

# IDEC PLC Serial and Ethernet Communications Drivers

## Information Sheet for Crimson v3.0+

### Compatible Devices

IDEC PLC's equipped with a serial or Ethernet port capable of being configured as a server using IDEC's Maintenance Communication Protocol.

### Verified Device

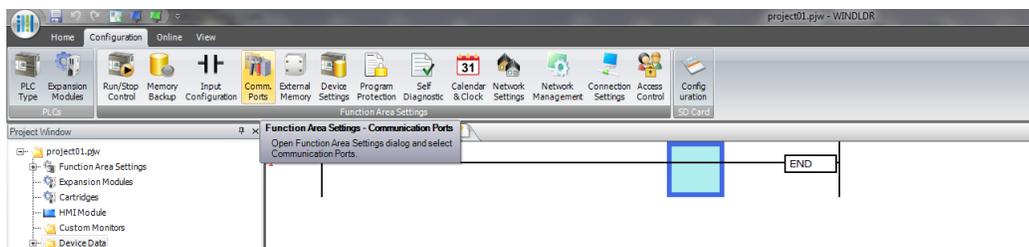
IDEC FC6A-C40K1CE

### Overview

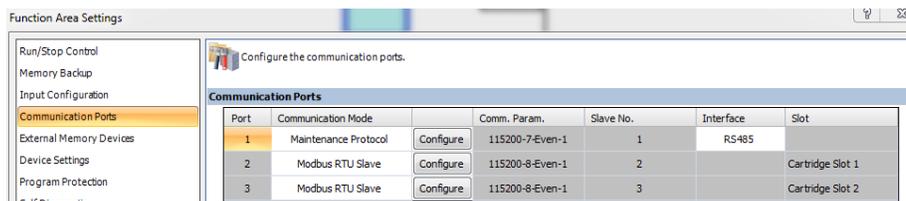
Red Lion's communication drivers for IDEC PLC's are master drivers available for both serial and Ethernet ports providing access to memory ranges as described within.

### Serial Port Configuration

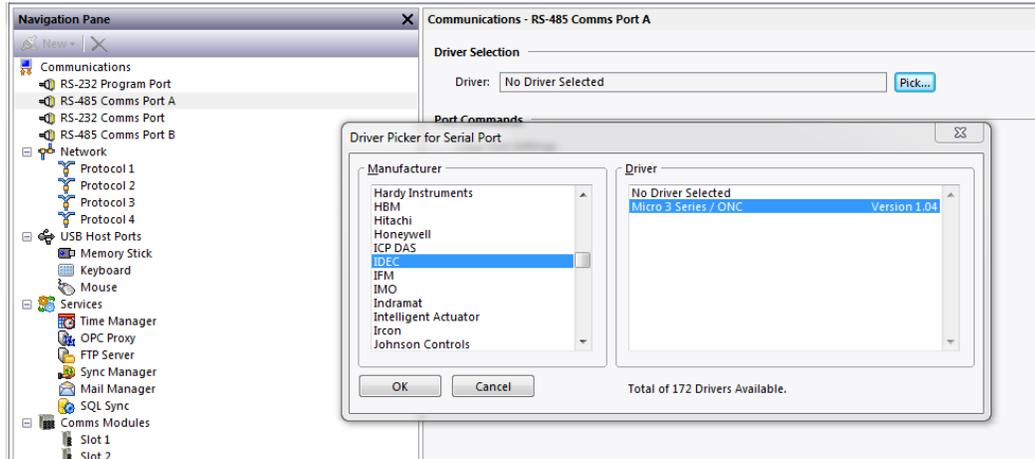
In IDEC's WindLDR software, click on Comm Ports in the Configuration tab of the tool bar.



