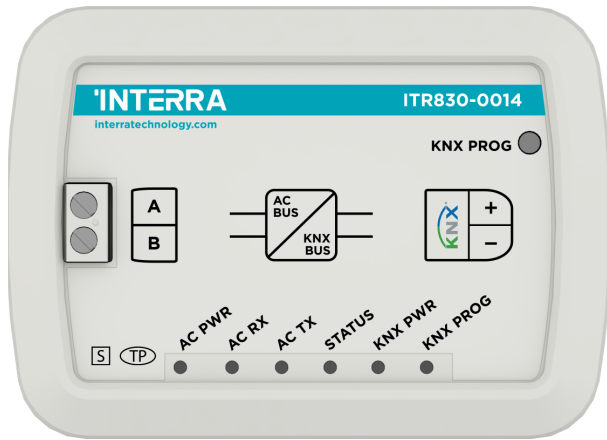


Toshiba VRF AC - KNX Gateway



Product Code	ITR830-0014
Power Supply	KNX Power Supply
Current Consumption	5 mA
Push Buttons	1 x KNX Programming Button
LED Indicators	1 x KNX Programming LED
Type of Protection	IP 20
Cable Distance	Max 150 m
Mode of Commissioning	S-Mode
Maximum Air Humidity	< 90 RH
Temperature Range	Operation (-10°C...70°C) Storage (-25°C...100°C)
Colour	Light Grey
Dimensions	88 x 62 x 27 mm (W x H x D)
Certification	KNX Certified
Configuration	Configuration with ETS

DESCRIPTION

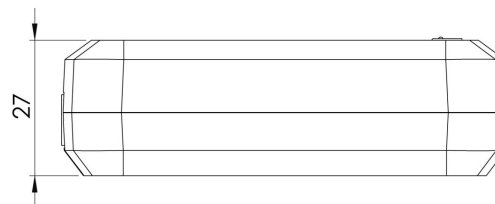
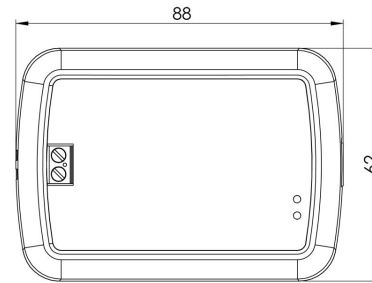
ITR830-0014 is an air conditioner gateway used for monitoring and controlling all the functioning parameters of Toshiba air conditioners via the KNX bus line. Toshiba VRF AC - KNX Gateway is compatible with models in VRF types categorized on the compatibility list published by Interra.

Toshiba VRF AC - KNX Gateway has an easy installation feature and can be installed inside the own AC indoor unit or a proper location away from the air conditioner, it connects one side directly to the electronic circuit of the AC indoor unit and in the other side directly to the KNX bus.

Note: Existing commands may vary according to indoor unit model. Please refer to relevant technical documents.

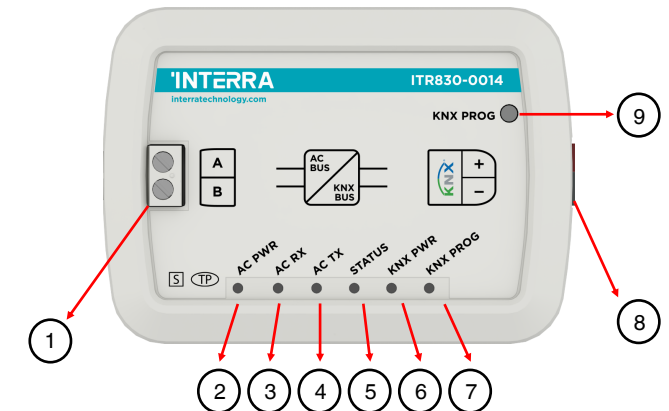
DIMENSIONS & CONNECTION DIAGRAM

- All values given in the device dimensions are millimetres.



