

Turntide VRF Adapter

As the perfect companion to Daikin® VRV, the Turntide VRF Adapter enables building managers to get the most out of their VRV system.

Unlike most VRV controller solutions available today, the Turntide VRF Adapter puts data and insights from a VRV system at your fingertips with the Turntide App, unlocking the ability to generate advanced reports, improved service workflows, and system data anytime, anywhere.

Specifications

Model	RT-500BP
Description	Turntide VRF Adapter
Max Indoor Units per Adapter	128 (64 Group Addresses)
Power Supply	USB Powered
Power Consumption	0.5 amps
Operating Temp Range	14-140 °F
Operating Humidity Range	0-95% (w/o condensation)
Dimensions (W x H x D)	4.13 x 3.54 x 1.00 in
Mounting	DIN Rail
USB Port - USB 2.0	1
DIII-Net Systems	1
D-Net Cable	2-core, 18-16 AWG, shielded or vinyl-insulated/vinyl-sheathed cable
Max Cable Length	1000 m



Model Compatibility

- Compatible with VRV Emerion, IV-X, IV, Aurora, III, T-Series & W-Series
- Compatible with FTXS, CTXS, CTXG, FTXG, FDXS, CDXS, FVXS with the use of the DIII-Net Adapter KRP928BB2S.

Features

- VRF Adapter can manage one D-III Network, up to 64 indoor unit groups per network
- Multiple VRF Adapters can be used to manage more than 64 units
- Connect up to 8 VRF Adapters to one Turntide Hub with Turntide's USB expander
- VRF Adapter connects to Turntide Hub using USB 2.0 connection

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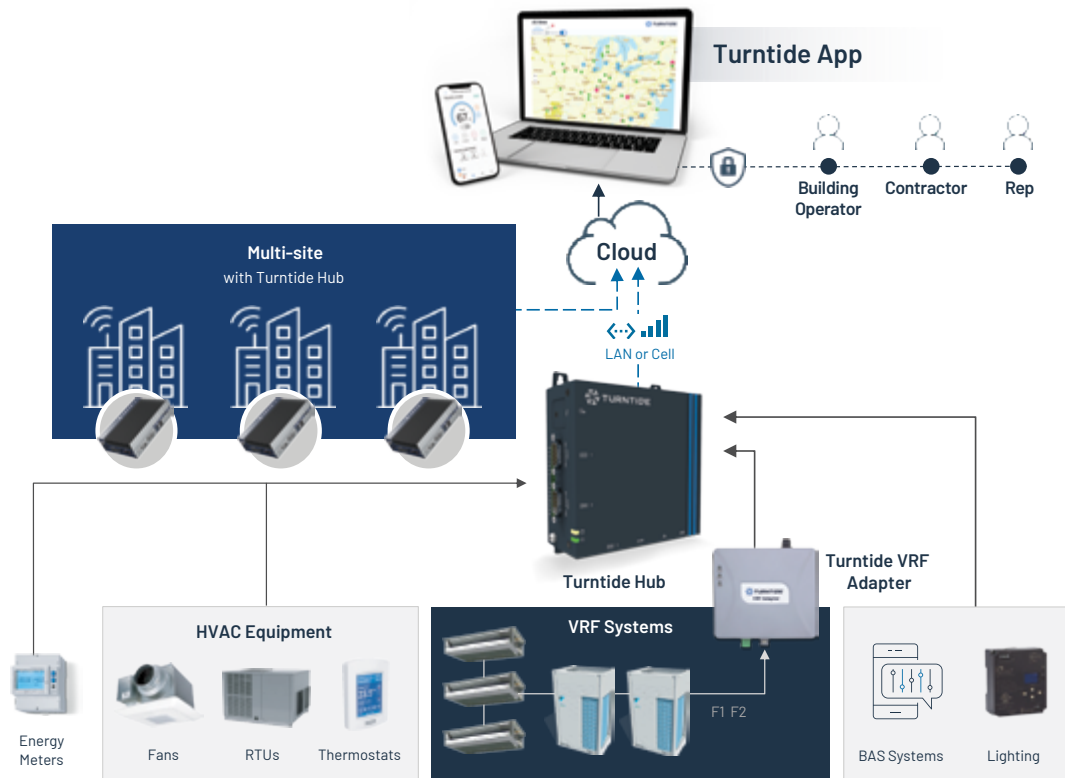
VRF Adapter Troubleshooting