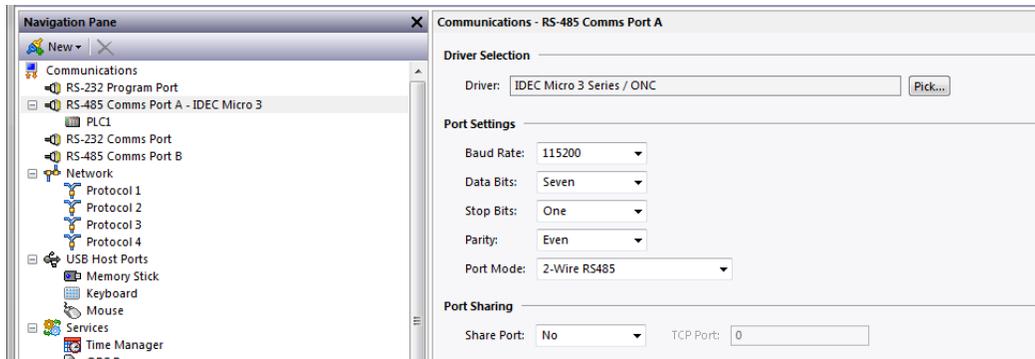
Set a Communication Port to Maintenance Protocol mode and configure to the desired Slave Number and port settings including Baud rate, Data length, Parity and Stop bits.



In Crimson's Communications category select the desired serial port in the Communications tree and click on the Pick... button.

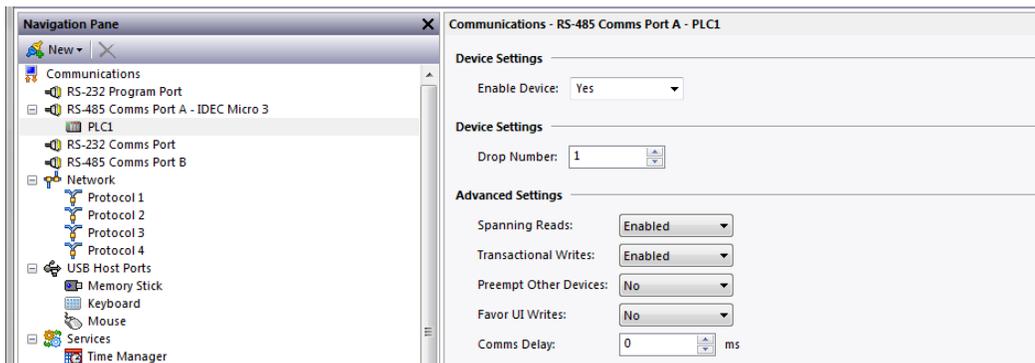


Find the IDEC Micro 3 Series / ONC communications driver as shown above and click OK.



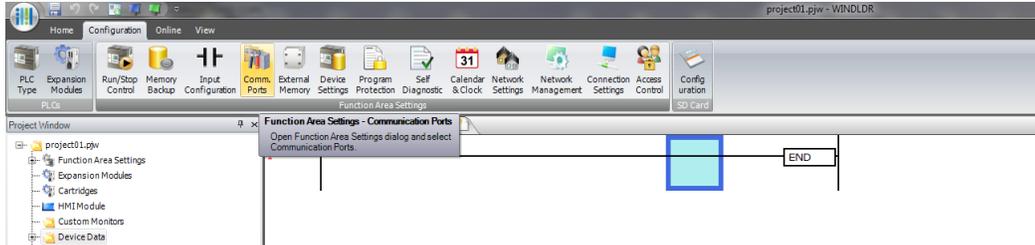
Modify the Baud Rate, Data Bits, Stop Bits and Parity settings such that it mirrors the port settings in the WindLDR software.

Next select the PLC device and set the Drop Number to the same value as configured in the WindLDR software in the first step of this section.

