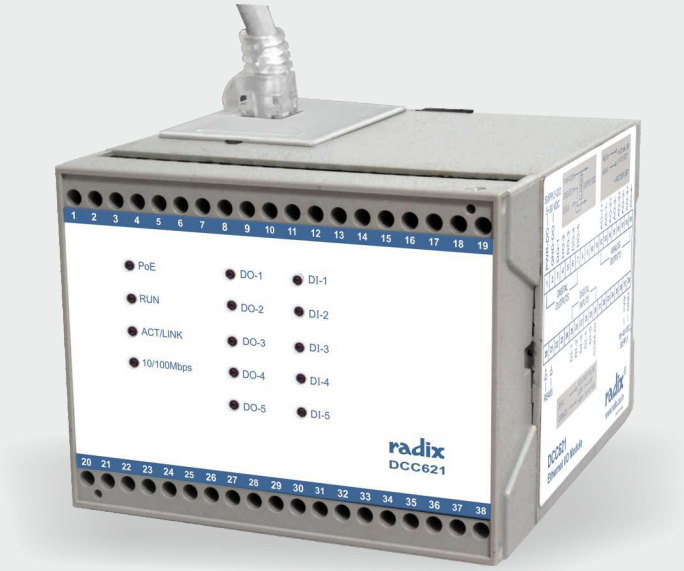
ETHERNET I/O MODULE

5 Inputs, 5 Outputs, RS485 Port for I/O Expansion

DCC621



5 Digital Inputs

5 Digital Outputs

Power over Ethernet (POE)

RS485 port for I/O expansion

AUTO MDI/MDIX

Automatic MDI/MDI-X detection

18~48V DC Power Supply

10/100 Mbps Ethernet port

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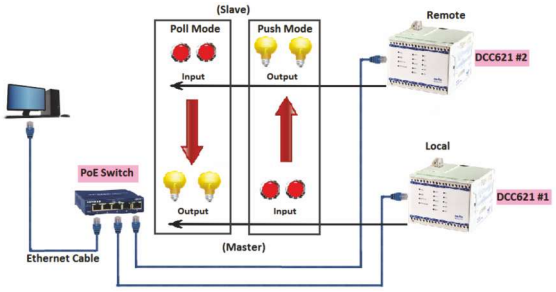
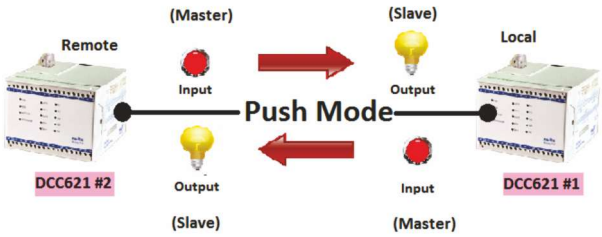
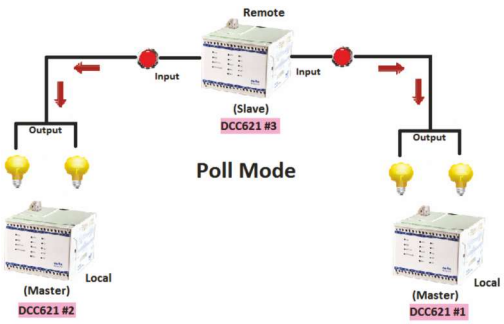
ONE MODULE POLLING THE REMOTE DI/DO (1-TO-1, POLLING MODE)



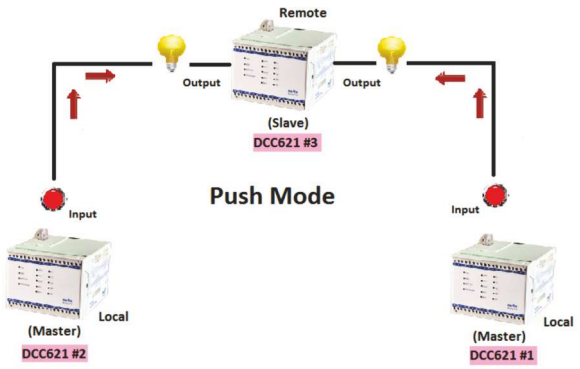
TWO MODULES PUSHING THE LOCAL DI TO EACH OTHER (1-TO-1, PUSH MODE)



SEVERAL MODULES POLLING THE REMOTE DI (M-TO-1, POLLING MODE)



SEVERAL MODULES PUSHING THE LOCAL DI (M-TO-1, PUSH MODE)



