

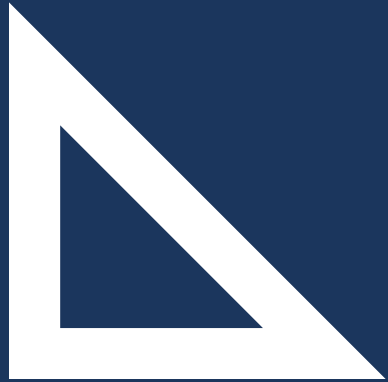


Industrial RTU and I/O Modules

Product Presentation



Connecting You to Your Data



RTU and I/O



RTU and I/O

Industry Landscape



Oil & Gas

- Compressor Stations
- Wellhead Monitoring & Control
- Drilling & Fracturing
- Offshore Platforms
- Shipboard Monitoring



Power & Energy

- Generator Control
- Load Management
- Transmission & Distribution
- Solar Tracking



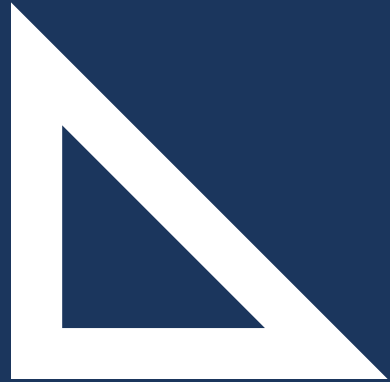
Water, Wastewater

- Water Treatment
- Well, Lift Station, Pump & Tank Control
- Chemical Injection



Process Control

- Pollution Control
- Boiler Control
- Metal Refining
- Paper Mills
- Cooling Towers



Product Line



RTU and I/O

Product Line

ST-IPm-8460



Programmable RTU

- Rugged (High Temp; Haz Loc)
- Programmable
- Redundant Operation
- Datalogging

VersaTRAK® RTUs VT-mIPm-138\248-D



New Programmable RTU

- Rugged (High Temp; Haz Loc)
- Programmable
- Onboard I/O
- Datalogging

Red Lion Workbench



IEC 61131-3 Programming Workbench

- 5 Languages
- Protocols
- Redundancy
- Two variable database or one variable database

EtherTRAK® -2



Dual Ethernet I/O Module

- Rugged (High Temp; Haz Loc)
- Three Network Modes
- Up 34 I/O
- 17 different models

RTU and I/O

Product Line

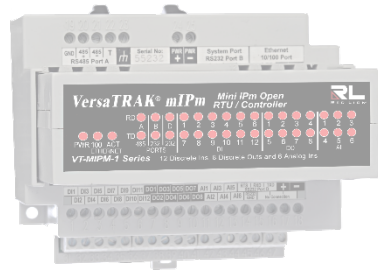
ST-IPm-8460



Programmable RTU

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VersaTRAK® RTUs VT-mIPm-138\248-D



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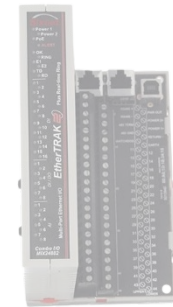
Red Lion Workbench



