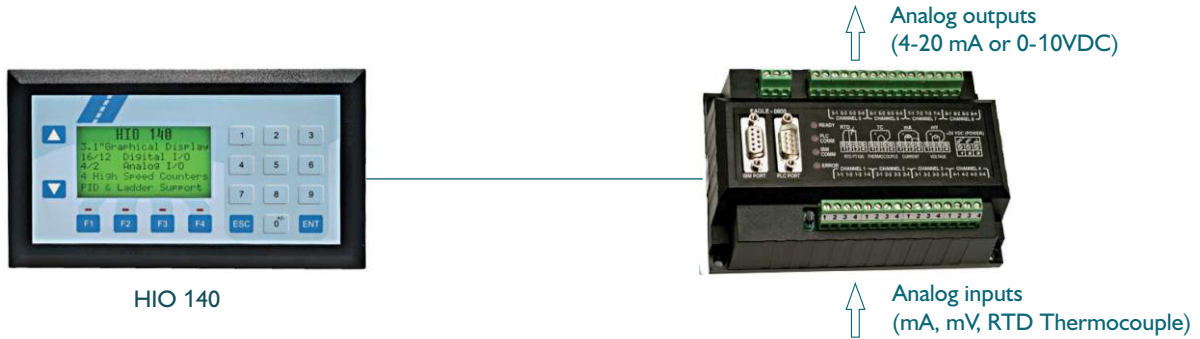Eagle-0800

Eagle-0404

Eagle-0201-0302

Universal Analog I/O Modules :

- DIN Rail or Panel mounted compact I/O modules

- Indication for Diagnostics, Power and Communication

- Adds I/O capability to your PLC, SCADA and Modbus networked devices

- Programmable inputs allow same modules to accept RTD, mA, mV

- 12 bit 8 universal analog inputs or with 4 Universal Analog inputs and 04 analog outputs

- Direct connection to PLC programming terminal with support for most PLCs

- Can be multidropped as Modbus Slave on RS485 Network

- Common Programming software for the entire Eagle family.........FREE!!
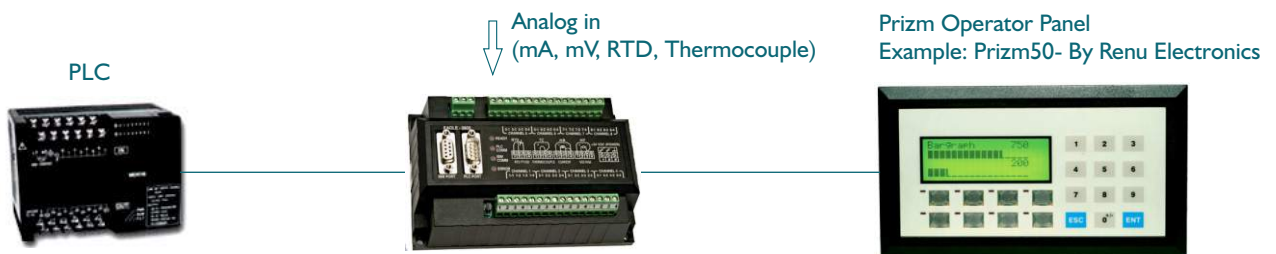
- CE marked

Possible Applications :

Our customers have used the Eagle units in various applications across many industries.
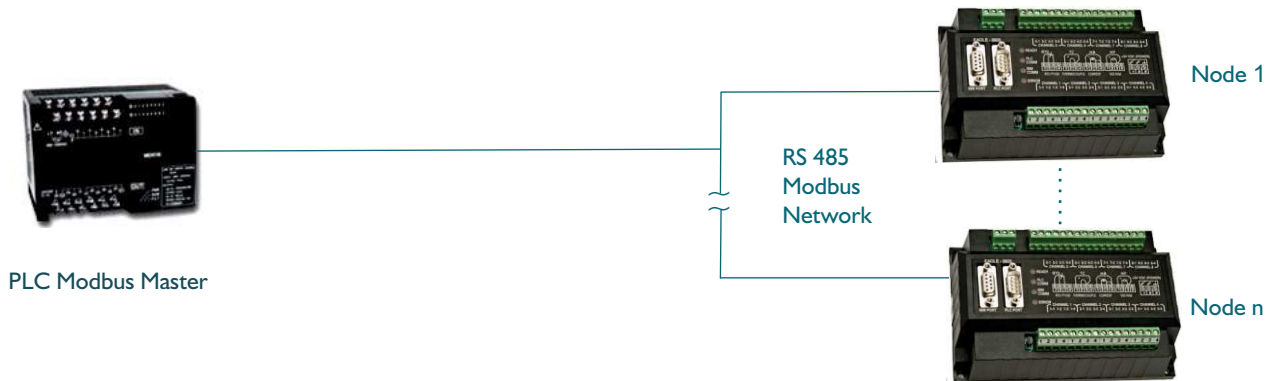Typical configuration includes the following :