LED Light Function	Status	Meaning
POWER	No light	Check power source to USB expander
	Green	Powered on
RxTx	No light	No data on DIII-Net bus. Check units are on and active
	Blinking blue	Data present on DIII-Net bus
ERR	No light	Normal
	Solid Amber	Power issue or data inconsistency with DNET BUS. Check power supply at USB expander
	Blinking Amber	Data collision. VRF system wiring
	Solid red	Not able to send data on the DNET BUS; Hub communication issue. Power cycle Hub to retry communication

Note: The Turntide HUB only recognizes known USB devices like the VRF adapter on a HUB power cycle or HUB software restart. If VRF adapter USB cabling has been altered, either directly at the HUB USB port(s) or at the ports of a connected USB expander, then the HUB software must be restarted or the HUB power cycled to recognize the VRF adapter's current connection

Turrtide VRF Architecture

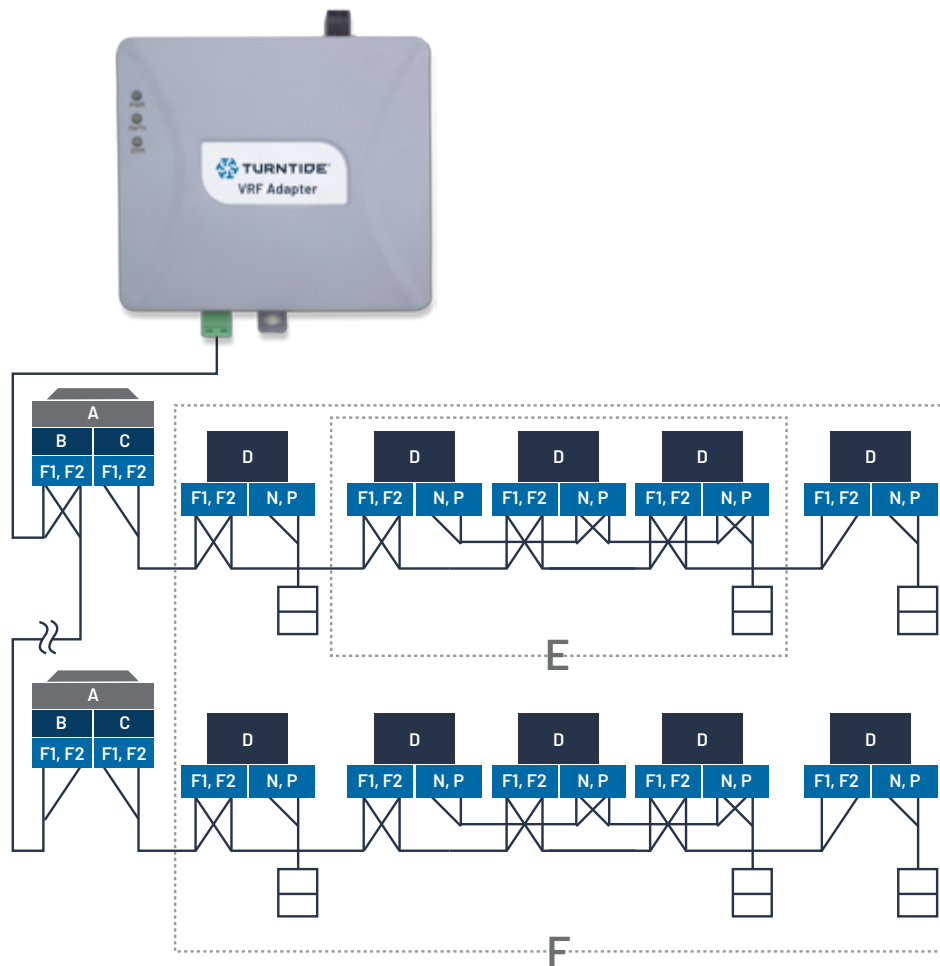


Indoor Unit Points

Point Name	
Alarm - Device Offline	On-Off
Capacity Increase	Operation-Stop
EEV Opening	Reset Filter Indicator
Fan Speed	Return Air Temperature
Filter	Room Temperature
Gas Pipe Temperature	Setpoint
Indoor Unit Model Code	Superheat
Liquid Pipe Temperature	Thermostat - Lock Mode
Louver Position	Thermostat - Lock On-Off
Malfunction Code	Thermostat - Lock Temperature
Mode	Thermo On

BELOW POINTS AVAILABILITY IS SUBJECT TO CONFIGURATION	
Minimum Cooling Setpoint	Occupied Cooling Setpoint
Maximum Cooling Setpoint	Unoccupied Cooling Setpoint
Minimum Heating Setpoint	Occupied Heating Setpoint
Maximum Heating Setpoint	Unoccupied Heating Setpoint

VRF Adapter Wiring



A	Outdoor unit
B	OUT - OUT communication (terminal)
C	IN - OUT communication (terminal)
D	Indoor unit
E	A maximum of 16 indoor units can be connected 1per remote controller group.
F	A maximum of 64 remote controller groups (128 indoor units) can be connected.