IEC 61131-3 Programming Workbench

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EtherTRAK® -2



Dual Ethernet I/O Module

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ST-IPm-8460

Programmable Controller

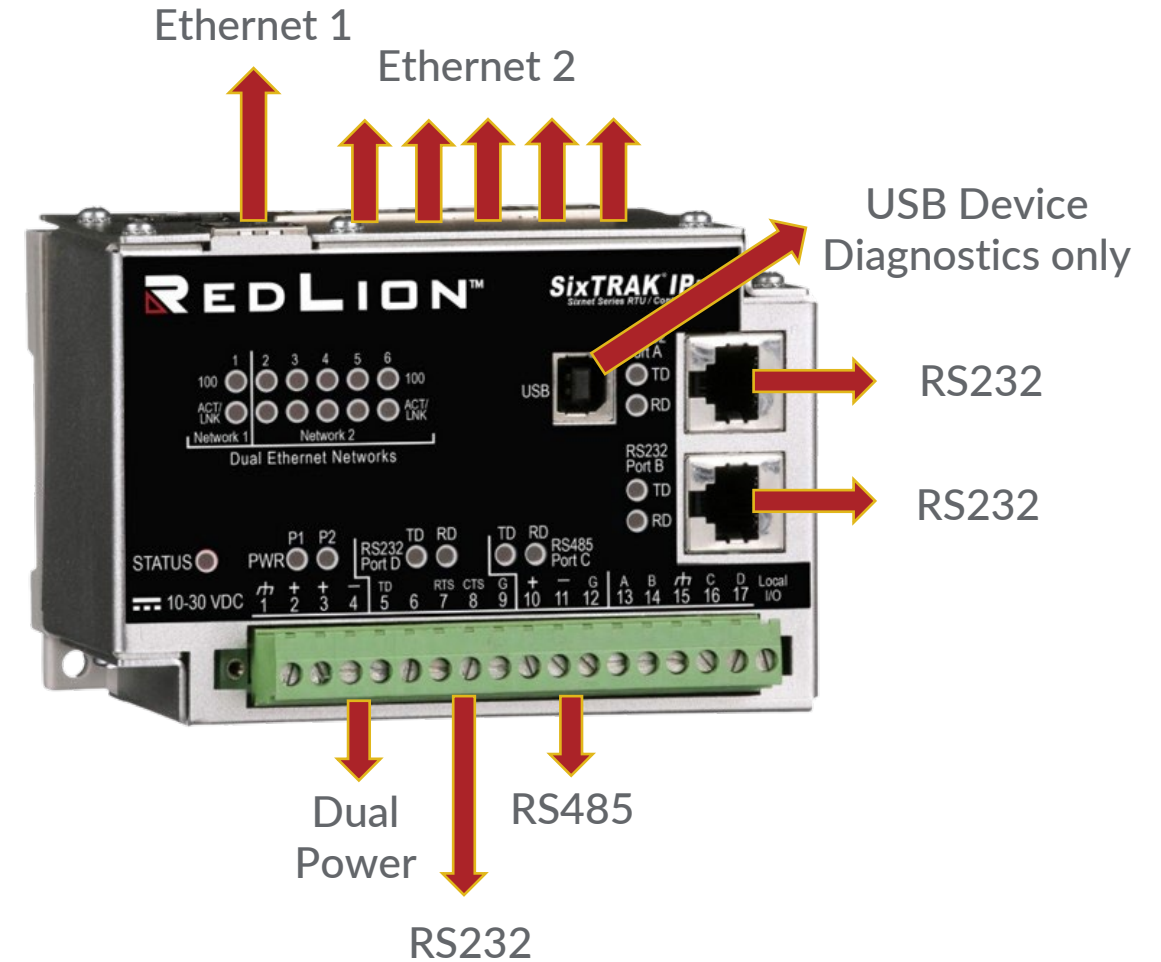
- 10x faster performance
- 4x more NVRAM
- 4x more FLASH
- 8x more RAM
- Isolated RS232 and RS485 ports
- 1 additional Ethernet Port
- Red Lion Workbench (IEC61131-3 programming)
- ISaGRAF Compatible (backward compatibility)



ST-IPm-8460

Hardware Features

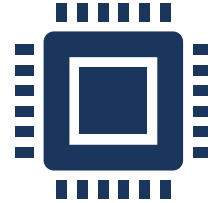
- Rugged dependability in extreme environments
 - Extreme temperature rating -40 to +70°C
 - High mean-time between failure (MTBF)
- Redundancy
 - Redundant Controller
 - Dual Power Input
- Many communication ports and protocols
 - 3x RS232, 1x RS485, 6x Ethernet
- Certified for hazardous environments



ST-IPm-8460

Software Features

- **Flexible open architecture**
 - Linux operating system
- **Security**
 - User Authentication
 - Advanced firewalls
- **Datalogging configuration**
- **Programmable with IEC61131-3 and C**
 - Red Lion Controls Workbench
 - ISaGRAF (backward compatibility)



ST-IPm-8460

Order Guide

Part Number	PORTS			MEMORY		
	Eth	232	485	NVRAM	FLASH	DRAM
ST-IPm-8460	6	3	1	8M	512M	512M



ST-IPm-8460

Cross Reference Guide

Part Number	PORTS			MEMORY		
	Eth	232	485	NVRAM	FLASH	DRAM
ST-IPm-8460	6	3	1	8M	512M	512M
ST-IPm-6350	5	3	1	2M	128M	64M
ST-IPm-2350\1350	5	3	1	2M\512K	16M	16M
VT-IPm-1410	1	3	1	512K	16M	16M
VT-IPm-2410	1	3	1	2M	16M	16M
ET-GT-ST-1	2	1				
ST-GT-1210	1	1	1	512K	16M	16M

RTU and I/O

Product Line

ST-IPm-8460



Programmable RTU

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VersaTRAK® RTUs
VT-mIPm-138\248-D



New Programmable RTU

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- Onboard I/O
- Datalogging

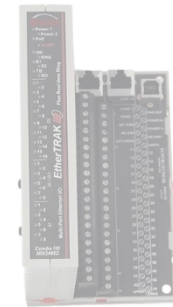
Red Lion Workbench



IEC 61131-3 Programming Workbench

- 5 Languages
- Protocols
- Redundancy
- Two variable database or one variable database

EtherTRAK® -2



Dual Ethernet I/O Module

- Rugged (High Temp; Haz Loc)
- Three Network Modes
- Up 34 I/O
- 17 different models

VersaTRAK® RTUs

Hardware Features

- On-board I/O
 - Mixture of DI, DO, AI, AO
- Ethernet, RS232 and RS485 Port
- Certified for rugged and hazardous environments