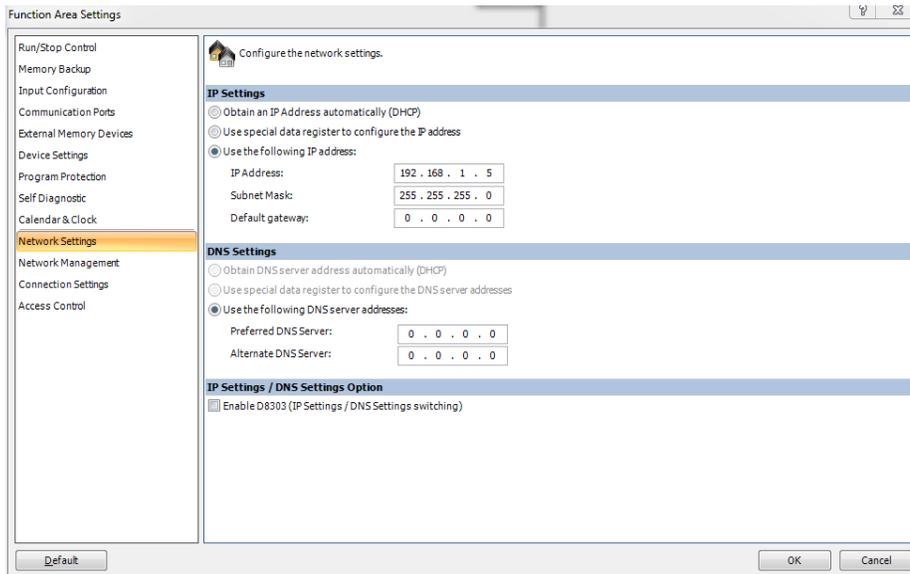


# Ethernet Port Configuration

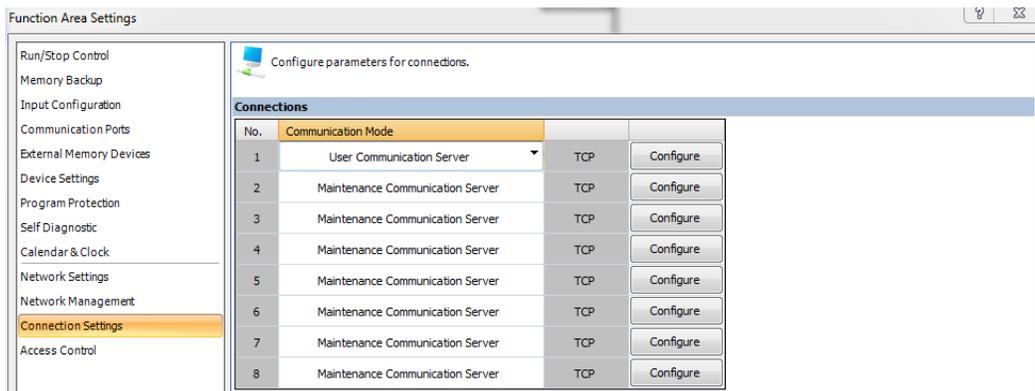
In IDEC's WindLDR software, click on Comm Ports in the Configuration tab of the tool bar.



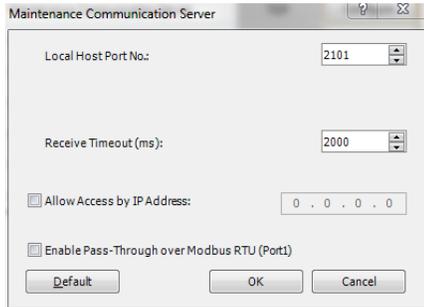
Click on Network Settings and configure an appropriate IPv4 address according to the network requirements. Please consult your IT department for assistance if needed.



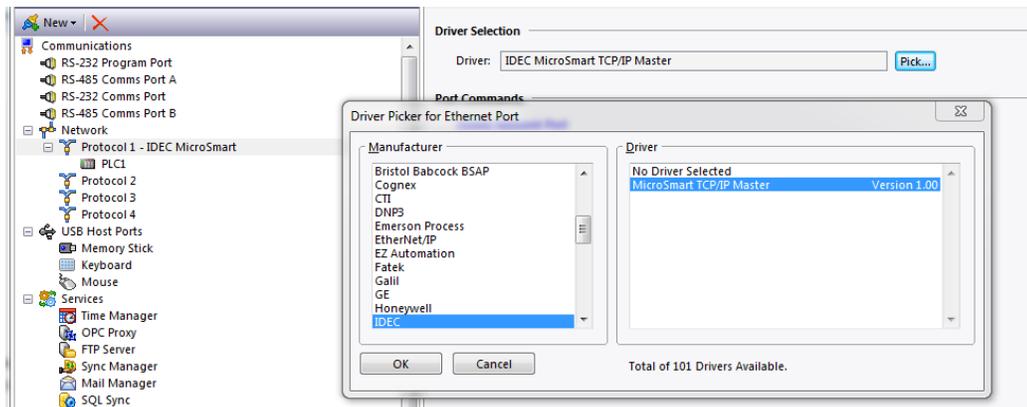
Next click on Connection Settings.



