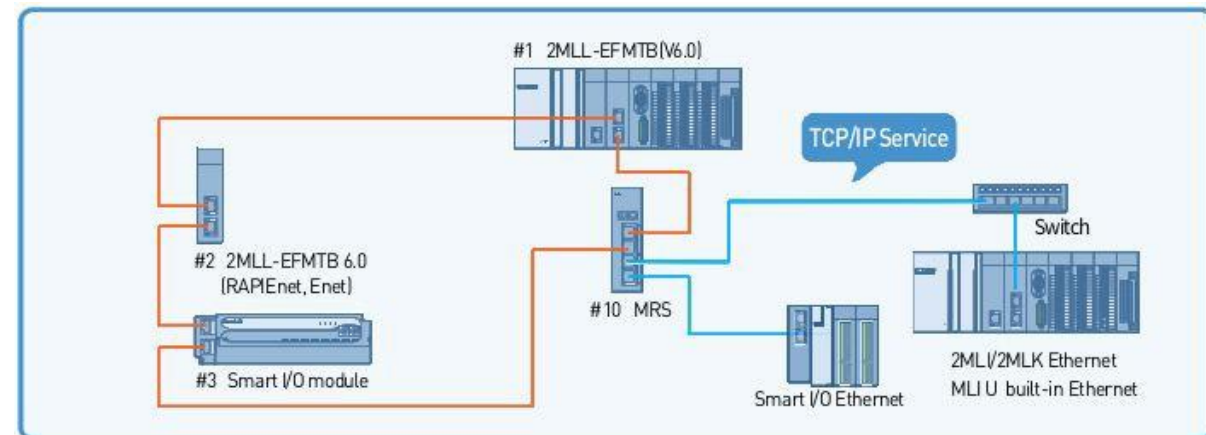
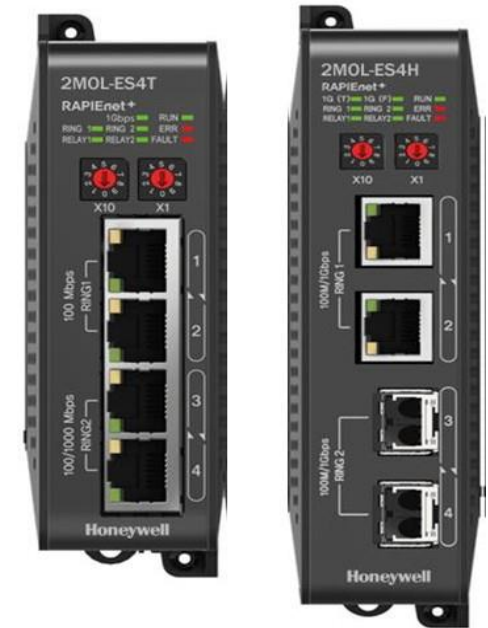
## 2MOL-ES4T Enet Switch Multi 4 Ports Stand-alone MRS Module Network

It can be configured with 64 stations including the maximum master module.

- Supporting ring and line topologies enables network configuration suitable for the site
- Module can be set simply by setting station no. Without separate s / w setting
- Module information can be checked over auto-scan(SoftMaster on MLPLC)

## Channel

- ch1, ch2 100base-TX 100Mbps
- ch3, ch4 100/1000base-TX 100Mbps/1Gbps
- Transmission method : Base Band
- Maximum extension distance between nodes : 100m
- Maximum number of nodes : 64
- Maximum protocol size : 1516Byte
- Communication right access method : CSMA/CD
- Frame error check method : CRC 32
- Station number setting : switch setting



**THANK  
YOU**

**Honeywell**