VersaTRAK® RTUs

Software Features

- Linux OS
 - Open programming
- IEC61131-3 programming via Red Lion Workbench
 - ISaGRAF is supported for backward compatibility
- Datalogging
- Security with advanced firewall



VersaTRAK® RTUs

Order Guide

	PORTS			ON-BOARD I/O				MEMORY		
Part Number	Eth	232	485	DI	DO	AI	AO	NVRAM	FLASH	DRAM
VT-MIPM-248-D	1	2	2	12	4	8	2	8M	512M	512M
VT-MIPM-138-D	1	2	1	12	8	6		8M	512M	512M

VT-mIPm-248-D

Cross Reference Guide

VT-mIPm-248-D is a suitable upgrade to the parts below

	PORTS			ON-BOARD I/O				MEMORY		
Part Number	Eth	232	485	DI	DO	AI	AO	NVRAM	FLASH	DRAM
VT-MIPM-248-D	1	2	2	12	4	8	2	8M	512M	512M
VT-MIPM-241-D	1	2	2	12	4	8	2	512K	16M	16M
VT-MIPM-245-D	1	2	2	12	4	8	2	512K	64M	32M
VT-IPM2M-113-D	1	1	1	12	4	8		512K	32M	32M
VT-IPM2M-213-D	1	1	1	12	4	8	2	512K	32M	32M
VT-UIPM-431-H	1	2	1	8	4	2		512K	16M	16M



VT-mIPm-138-D

Cross Reference Guide

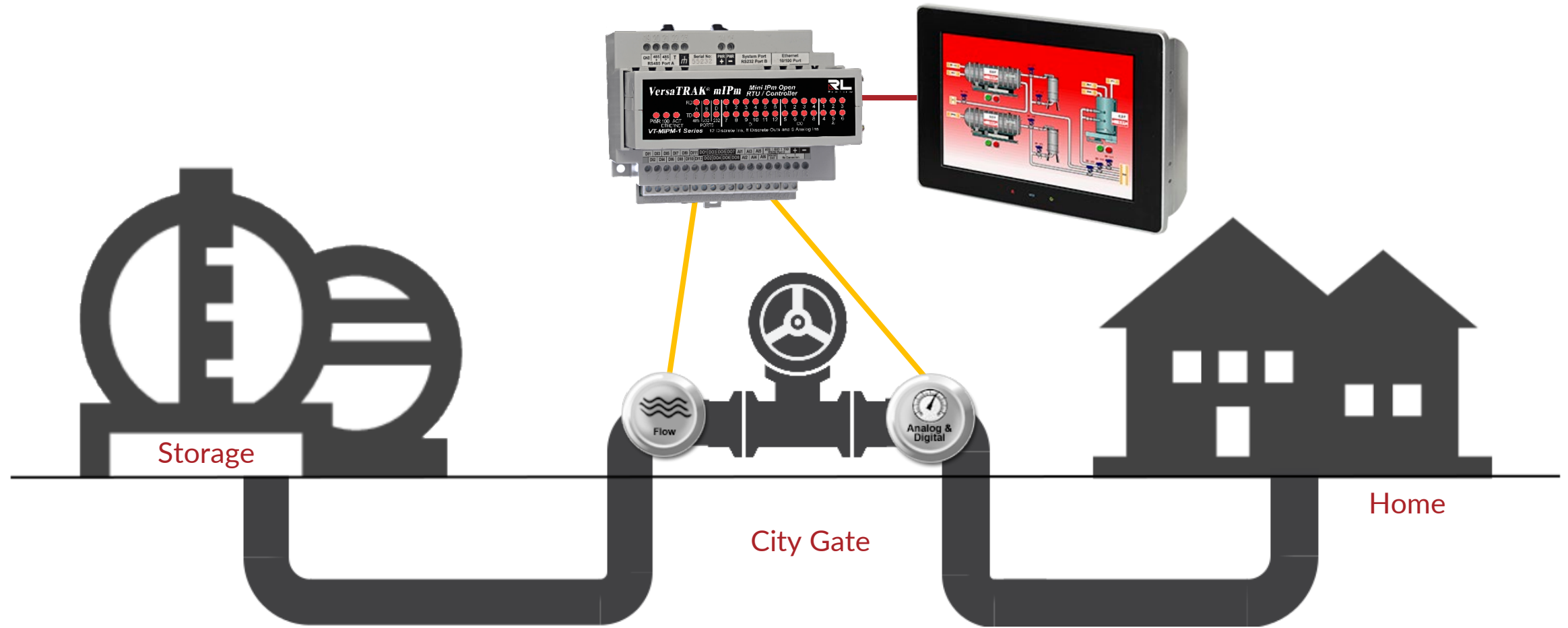
VT-mIPm-138-D is a suitable upgrade to the parts below