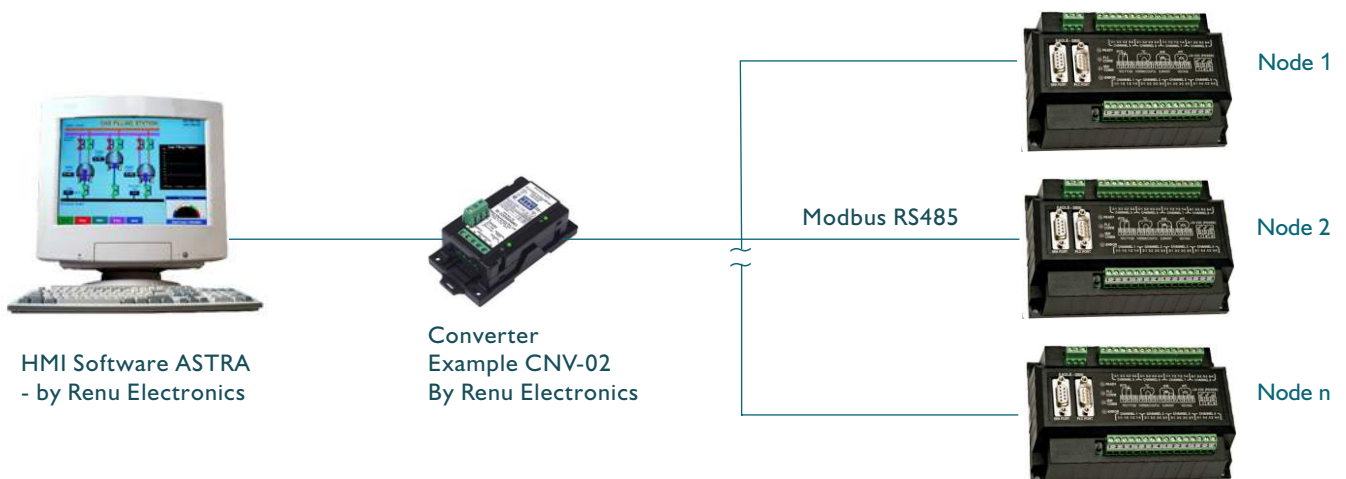### 1. Add analog I/O to your Controller.

Analog outputs
(4-20 mA or 0-10VDC)

HIO 140

Analog inputs
(mA, mV, RTD Thermocouple)

2. Prizm Operator Interface on Pass-through port.

PLC

Analog in
(mA, mV, RTD, Thermocouple)

Prizm Operator Panel
Example: Prizm50- By Renu Electronics

3. Multiple Eagle units (Modbus Slaves) connected to Modbus Master
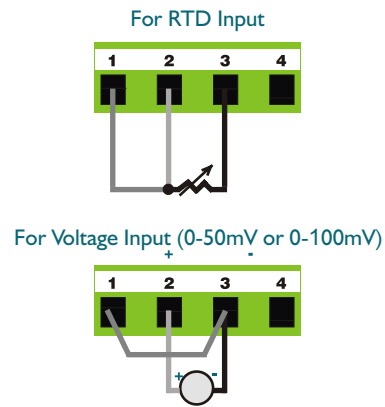
PLC Modbus Master

RS 485
Modbus
Network

Node 1

Node n

4. Data Acquistion Application (SCADA Connectivity)

HMI Software ASTRA
- by Renu Electronics

Converter
Example CNV-02
By Renu Electronics

Modbus RS485

Node 1

Node 2

Node n

* Images not to Scale.