Sample Outdoor Unit Points

VRV Point	Outdoor Unit Type			
	Emerion HR	VRV IV-X & Aurora HR	VRV IV HR	VRV T-Series HR
Accumulator Inlet Temperature			x	x
Accumulator Oil Return Status	x		x	x
Airnet Address	x	x	x	x
Alarm - Device Offline	x	x	x	x
Ambient Temperature	x	x	x	x
Back Up Operation Status	x	x	x	x
Box Air Temperature	x			
Box Outlet Air Temperature	x			
Compressor 1 Current		x	x	
Compressor 1 Body Temperature	x			x
Compressor 1 Discharge Step Down Status	x	x	x	
Compressor 1 Discharge Temperature	x	x	x	x
Compressor 1 Inverter Status	x	x	x	x
Compressor 1 Inverter Step Down Status	x	x		
Compressor 1 Overcurrent Step Down Status		x	x	
Compressor 1 Operation Current	x			
Compressor 2 Body Temperature	x			
Compressor 2 Current		x	x	
Compressor 2 Discharge Step Down Status	x	x	x	
Compressor 2 Discharge Temperature	x	x	x	
Compressor 2 Inverter Status	x	x	x	
Compressor 2 Inverter Step Down Status	x			
Compressor 2 Overcurrent Step Down Status		x	x	
Compressor Suction Pipe Temperature		x		
Compressor Surface Temperature		x	x	
Compressor 2 Operation Current	x			
Condensing Temperature	x	x	x	x
Cool Heat Parallel Status	x	x		x
Cooling Status	x	x	x	x
Crank Case Heater Status				x
Crank Case Heater 1 Status	x	x	x	
Crank Case Heater 2 Status	x	x	x	
Defrost Status	x	x	x	
Demand State	x	x	x	
Demand Step Down Status	x	x	x	x

Sample Outdoor Unit Points (Continued)

VRV Point	Outdoor Unit Type			
	Emerion HR	VRV IV-X & Aurora HR	VRV IV HR	VRV T-Series HR
Discharge Pipe Retry Status	x	x	x	x
Drain Pan Heater Status		x	x	
Energy Cut Output Status		x	x	
Error Code	x	x	x	x
Error State	x	x	x	x
EV Main Liquid Opening				x
EV Purge Opening				x
EV Sub Cool Opening				x
EV1 Opening Heat Exchanger Right Upper	x	x	x	
EV2 Opening Heat Exchanger Right Lower	x	x	x	
EV3 Opening Heat Exchanger Subcooling	x	x	x	
EV4 Opening Refrigerant Cooling IPM	x	x		
EV5 Opening Receiver Gas Purge	x	x		
EV6 Opening Refrigerant Cooling Air	x	x		
EV7 Opening Auto Charge	x			
EV8 Opening Heat Exchanger Left	x			
Evaporation Temperature	x	x	x	x
Fan 1 Rotation Amount		x	x	
Fan 2 Rotation Amount		x	x	
Fan Status				x
Fan Secondary Current	x			
Fan Step	x	x	x	
Four Way Valve Dual PR Status				x
Four Way Valve Heat Exchanger Lower	x	x		
Four Way Valve Heat Exchanger Upper	x	x		
Four Way Valve Phe Status				x
Four Way Valve Heat Status			x	
Four Way Valve Status		x	x	
Four Way Valve Status Heat Exchanger Left	x			
Four Way Valve Status HP LP Gas Pipe	x			
Gas PHE Water Temperature				x
Gas Purge Status				x
Heat Exchanger Gas Temperature	x			
Heat Exchanger Gas Pipe Temperature Lower		x		

Sample Outdoor Unit Points (Continued)