Part Number	PORTS			ON-BOARD I/O				MEMORY		
	Eth	232	485	DI	DO	AI	AO	NVRAM	FLASH	DRAM
VT-MIPM-138-D	1	2	1	12	8	6		8M	512M	512M
VT-MIPM-131-D	1	2	1	12	8	6		512K	16M	16M
VT-MIPM-135-D	1	2	1	12	8	6		512K	64M	32M
VT-UIPM-431-H	1	2	1	8	4	2		512K	16M	16M



VT-mIPm-248-D, Graphite HMI

Natural Gas Monitoring and Control



RTU and I/O

Product Line

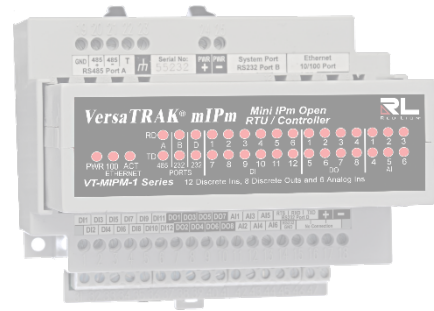
ST-IPm-8460



Programmable RTU

- Rugged (High Temp; Haz Loc)
- Programmable
- Redundant Operation
- Datalogging

VersaTRAK® RTUs
VT-mIPm-138\248-D



New Programmable RTU

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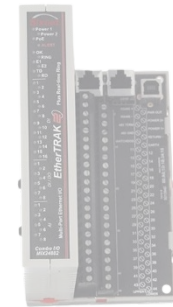
Red Lion Workbench



Programming IEC 61131-3
Workbench

- 5 Languages
- Protocols
- Redundancy
- Two variable database or one variable database

EtherTRAK® -2



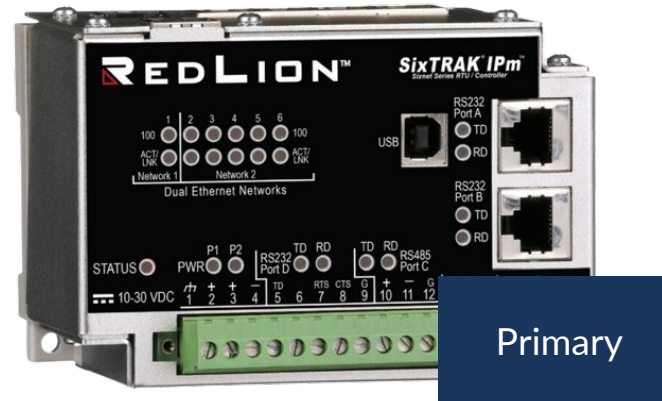
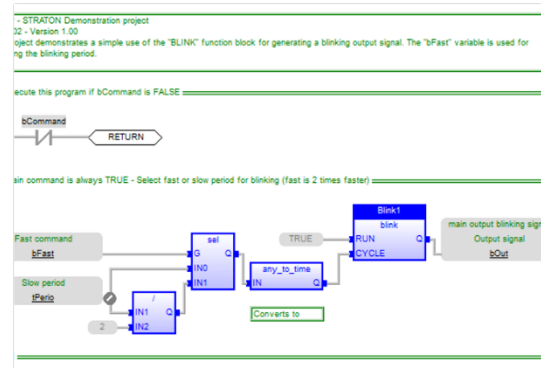
Dual Ethernet I/O Module

- Rugged (High Temp; Haz Loc)
- Three Network Modes
- Up 34 I/O
- 17 different models

Red Lion Workbench

IEC61131-3 Programming

- 5 Programming Languages
 - ST, SFC/CFC, IL, FBD, LD
- Many Protocols Supported
 - Modbus Included
 - DNP3 (Future)
 - IEC60870 (Future)
 - IEC61850 (Future)
 - Ethernet/IP (Future)
- Controller Redundancy
 - Bump less transfer
 - Fast Switchover