Typical Wiring Diagrams :

Inputs

For Thermocouple Input

For RTD Input

For Current Input (0-20mA or 4-20 mA)

For Voltage Input (0-50mV or 0-100mV)

Outputs

For Current Output (4-20 mA)

V+ I+ I- V-

$R_L \leq 500\Omega$

For Voltage Output (0-10 VDC)

V+ I+ I- V-

$R_L \geq 400\Omega$
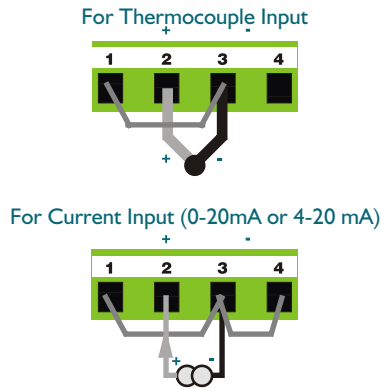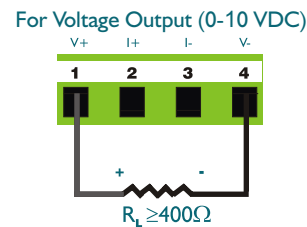
Specifications :

For Voltage inputs:
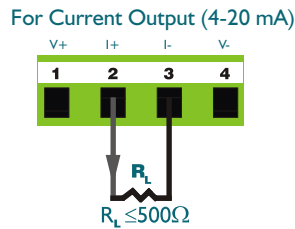Uses 0-100 mV input range resolved in 12 bits.
For higher input ranges, use externally calibrated shunt or contact factory
Total error : $\pm 0.1\%$ of scale ± 1 bit.

For Current inputs:
Uses 0-20mA input range with 5 precision shunt resolved in 12 bit.
Total error : $\pm 0.1\%$ of scale ± 1 bit.

For RTD input:
Uses 3 wire compensation technique. Current sense is 0.5mA.
Power dissipated in RTD is 0.025mV @ 100 .
Range supported : -200 to 850°C.

For Thermocouple Input:
Uses 0-100mV input range resolved into 12 bits for positive input and resolved in 11 bits for negative inputs.
Cold junction error is 1° maximum and 0.5° typical.
Total error : $\pm 0.5\%$ of scale ± 1 bit + CJC error

Input Type	Temperature Range	1 Bit Corresponds to
J	-210 to 770°C	0.43°C
K	-200 to 1373°C	0.61°C
E	-200 to 1000°C	0.32°C
R	-50 to 1769°C	2.04°C
S	-50 to 1769°C	2.31°C
B	0 to 1820°C	3.21°C
N	-200 to 1300°C	0.7°C
T	-200 to 400°C	0.47°C

Analog Outputs

Resolution		12 Bit
Load:		
4-20 mA		Less than 500
0-10 V DC		Minimum 400
Temperature Drift (for Digital Count)		60 PPM

General Specifications :

Power	: 24V DC $\pm$ 5%, 3.5W maximum
Operating Temperature	: 0° to 50°C
Storage Temperature	: -20° to 80°C
Humidity	: 10% to 90% (Non condensing)
Mounting	: DIN rail or back panel mounting
Dimensions	:
Eagle-0404, Eagle-0800	: 155mm X 102mm X 48mm
Eagle-0201-0302	: 94mm X 42mm X 47mm
Immunity to ESD	: 8kV air, 6kV contact as per IEC 61000-4-2
Transient Immunity	: 2kV as per IEC 61000-4-4
Radiated Immunity	: 10V/meter as per IEC 61000-4-3
Emissions	: EN55011 CISPR A
Isolation	: Analog section from digital. No isolation between channels.
IBM Port	: Connects to PC for application Download or operator interface for Pass-through.
PLC Port	: Connects to PLC.

Response time   : Depends on driver.
Typical 200 mSec / Channel

Dimensions

Side View

48
102
35

Top View
155

EAGLE-0800

53.4

Eagle-0201-0302

47

Side View

94

42

Eagle-0201-0302

Top View
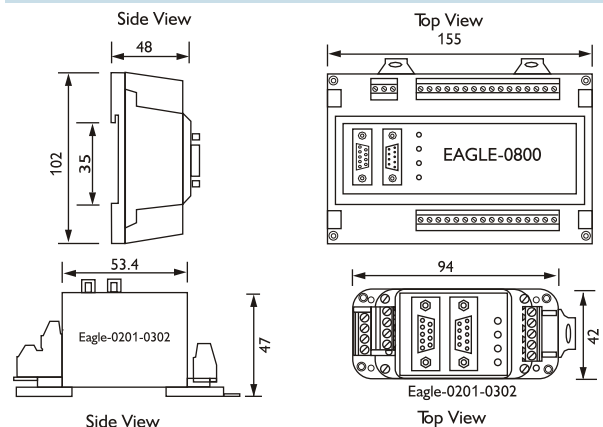
All dimensions are in mm.

