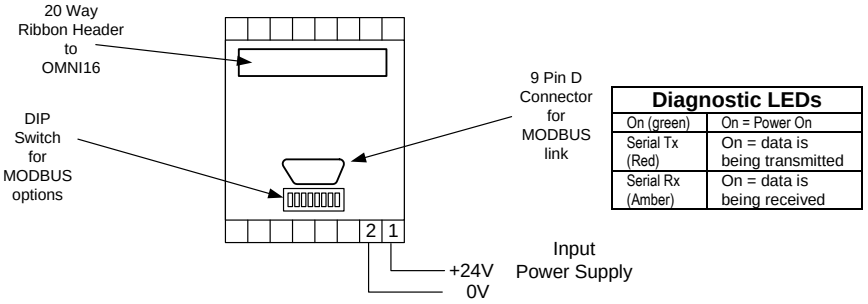
3. Electrical Specification

Supply Voltage	24Vdc +/- 15%	Power Requirement	120mA max. all O/Ps On
Output Type	Open Collector NPN transistor switches to 0V		
Output Max.Current	50mA max		
Output Voltage when off	27Vdc max	Voltage when on	< 1V at 50mA
Output Isolation	None – shares 0V common with 24Vdc supply		
Serial Port Isolation	1500Vac between serial port and 24Vdc system.		
Memory Storage	Any configuration parameters stored in non-volatile EEPROM		

4. Terminal Layout



Diagnostic LEDs	
On (green)	On = Power On
Serial Tx (Red)	On = data is being transmitted
Serial Rx (Amber)	On = data is being received

Figure 2: Module Layout C2304

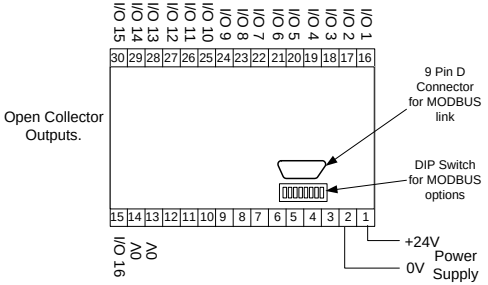


Figure 3: Module Layout C2305

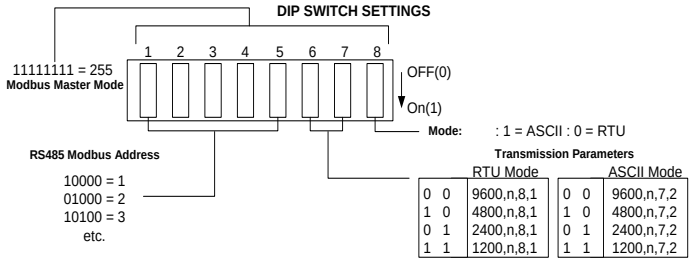


Figure 4: DIP Switch Settings

Note that '1' is ON, while '0' is OFF

5. Serial Port Connections

Pin Number	Mode selected	
	RS232	RS485
1	No connection	Rx Data+
2	Rx Data	Rx Data-
3	Tx Data	No connection
4	No connection	Tx Data +
5	Ground	Ground
6		No connection
7	RTS	No connection
8	CTS	No connection
9	No connection	Tx Data -

***No Connection = Do not connect this pin when using the device in this mode**

GENERAL INSTRUCTION

C2304/5C

Modbus Interface Modules - Outputs

1. General Description

The C2304, C2305, Omni16/Modbus Interface Modules are DIN rail mount devices powered from 24Vdc. Their function is to provide outputs to the field for Omni16 remote displays or auxillary outputs for computer SCADA systems vis RS232/RS485 serial communications using the Modbus protocol.
The C2304 is equipped with a 20 way ribbon header suitable to connect directly to any existing Omni16 Remote Display input. The C2305 is equipped with screw terminals for connecting up to 16 hard-wired general purpose outputs.
Either RS232 or RS485 is selectable via choice of pinout on the DB9.
Each module can act as a Modbus master or Modbus slave device in either ASCII or RTU mode. Up to 32 Modbus master queries can be configured, i.e. when acting as Modbus Master, the C2304/5 can communicate to 32 slave devices using RS485. Refer to User Manual for detailed Modbus Master Operation. Each unit is equipped with a single 8 way DIP switch on which the parameters for the Modbus serial port are selected. Using the modules in RS485 mode, up to 32 of these units may be daisy-chained from a single Modbus Master. In this configuration, up to 512 I/O (i.e. up to 32 Omni16's) may be monitored from a single Modbus Master.

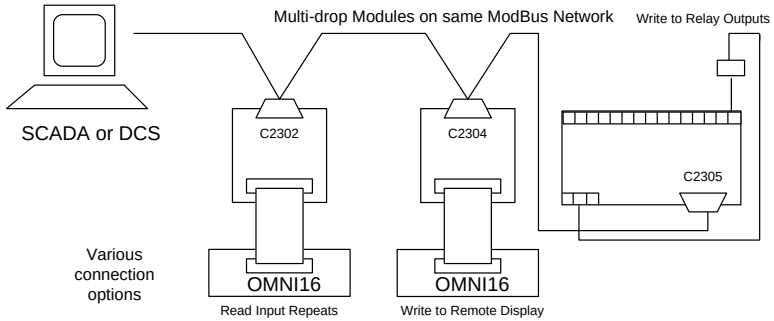


Figure 1: Typical Application

Modbus Register Functions

Function 3	Read 1 holding register from address 101 for outputs 1 to 16.	
Function 5	Write 1 coil to address 1 to 16 (O/P 1-16)	Bit write up to 16 O/Ps
Function 6	Write 1 holding register to address 101 where O/P1 =LSB	
Function 16	Write multiple registers a maximum of 4 register per write. Refer to the User Manual for more information.	

2. Specifications

DESCRIPTION	C2304C	C2305C
MODULE WIDTH (along DIN Rail)	55mm	100mm
MODULE HEIGHT (above DIN Rail)	115mm	
MODULE LENGTH (away from panel)	75mm	
MOUNTING	35mm x 7.5mm DIN Rail(EN50 022)or wall-mounting.	
TERMINAL WIRE CROSS SECTION	2.5mm^2 maximum	
HOUSING MATERIAL	Polycarbonate UL 94 V-1	
TERMINAL MATERIAL	Polycarbonate UL 94 V-2	
COLOUR	Light Grey	
OPERATING TEMPERATURE	0 to +60 °C (-13 to 140 °F)	
STORAGE TEMPERATURE	-40 to +70 °C (-40 to +158 °F)	
HUMIDITY	5% to 95% at 40 °C (104°F) (non-condensing)	
MASS EXCLUDING PACKAGING	C2304: 205g (7.23oz); C2305 315g (11.11oz)	