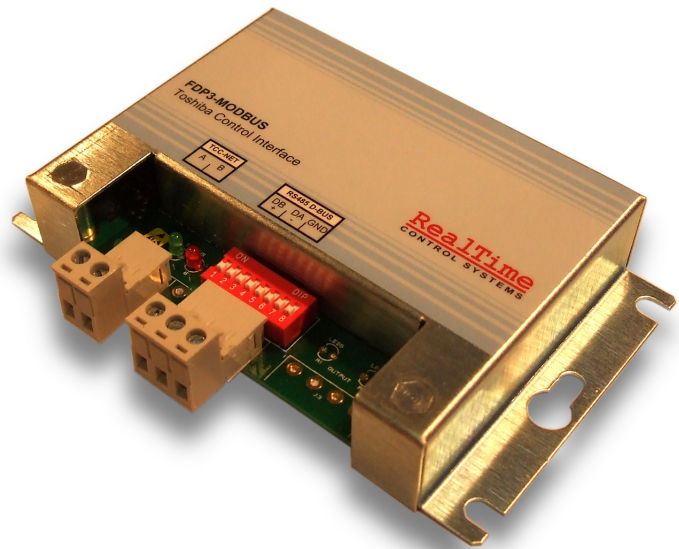


Toshiba VRF and Split Solutions

Modbus Interfacing



FDP3-MODBUS Control Interface



DESCRIPTION

The FDP3-Modbus is a low cost Modbus based monitoring and control interface for Toshiba VRF and Split ranges of air-conditioners. The interface is compatible with all units that have a TCC-NET A,B remote controller network connection. No other network adaptor cards are required even for split A/C units.

FUNCTIONS

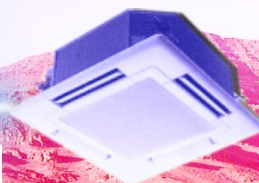
MODBUS CONTROL Control of Setpoint, Fanspeed, Runmode, Louvre mode and on/off state through Modbus registers. Upto 8 A/C units can be controlled as a group.

REMOTE CONTROLLER Facility to individually lock and unlock each remote controller button associated with unit control.

FAULT CODES Readback of all indoor and outdoor unit fault codes for each A/C unit.

UNIT TEMPERATURES Indoor unit air and coil temperatures is available for each A/C unit.

MODBUS NETWORK Multiple FDP3-Modbus interfaces can be networked on an RS485 network to provide control of multi-zone systems.





TOSHIBA NETWORK

Network Toshiba TCC-NET / A-B Terminals
Length 500m
AC Units Up to 8 Indoor units controlled as a group
FDP3 Power From A-B Network, <1.2VA
Compatibility VRF and Split units with TCC-NET Support
Controls One Wired Remote Controller supported
 Not compatible with other TCC-NET controls e.g. Remote Sensors

MODBUS NETWORK

Network 3 wire RS485
Mode Modbus RTU Slave
Length 500m
Addresses 0 to 63
RS485 Load ½ Unit Load, up to 62 devices on a single network
Baud 9600
Parity None
Stop bits 1
Register Base 0
Note: FDP3 interfaces can be configured with different baud rate and parity settings if required

COMMON MODBUS REGISTERS*

HOLDING REGISTERS

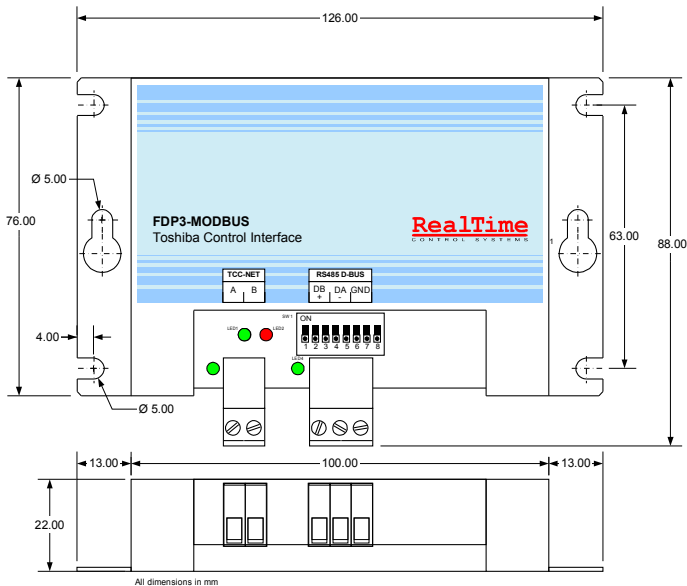
Holding Register	Name	Range
0001	Setpoint	10..40
0002	Fanspeed	0..3 (0:Auto, 1:Low, 2:Medium, 3: High)
0003	Mode	0..4 (0:Auto, 1:Heat, 2:Fan, 3:Cool, 4:Dry)
0004	Louvre	1..7 (1:Swing, 2: 0 Degrees, 3: 20 Degrees, 4:45 Degrees, 5:70 Degrees, 6:90 Degrees)
0005	OnOff	0..1 (0:Off, 1:On)

INPUT REGISTERS

Input Register	Name	Range	Notes
0020	Unit Count	0..16	Number of units found on network
0021	Is Fault	0..1	0:No Fault, 1: At least one unit in fault
0022	Fault Code	0..65535	255: No Fault, else fault code from first unit in fault
0023	Return Air Average	Degrees C x 100	Average of all unit return air temperatures
0024	Filter Alarm	0..1	0: No Alarm, 1: At least one unit with filter alarm
0025	Return Air Min	Degrees C x 100	Minimum of all unit return air temperatures
0026	Return Air Max	Degrees C x 100	Maximum of all unit return air temperatures
0030	Thermo On	0..3	Summary of unit operation 0:Idle/Fan, 1:Heating, 2:Cooling, 3:Heat and Cool
0035	Defrost	0..1	0: No defrost, 1: At least one unit in defrost

Unit 1	Unit 2	...	Unit 8	Name	Range	Notes
0121	0221	...	0821	Is Fault	0..1	0: No Unit Fault, 1: Unit in Fault
0122	0222	...	0822	Fault Code	0..65535	255: No Fault, else fault code
0123	0223	...	0823	Return Air Temperature	Degrees C x 100	Unit Return Air Sensor Value
0124	0224	...	0824	Filter Alarm	0..1	0: No Alarm, 1: Filter Alarm
0130	0230	...	0830	Thermo On	0..2	0:Idle/Fan, 1:Heating, 2:Cooling
0131	0231	...	0831	Coil TC* Temperature	Degrees C x 100	TC Coil Temperature (*TC2 for VRF)
0132	0232	...	0832	Coil TCJ Temperature	Degrees C x 100	TCJ Coil Temperature
0134	0234	...	0834	Indoor Duty	0..15	Unit Duty 0..15 = 0..100%
0135	0235	...	0835	Defrost	0..1	0:Unit Operating, 1:Unit Defrost

*Additional registers available for advanced control and monitoring functions. See Installation Instructions for details.



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