Basic Operations :

Eagle units accept universal field inputs (such as RTD, T/C, mA, and mV) and convert them to actual field values like temperature, pressure etc. before sending them to the PLC. Similarly it can also read values in PLC registers and scale the 4-20mA output accordingly. Input and Output channels of the Eagle are user configurable and any combination of input types is possible. Eagle Setup Software helps the user to configure the Eagle units and use them as per his requirements.

Linearization: 16 point linearization is provided for mV and mA inputs, which helps the user to convert non-linear segments into required engineering value.

Eagle units have two Communication Ports. Port1 (RS232/485) is connected to PLC and Port2 acts as Programming or Slave Port. Any Prizm model can be connected on Port 2 as a HMI.

System requirements for Eagle Setup Software are:

Windows Version	:	Microsoft Windows 3.1 or higher
Processor	:	386 or higher
Hard disk Space	:	3 MB or more
Mouse	:	Required
RAM	:	2 MB or more
Display resolution	:	640 x 480 (VGA) or better
Display colors	:	16 colors or more

Other Items required for Eagle configuration:

1. Eagle unit
2. +24VDC regulated power supply
3. IBM Cable (Partcodes: IBM 0909-1 or IBM 0925-1)
4. Eagle Setup Software
5. Eagle to Device cable

Models :

Model	Analog Inputs	Analog Outputs	Digital Input	Digital Output	Part Number
Eagle 0201#	2 Universal	1 (4-20 mA)	3	2	Eagle-0201-0302-U
Eagle 0404	4 Universal	4 (4-20 mA / 0-10 V DC)	0	0	Eagle-0404-U
Eagle 0800	8 Universal	0	0	0	Eagle-0800-U

Listing CE

More models are being added. We also make custom models . #Supports only Modbus RTU (Needs Eagle software ver. Eagle0201_SP)

PLCs Supported :

PLC	COM Port	Cable part number (Eagle0404, Eagle0800)	Pass-through Support
AB Micrologix	RS232	SC-E-027A-00	✓
AB SLC 500 (DF1 and DH485)	RS422	SC-E-007-00	Network
Aromat FP0 Series	RS232	SC-E-015A-00	✓
Aromat FP1	RS485	SC-E-015B-00	✓
Delta DVP Series	RS232	SC-E-044-00	✓
Fuji NB0	RS485	SC-E-028-00	X
GE Series 90-30 (SNP)	RS485	SC-E-002-00	✓
GE VersaMax, RJ45	RS232	SC-E-002A-00	✓
GE VersaMax, DB9	RS232	SC-E-002B-00	✓
IDEC Micro3	RS422	SC-E-025A-00	✓
IDEC MicroSmart	RS232	SC-E-025B-00	✓
Keyence KV Series	RS232	SC-E-018-00	✓
Koyo DL205	RS232	SC-E-005-00	X
LG-Master K Series	RS232	SC-E-037-00	X
Mitsubishi FX0	RS485	SC-E-008A-00	✓
Modbus Slave	RS232/RS485*	User Supplied	Multidropping
Omron (Host Link) - 9 pin	RS232	SC-E-006B-00	✓
Omron (Host Link) - 25 pin	RS232	SC-E-006C-00	✓
Siemens S7-200 / Micro	RS485	SC-E-029-00	✓
Telemecanique TSX07/37	RS422	SC-E-026A-00	Network
Telemecanique TSX17	RS485	SC-E-017A-00	X
Toshiba T1	RS232	SC-E-019A-00	✓
Toshiba T2	RS232	SC-E-019B-00	✓

* Software selectable.   New PLC drivers are constantly added. Please contact factory for more information. We welcome an opportunity to develop new , custom drivers and customized units.

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An ISO 9001 : 2008 and ISO 14001 : 2004 certified company