Click on the Configure button for the desired Maintenance Communication Server connection. Set/note the Local Host Port Number.

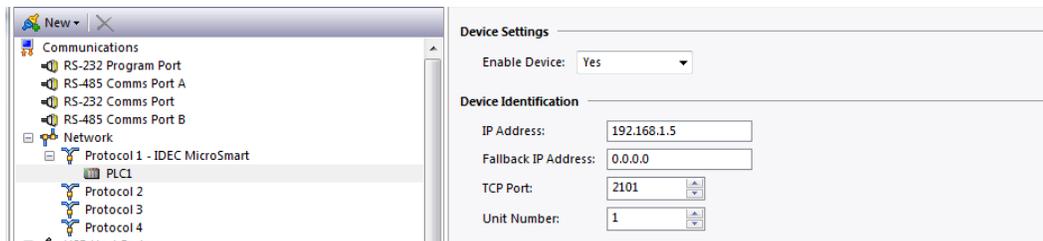


In Crimson's Communications category select an available protocol in the Network element of the Communications tree and click on the Pick... button.



Find the IDEC MicroSmart TCP/IP Master communications driver as shown above and click OK.

Next, configure the Primary IP Address and the TCP Port such that it matches the IPv4 address and the Local Host Port Number in the WindLDR configuration respectively.



Note - Only configure the Fallback IP Address if there is a secondary IDEC IP address for redundancy communications.

Also ensure that the Red Lion device's Ethernet Port Settings are configured – please refer to the **NETWORK CONFIGURATION** section within the Crimson manual.

## Ethernet User Access

Ethernet configuration access is provided to the Red Lion device's UI by using the DevCtrl function:

INT **DEVCTRL**(DEVICE, FUNCTION, DATA)

For DEVICE use the Device Number shown in Crimson's lower Toolbar when the IDEC PLC is selected in the Communications tree.



For FUNCTION reference the codes below.

Function Code	Operation Performed
1	Set Primary IP Address
5	Set Fallback IP Address
2	Set TCP Port
4	Get Primary IP Address
6	Get Fallback IP Address
7	Get Fallback Status (1 = Fallback active, 0 = Primary active)

DATA is defined as a string containing write data.

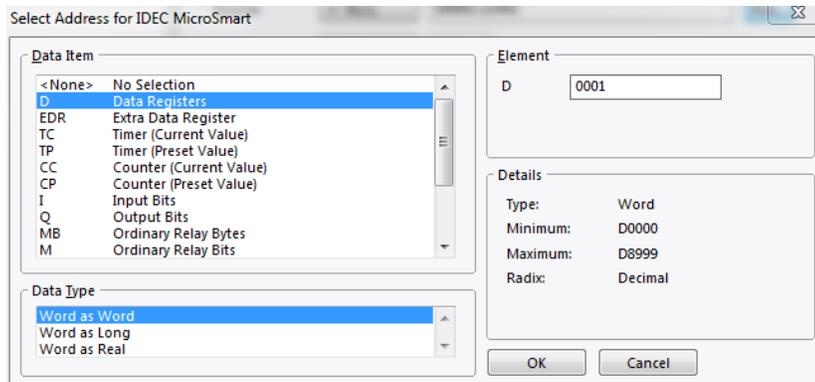
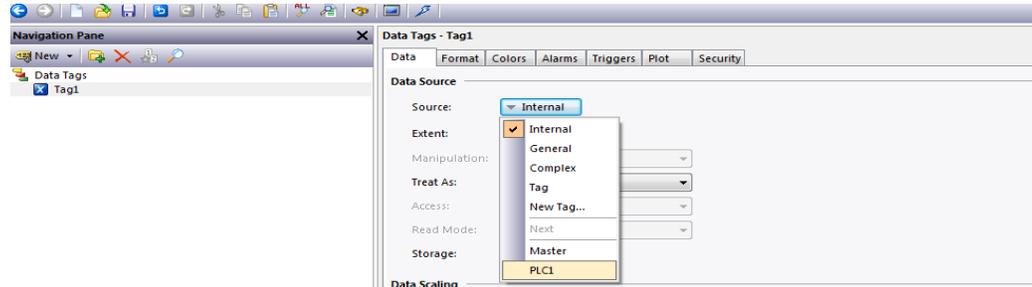
Note returned data is always a number.