Primary



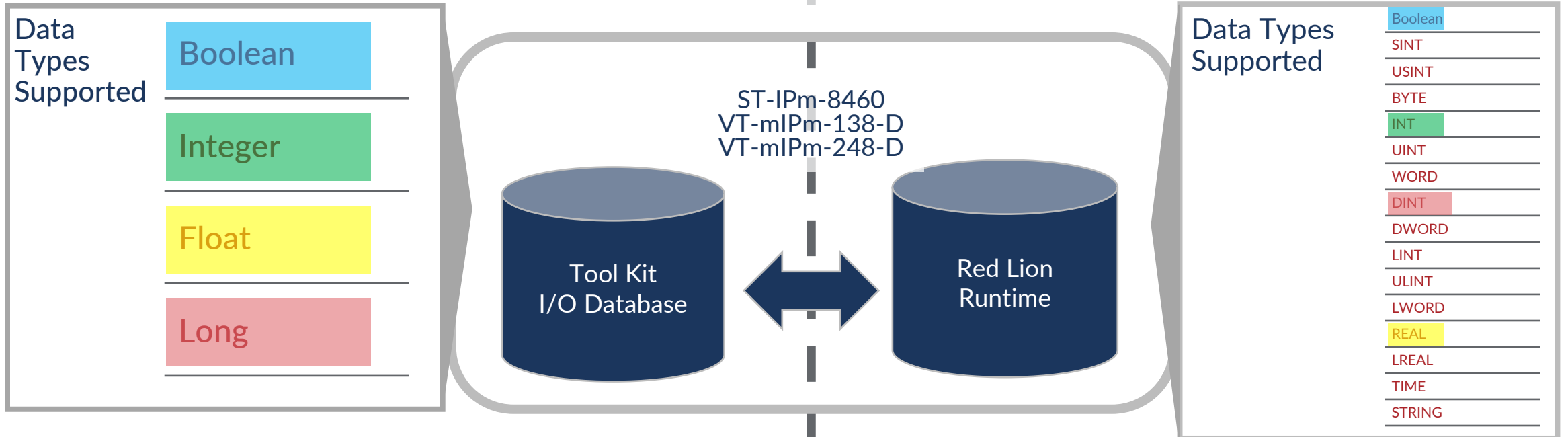
Secondary

Tool Kit and Red Lion Workbench

Separate Variable Databases

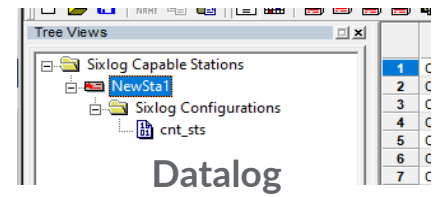
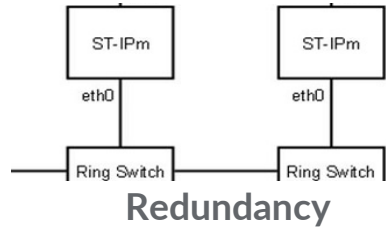


When ever there is a change you must resync



Tool Kit and Red Lion Workbench

Separate Variable Databases



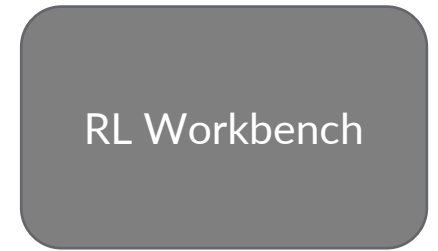
Action Name	Defined Action	Local Type	Local Start	Remote Type	Remote Start	Number of Registers
ED01->AI	Read SONNET I/O	To Analog In	0	From Analog In	0	16
ED01->DI	Read SONNET I/O	To Discrete In	0	From Discrete In	0	16
ED02->AI	Read SONNET I/O	To Analog In	16	From Analog In	0	16
ED02->DI	Read SONNET I/O	To Discrete In	16	From Discrete In	0	16
ED03->AI	Read SONNET I/O	To Analog In	32	From Analog In	0	16
ED03->DI	Read SONNET I/O	To Discrete In	32	From Discrete In	0	16
ED04->AI	Read SONNET I/O	To Analog In	48	From Analog In	0	16
ED04->DI	Read SONNET I/O	To Discrete In	48	From Discrete In	0	16
ED05->AI	Read SONNET I/O	To Analog In	64	From Analog In	0	16
ED05->DI	Read SONNET I/O	To Discrete In	64	From Discrete In	0	16
ED06->AI	Read SONNET I/O	To Analog In	80	From Analog In	0	16
ED06->DI	Read SONNET I/O	To Discrete In	80	From Discrete In	0	16
ED07->AI	Read SONNET I/O	To Analog In	96	From Analog In	0	16
ED07->DI	Read SONNET I/O	To Discrete In	96	From Discrete In	0	16
ED08->AI	Read SONNET I/O	To Analog In	112	From Analog In	0	16
ED08->DI	Read SONNET I/O	To Discrete In	112	From Discrete In	0	16

I/O Transfers

Define Communications Port Properties:

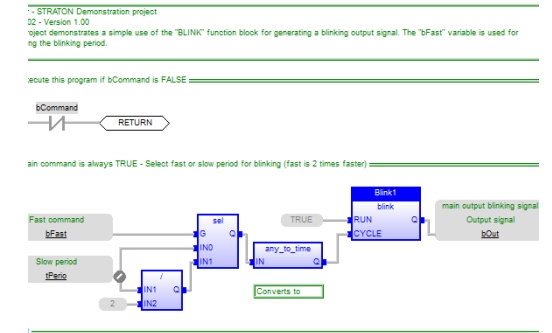
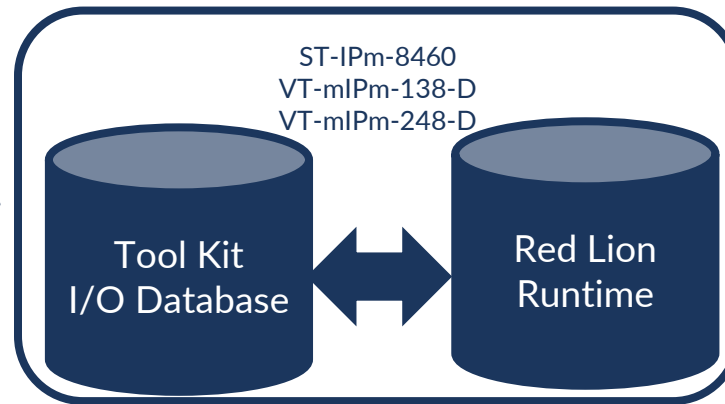
Port	Settings
Network 1/Eth0	Ethernet: 10.1.0.1
Network 2/Eth1	Ethernet: 192.168.1.1
RS232 Port A	Modbus RTU Slave,9600,N,8,1,RS232
RS232 Port B	SIXNET Universal,9600,N,8,1,RS232
RS485 Port C	SIXNET Universal,9600,N,8,1,RS485
RS232 Port D	SIXNET Universal,9600,N,8,1,RS232

SCADA



Data Types Supported

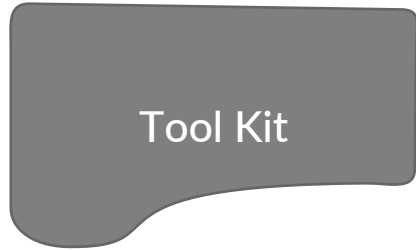
- Boolean
- Integer
- Float
- Long



Program

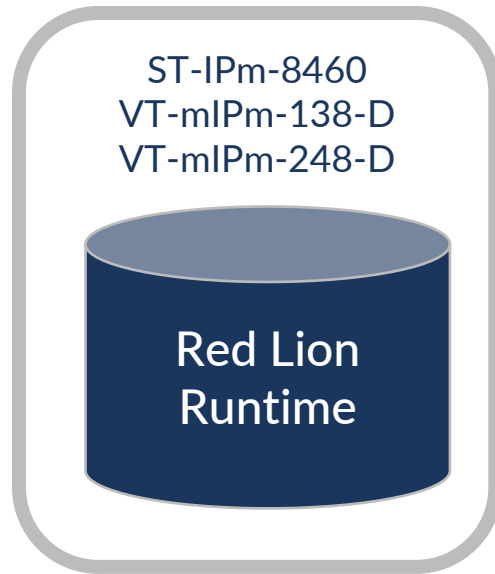
Red Lion Workbench

One Variable Database

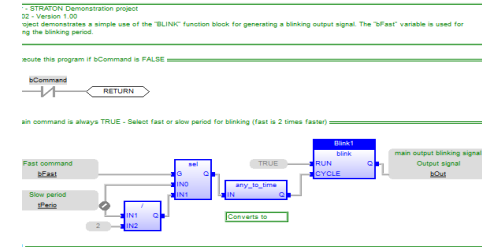


Configuration Only

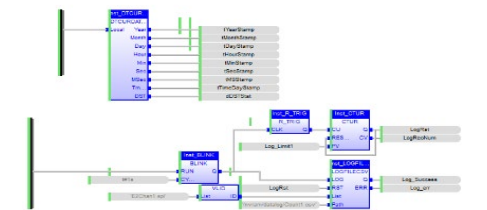
- IP address
- User Authentication
- Firewall



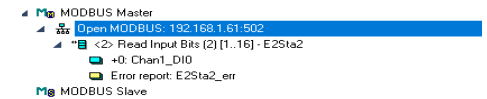
Data Types Supported	
Boolean	
SINT	
USINT	
BYTE	
INT	
UINT	
WORD	
DINT	
DWORD	
LINT	
ULINT	
LWORD	
REAL	
LREAL	
TIME	
STRING	



Program



Datalog



I/O

Transfers

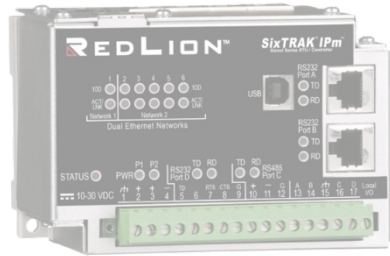


SCADA

RTU and I/O

Product Line

ST-IPm-8460



New Programmable RTU

- Rugged (High Temp; Haz Loc)
- Programmable
- Redundant Operation
- Datalogging

VersaTRAK® RTUs
VT-mIPm-138\248-D



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Red Lion Workbench



IEC 61131-3 Programming Workbench

- 5 Languages
- Protocols
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EtherTRAK® -2



Dual Ethernet I/O Module

- Rugged (High Temp; Haz Loc)
- Three Network Modes
- Up 34 I/O
- 17 different models