ETHERNET I/O MODULE

5 Inputs, 5 Outputs, RS485 Port for I/O Expansion

DCC621

ABOUT DCC621

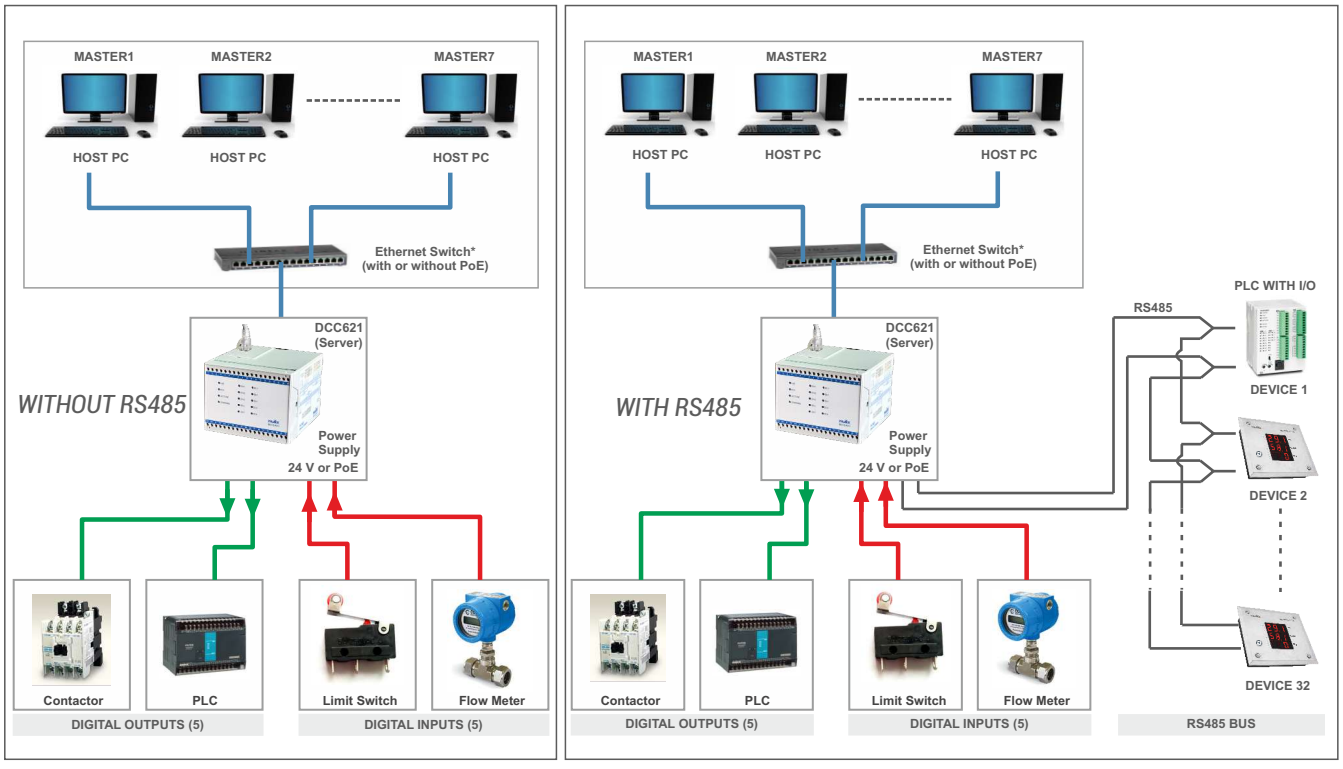
DCC621 is an IP based Ethernet I/O Module for monitoring and controlling applications. It can be operated over a LAN and has a variety of Input/Output functions. The module can be remotely controlled through a 10/100 M Ethernet network using the MODBUS TCP protocol. MODBUS is the de facto standard communications protocol, and is now the most commonly available means of connecting industrial electronic devices. This makes DCC621 ideal for integration with HMI, SCADA, PLC and other software systems.

It has 5 opto-isolated digital input ports which can be configured as digital inputs (eg limit switches), counter inputs (eg flowmeter pulses) or frequency inputs. It also has five opto-isolated digital output ports which can be configured as digital outputs (eg to operate a relay) or PWM outputs (eg to generate a variable voltage). Digital outputs are open collector type with 100mA sinking capacity for each channel. DCC621 reads digital inputs and writes digital outputs either from a local web page or by using MODBUS TCP on SCADA software. It also has an RS485 port which is used to convert MODBUS TCP to MODBUS RTU protocol. DCC621 supports MODBUS TCP Client / Server protocol.

DCC621 has a pairing function. This allows one DCC621 to be paired with another DCC621, or any other equivalent instrument of another make. After pairing, the input of the first instrument is recreated as the output of the second.

DCC621 offers true IEEE 802.3af-compliant (classification, Class 1) Power Over Ethernet (PoE) functionality using a standard Category 6 Ethernet cable to receive power from a PoE switch such as the Netgear model FS108Pv3. If a PoE switch is not available, the module will also accept power input an external power supply (18 to 48 VDC).