For demonstration purposes consider the following functions within a user program accessing Device Number 1:

```
Programs - EthernetConfig_1
Source Properties
Data Types
  Prototype: void EthernetConfig_1(void) Edit...
Program Code
  // Set Primary IP Address to 192.168.1.15
  DevCtrl(1, 1, "192.168.1.15");
  // Set Fallback IP Address to 192.168.1.16
  DevCtrl(1, 5, "192.168.1.16");
  // Set TCP Port to 2110
  DevCtrl(1, 2, "2110");
  // Get Primary IP
  PrimaryIP = DevCtrl(1, 4, "");
  // Get Fallback IP
  FallbackIP = DevCtrl(1, 6, "");
  // Get Fallback Status ( 1 = Fallback active, 0 = Primary active )
  FallbackStatus = DevCtrl(1, 7, "");
```

## Data Access

The IDEC address selection dialog box is found by selecting the device representing the IDEC PLC device in the Source drop down box of a Tag created in the Data Tag category in Crimson.



The following IDEC address memory registers are available for access.

Prefix	Description	Data Types	Format	Range	Access
D	Data Register	Word, Long, Real	Decimal	0-8999	R/W
EDR	Extra Data Register	Word, Long, Real	Decimal	10000-55999	R/W
TC	Timer (Current Value)	Word	Decimal	0-1023	RO
TP	Timer (Preset Value)	Word	Decimal	0-1023	R/W
CC	Counter (Current Value)	Word	Decimal	0-511	RO
CP	Counter (Preset Value)	Word	Decimal	0-511	R/W
I	Input Bits	Bit	Decimal*	0-637	R/W
Q	Output Bits	Bit	Decimal*	0-637	R/W
MB	Ordinary Relay Bytes	Byte	Decimal	0 – 799	R/W
M	Ordinary Relay Bits	Bit	Decimal*	0 – 7997	R/W
S8	Special Relay Bits	Bit	Decimal*	8000 – 8317	R/W
RB	Shift Register Bytes	Byte	Decimal	0 – 248	R/W
R	Shift Register Bits	Bit	Decimal	0 – 255	R/W
IB	Input Bytes	Byte	Decimal	0 – 63	R/W
QB	Output Bytes	Byte	Decimal	0 – 63	R/W
SB8	Special Relay Bytes	Byte	Decimal	800 – 831	R/W

\*The least significant digit is an octal number (0-7). This is consistent with WindLDR access.

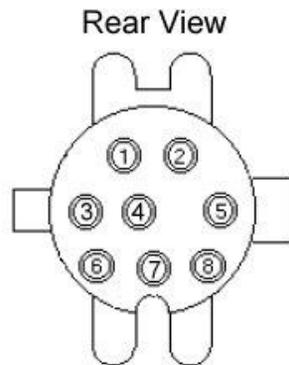
## Serial Cable Information

Red Lion RS232 RJ12 Port	IDEC MicroSmart FC6A RJ45 Port
Pin 2 - Rx	2 - SD
Pin 5 - Tx	1 - RD
Pin 3 - COMM	8 - GND

Red Lion RS485 RJ45 Port	IDEC MicroSmart FC6A RJ45 Port
7 - TxB	4 - A
8 - TxA	5 - B
6 - COMM	8 - GND

Red Lion RS232 RJ12 Port	IDEC (8 way male mini-DIN)
5	4
2	3
4	7

Red Lion RS485 RJ45 Port	IDEC (8 way male mini-DIN)
1	1
2	2
6	7
3 and 8	NC
4 and 7	NC



## Ethernet Cable Information

Standard Ethernet Cable

## **Revision History**

08/07/18 – Created.