EtherTRAK® -2

Hardware Features

- 17 I/O Module Models
- Redundancy
 - Redundant Ethernet Ports
 - Dual power input and communication ports
- RS485 Communication to field devices
- Certified for rugged and hazardous environments

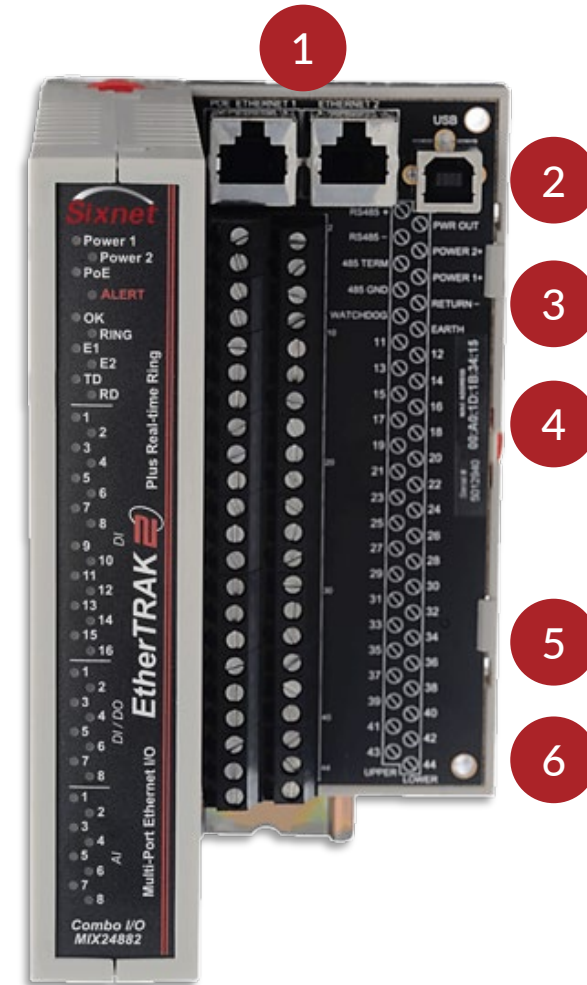


ABS

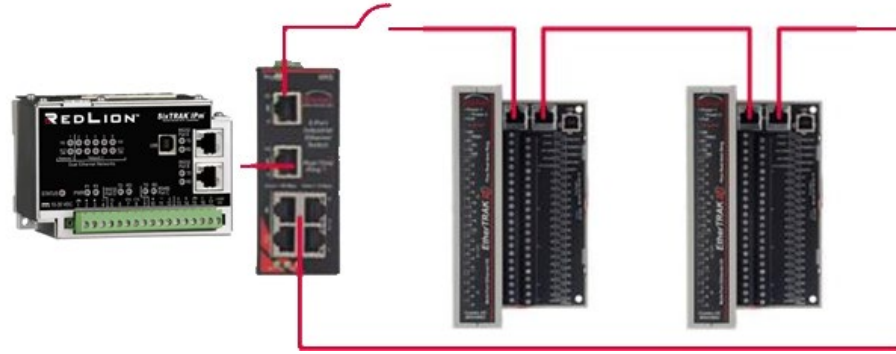


EtherTRAK® -2

1. Dual Ethernet ports
 - Real-Time Ring™ switch redundancy
 - Switch “passthru” elimination
 - Dual independent networks
2. USB port for local interface
3. Redundant power inputs
4. RS-485 port
5. Independent watchdog output
6. Up to 34 high-density I/O

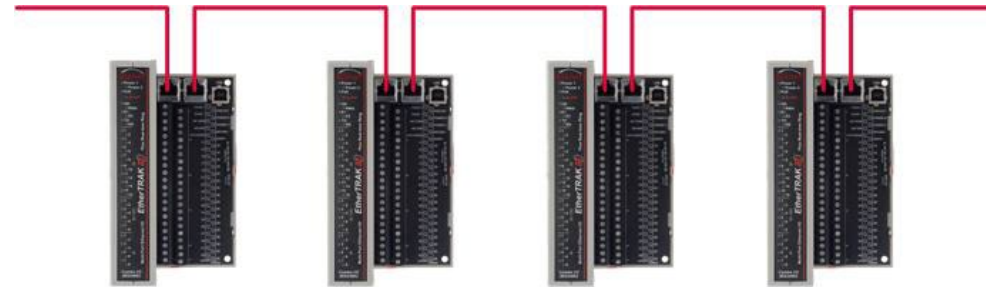


EtherTRAK®-2 Networking Options



- 1. Real-Time Ring Mode**
Create redundant Ethernet reliability without additional costly equipment

- 2. Switch Elimination Mode**
Daisy-chain modules – without the need for external switches – saves money and reduces complexity



- 3. Two Networks Mode**
Each Ethernet port has a unique MAC and IP address for connecting two independent physical networks