VRV Point	Outdoor Unit Type			
	Emerion HR	VRV IV-X & Aurora HR	VRV IV HR	VRV T-Series HR
Heat Exchanger Gas Pipe Temperature Upper		x		
Heat Exchanger Left Deicer Temperature	x			
Heat Exchanger Left Liquid Pipe Temperature	x			
Heat Exchanger Liquid Pipe Temperature Lower	x			
Heat Exchanger Liquid Pipe Temperature Upper	x			
Heat Exchanger Liquid Temperature	x	x	x	
Heat Exchanger Right Deicer Temperature	x			
Heat Exchanger Right Gas Pipe Temperature Lower	x			
Heat Exchanger Right Gas Pipe Temperature Upper	x	x		
Heat Exchanger Temperature		x	x	
Heating Status	x	x	x	x
High Pressure Retry Status	x	x	x	x
High Pressure Step Down Status	x	x	x	x
Horsepower	x	x	x	x
Hot Gas Bypass Valve Status				x
Hot Gas Oil Return Status				x
Injection Status	x			
Inverter 1 Fin Step Down Status	x	x	x	
Inverter 1 Fin Temperature		x	x	
Inverter 1 Rotation Amount	x	x	x	
Inverter 1 Standby Status	x	x	x	
Inverter 1 Temperature	x			
Inverter 2 Fin Temperature		x	x	
Inverter 2 Fin Step Down Status	x	x	x	
Inverter 2 Rotation Amount	x	x	x	
Inverter 2 Standby Status	x	x	x	
Inverter 2 Temperature	x			x
Inverter Cool Fan Status				x
Inverter Current				x
Inverter Discharge Step Down Status				x
Inverter Fin Step Down Status				x
Inverter Fin Temperature				x
Inverter Gas Outlet Cool Temperature				x
Inverter Liquid Cooling Status				x

Sample Outdoor Unit Points (Continued)

Outdoor Unit Type				
VRV Point	Emerion HR	VRV IV-X & Aurora HR	VRV IV HR	VRV T-Series HR
Inverter Overcurrent Step Down Status				x
Inverter Rotation Amount				x
Inverter Standby Status				x
Liquid Oil Return Status				x
Inverter Fan Current		x	x	
Low Pressure Retry Status	x	x	x	x
Low Pressure Step Down Status	x	x	x	x
Malfunction Cause	x	x	x	x
Main Liquid Status				x
Model Name	x			
Module Address	x	x	x	x
ODU Type	x			
Oil Return 1 Status	x	x	x	
Oil Return 2 Status	x	x	x	
Oil Return Status	x	x	x	x
On-Off	x	x	x	x
Operation Control Mode	x	x	x	x
Outdoor Serial Number	x	x	x	x
Outdoor Unit Cooling Capacity	x	x	x	
Outdoor Unit Heating Capacity	x	x	x	
Outdoor Unit Power Consumption	x	x	x	
Overheating Standby Status	x	x	x	
PHE Water Liquid Temperature				x
Pump Operation Status				x
Receiver Entrance Temperature	x			
Receiver Gas Purge Temperature	x	x		
Receiver Inlet Temperature		x		
Receiver SC Circuit Liquid Temperature				x
Refrigeration Discharging Status	x			
Restart Standby Status	x	x	x	x
Riptide Point Name			x	
SC and Purge Gas Outlet Temperature				x
SC PHE Liquid EVT Temperature				x
Solenoid Valve	x	x		

Sample Outdoor Unit Points (Continued)

VRV Point	Outdoor Unit Type			
	Emerion HR	VRV IV-X & Aurora HR	VRV IV HR	VRV T-Series HR
Startup Control Status	x	x	x	x
Stop Valve Liquid Temperature				x
Subcooling Heat Exchanger Gas Temperature	x	x	x	
Subcooling Heat Exchanger Liquid Temperature	x	x	x	
Subcooling Injection Temperature	x			
Suction Temperature	x	x		
System Current	x	x	x	x
System Horsepower	x	x	x	x
Target Condensing Pressure MPa	x	x	x	x
Target Condensing Pressure PSI	x	x	x	x
Target Condensing Temperature	x	x	x	x
Target Evaporation Pressure MPa	x	x	x	x
Target Evaporation Pressure PSI	x	x	x	x
Target Evaporation Temperature	x	x	x	x
Thermostat ON Capacity	x	x	x	x
Thermostat ON Status	x	x	x	x
Ventilation Status	x	x	x	
VRV Type	x	x	x	x
Water Flow Status				x
Water IN PHE Temperature				x

TURNTIDE TECHNOLOGIES

Our breakthrough technologies accelerate electrification and sustainable operations for energy-intensive industries

Turntide Technologies | 1295 Forgewood Avenue, Sunnyvale, CA 94089
turntide.com | automationsales@turntide.com