APPLICATION



ETHERNET I/O MODULE

5 Inputs, 5 Outputs, RS485 Port for I/O Expansion

DCC621

SPECIFICATIONS

All specifications at ambient of 25 °C, unless specified otherwise

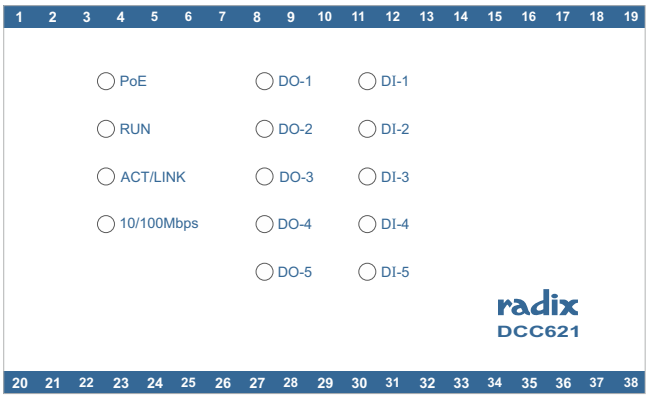
SYSTEM	
CPU	32 bit MCU
COMMUNICATION INTERFACE	
Ethernet	10/100 Base-TX, 8-pin RJ-45X1, (Auto-negotiating, LED indicator) PoE (IEEE 802.3af, Class 1)
Utility software	Browser based configuration utility
Ethernet protocol	HTTP, UDP, DHCP, MODBUS TCP protocols
Serial protocol	MODBUS RTU
COM1	2-wire RS485
Self-tuner	Yes (automatic RS485 direction control)
COM PORT FORMAT	
Baud rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Data bit	8
Parity	None, Odd, Even
Stop bit	1, 2
DIGITAL INPUT	
Input type	Wet contact (Sink)
On voltage level	+10 VDC ~ +50 VDC
Off voltage level	+4 VDC max
Input impedance	10KΩ
Counter input frequency	5KHz
DIGITAL OUTPUT	
Output type	Open collector (NPN)
Output voltage	+5 VDC ~ +30 VDC
Max. load current	100mA/channel
PWM	100Hz max (The high as well as low duty cycle range = 5 ~ 65,535 milliseconds)
ISOLATION	
With external power supply (without PoE)	
Mutual, between inputs, outputs, RS485, power supply & Ethernet	1500 VAC RMS, 1 minute
Between inputs	Not provided
Between outputs	Not provided
With PoE (no external power supply)	
Mutual, between inputs, outputs, RS485 and power supply	1500 VAC RMS, 1 minute
Mutual, between power supply and Ethernet	Not provided
ENCLOSURE	
Material	ABS plastic
Dimensions	100(W) x 75(H) x 110(D) mm See Fig 1
Mounting	Snap ON for 35 mm DIN rail to DIN 46277
Protection	IP20
CONNECTIONS	
Single / stranded wires	2.5mm², AWG 14
2-wire RS485	D+, D-
Digital inputs	DI-X, COM-DI
Digital outputs	DO-X, PWR-DO, GND-DO
TEMPERATURE, HUMIDITY	
Operating temperature	0 to 65°C
Storage temperature	-30 to 80°C
Ambient relative humidity	10 to 90% (non-condensing)

ETHERNET I/O MODULE

5 Inputs, 5 Outputs, RS485 Port for I/O Expansion

DCC621

LED AND CONNECTION DETAILS



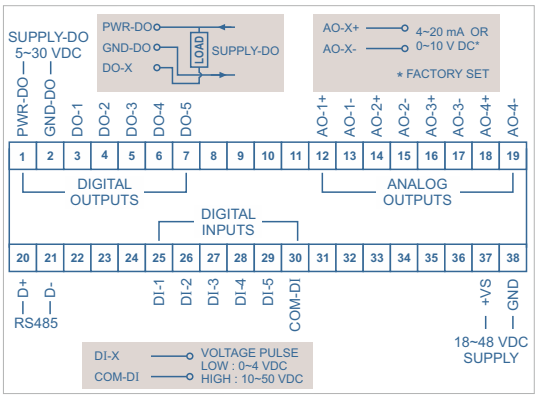


TABLE 1 : LED DETAILS

Name	Status	Details
PoE	ON	The Module is powered by PoE supply
RUN	Flashing	The Module is turned on
ACT/LINK	Flashing	Data transmission or receiving activity is occurring on Ethernet port
10/100Mbps	ON	The Ethernet port is operating at 10 Mbps
	OFF	The Ethernet port is operating at 100 Mbps