EtherTRAK®-2

Software Features

- Ethernet Flexibility – 2 Port Switch
- Fast I/O Operation
- Peer-to-peer transfers and Ethernet to RS485 Passthru
- Security
 - Limit access to specific devices
- Advanced Diagnostics
 - Watchdogs
 - Module and network health

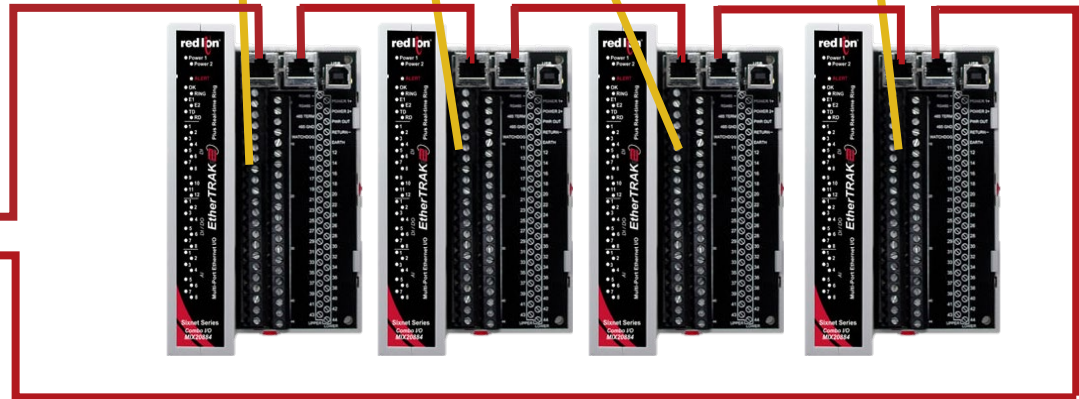
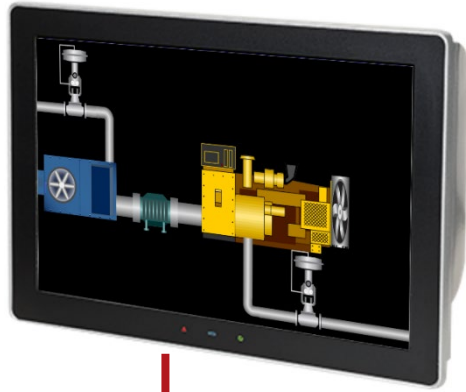


EtherTRAK®-2 Order Guide

EtherTRAK-2 Ethernet I/O		I/O Count			
Part Number	Description	DI	AI	DO	AO
E2-MIX20884-D	32 channel Combination I/O with 4 isolated high-speed counters and 4 analog outputs	20	8	8	4
E2 or EB-MIX24880-D	32 channel combination I/O with one isolated input counter	24	8	8	-
E2 or EB-MIX24882-D	34 channel combination I/O with two analog outputs	24	8	8	2
E2 or EB-32DI24-D	32 discrete inputs (10-30 VDC) including 16 multifunction counters	32	-	-	-
E2 or EB-16DI24-D	16 individually isolated discrete inputs (10-30 VDC) with counters	16	-	-	-
E2-16DIAC-D	16 individually isolated discrete inputs (120 VAC nominal, 10-30VDC) with counters	16	-	-	-
E2 or EB-32DO24-D	32 discrete outputs (10-30VDC) 0.5 Amp each, 8 Amps total	-	-	32	-
E2 or EB-16DO24-D	16 individually isolated discrete outputs (10-30VDC) 1 Amp outputs, 16 Amps total	-	-	16	-
E2 or EB-16DORLY-D	16 individually isolated discrete outputs (10-30VDC/VAC Relay) 1 Amp outputs, 16 Amps total	-	-	-	-
E2 or EB-32AI20M-D	32 analog inputs (4-20mA)16-bit accuracy	-	32	-	-
E2 or EB-32AI10V-D	32 analog inputs (0-10VDC)	-	32	-	-
E2 or EB-16AI20M-D	16 analog inputs (4-20 mA)	-	16	-	-
E2 or EB-8AO20M-D	8 analog outputs (4-20 mA)	-	-	-	8
E2 or EB-16AI-8AO-D	24 channel combination, 16 analog inputs 4-20 mA and 8 analog outputs (4-20 mA)	-	16	-	-
E2 or EB-16ISO20M-D	16 individually isolated analog inputs (4-20 mA)	-	16	-	-
E2 or EB-16ISOTC-D	16 individually isolated analog inputs (thermocouple and +/-250mV) with J, K, E, R, T, C, N, S	-	16TC	-	-
E2 or EB-10RTD-D	10 analog inputs (100 Ohm platinum RTD), range is -200 to 850o C	-	10RTD	-	-

ST-IPm-8460, EtherTRAK-2 I/O, Graphite

Gas Compression Operation





for more information

redlion.net