Name	Status	Details
DO-X	ON	Output level High
	OFF	Output level Low
DI-X	ON	Input level High
	OFF	Input level Low

TABLE 2 : CONNECTION DETAILS

Terminal No.	Terminal Name	Details
1	PWR-DO	Power terminal of external supply for output
2	GND-DO	Ground terminal of external supply of output
3	DO-1	Open collector Output 1
4	DO-2	Open collector Output 2
5	DO-3	Open collector Output 3
6	DO-4	Open collector Output 4
7	DO-5	Open collector Output 5
8	-	NC
9	-	NC
10	-	NC
11	-	NC
12	AO-1+	Positive terminal of Analog Output 1 *
13	AO-1-	Negative terminal of Analog Output 1 *
14	AO-2+	Positive terminal of Analog Output 2 *
15	AO-2-	Negative terminal of Analog Output 2 *
16	AO-3+	Positive terminal of Analog Output 3 *
17	AO-3-	Negative terminal of Analog Output 3 *
18	AO-4+	Positive terminal of Analog Output 4 *
19	AO-4-	Negative terminal of Analog Output 4 *

Terminal No.	Terminal Name	Details
20	D+	RS485 Data+
21	D-	RS485 Data-
22	-	NC
23	-	NC
24	-	NC
25	DI-1	Potential difference Input 1
26	DI-2	Potential difference Input 2
27	DI-3	Potential difference Input 3
28	DI-4	Potential difference Input 4
29	DI-5	Potential difference Input 5
30	COM-DI	Common terminal for Input
31	-	NC
32	-	NC
33	-	NC
34	-	NC
35	-	NC
36	-	NC
37	+VS	18 ~ 48 VDC
38	GND	

Note : Terminal no's marked in* are not applicable

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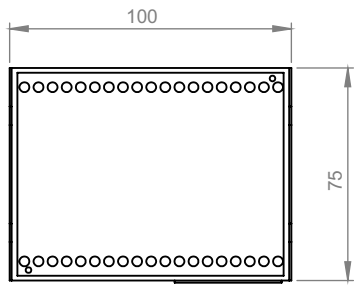
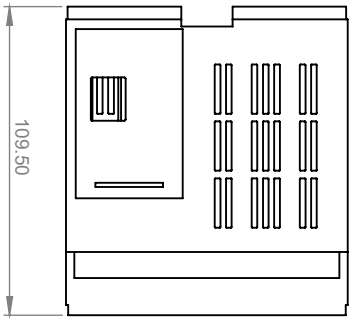
DCC621

DIMENSIONS mm

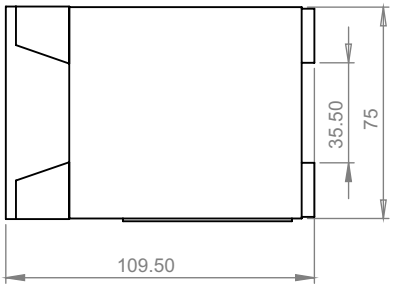
Fig 1



Front View



Top Side View



Right Side View

FEATURES SUMMARY

- 5 digital inputs: Digital, Frequency, Counter
- 5 digital outputs: Digital, PWM
- 10/100 Mbps Ethernet port
- Automatic MDI/MDI-X detection for plug-and-play
- Browser based configuration utility
- HTTP, UDP, DHCP, MODBUS TCP protocols
- Supports MODBUS TCP Client/Server
- Serial interface : RS485
- 7 simultaneous MODBUS TCP masters
- Configurable baud rate, parity, stop bits, IP address, TCP client/server port number
- 18~48 VDC power supply
- I/O pair connection
- Default parameters : Can be restored by pressing reset switch at power ON
- Mounting : DIN rail
- Redundant power inputs: PoE (IEEE 802.3af, Class 1) and power terminals
- 4 Analog outputs (Optional)

ORDERING INFORMATION

CODE	SPECIFICATIONS	1	2	3
2704				
1	**PoE**			
	Without PoE	0		
	With PoE	1		
2	**RS485 port**			
	Without RS485 port		0	
	With RS485 port		1	
3	**Analog output***			
	None			0
	X			1

* Not provided currently

CODE -1-2-3

Order Code Format : 2704-X-X-X

Example

With PoE, RS485 port
2704-1-1-0

ENQUIRIES

Instruments : sales@radix.co.in • + 91 9324934061
Sensors : sensors@radix.co.in • + 91 9321415829
Gauges : gauges@radix.co.in • + 91 8591305907
Automation : automation@radix.co.in • + 91 9320997925
Level : level@radix.co.in • + 91 8591305907
Flow : flow@radix.co.in • + 91 8591305907

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