FUNCTIONS

- ITR830-0014 device provides complete bi-directional integration of VRF type air conditioners with KNX bus.
- Includes 4 logical advanced parameters, each logical parameter have up to 4 inputs and can be configured as AND, OR & XOR.
- Includes 8 advanced converter parameters, each converter has four operations math calculations according to input type.
- Logic and converter parameters can be used for energy savings, configurable scenes, temperature limits etc.
- The Toshiba air conditioner unit provides error notifications for errors that may occur in exceptional cases.



- AC Indoor Unit Connection
- AC Power LED
- AC Receive Signal LED
- AC Transmit Signal LED
- Status LED
- KNX Power LED
- KNX Programming LED
- KNX Connector
- KNX Programming Button

Gateway - Single Indoor Unit:

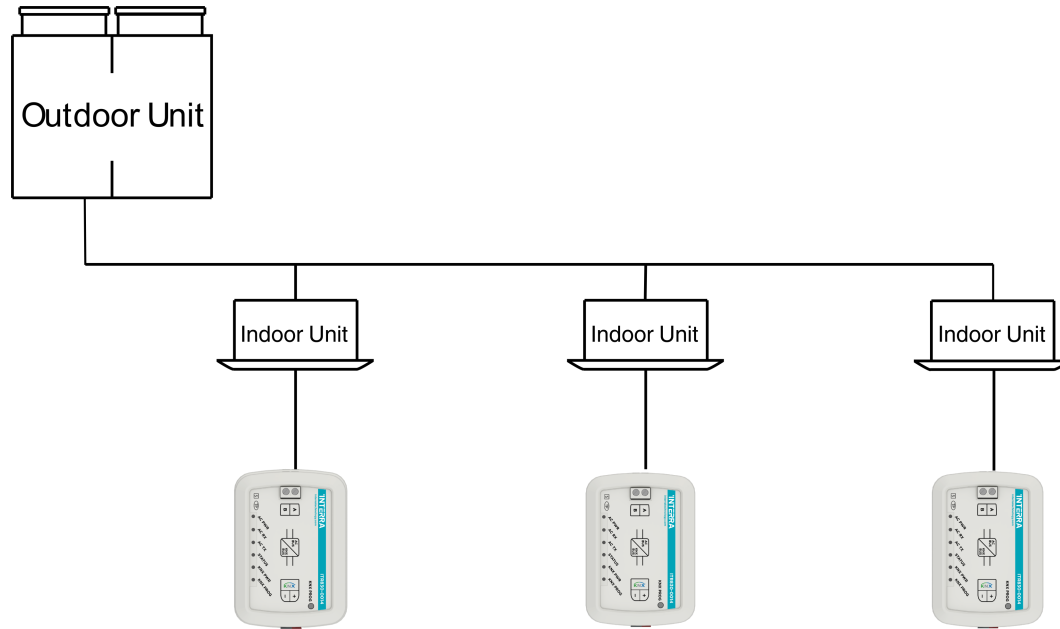


Figure 1

Toshiba VRF AC - KNX Gateway can be connected directly to the wired remote communication bus terminal of the AC indoor unit. Nothing that needs to do in ETS software. The following figure shows the Midea VRF AC - KNX Gateway connection without the remote controller. At this case the gateway's role must be master

Gateway - Single Indoor Unit + Remote Controller:

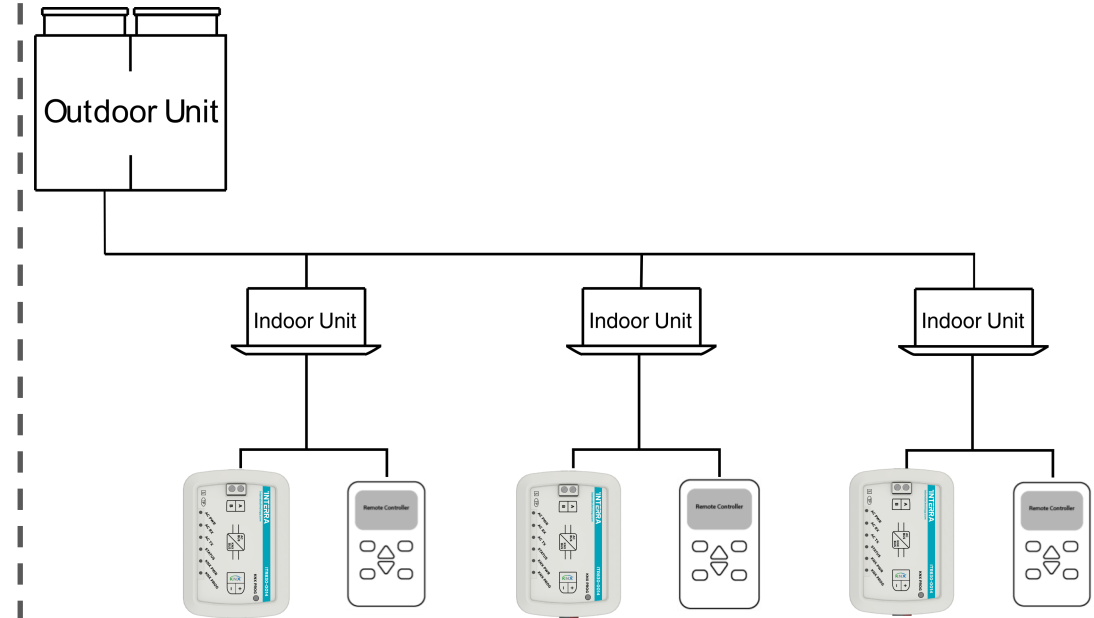


Figure 2

- The wired remote controller is optional in this configuration.
- Either one of wired controllers can be set as the master wired controller and the other as the slave wired controller
- If gateway is master, the wired remote must be slave.
- If the wired remote is master, gateway must be slave. At this case ambient temperature reference can not selected from "KNX Bus".

ERROR CODES

Error Code KNX Hex	Error In Remote Controller	Error Description
0	0	No Error
0x0C01	C01	Duplicated setting of control address
0x0C02	C02	Central control number of units mis-matched
0x0C03	C03	Incorrect wiring of central control
0x0C04	C04	Incorrect connection of central control
0x0C05	C05	System Controller fault, error in transmitting comms signal, i/door or o/door unit not working, wiring fault
0x0C06	C06	System Controller fault, error in receiving comms signal, i/door or o/door unit not working, wiring fault, CN1 not connected correctly
0x0C12	C12	Batch alarm by local controller
0x0C16	C16	Transmission error from adaptor to unit
0x0C17	C17	Reception error to adaptor from unit
0x0C18	C18	Duplicate central address in adaptor
0x0C19	C19	Duplicate adaptor address
0x0C20	C20	Mix of PAC & GHP type units on adaptor
0x0C21	C21	Memory fault in adaptor
0x0C22	C22	Incorrect address setting in adaptor
0x0C23	C23	Host terminal software failure
0x0C24	C24	Host terminal hardware failure
0x0C25	C25	Host terminal processing failure
0x0C26	C26	Host terminal communication failure
0x0C28	C28	Reception error of S-DDC from host terminal
0x0C29	C29	Initialization failure of S-DDC
0x0C31	C31	Configuration change detected by adaptor
0x0E01	E01	Remote control detecting error from indoor unit, Address not set/ Auto address failed. Check interconnecting wiring etc. Re-address system.

Error Code KNX Hex	Error In Remote Controller	Error Description
0x0E02	E02	Remote detecting error from indoor unit
0x0E03	E03	Indoor unit detecting error from remote
0x0E04	E04	Indoor seeing error from outdoor. Qty of i/d units connected are less than qty set. Check; all i/d units are ON, reset turn off all units wait 5min power up
0x0E05	E05	Indoor unit detecting error from outdoor unit, Error in sending comms signal
0x0E06	E06	Outdoor unit detecting error from indoor unit, Error in receiving comms signal
0x0E07	E07	Outdoor unit detecting error from indoor unit, Error in sending comms signal
0x0E08	E08	Incorrect setting indoor/controller, Indoor address duplicated
0x0E09	E09	Incorrect setting indoor/controller, Remote address duplicated or IR wireless controller not disabled
0x0E10	E10	Indoor unit detecting error from 'option' plug, Error in sending comms signal
0x0E11	E11	Indoor unit detecting error from 'option' plug, Error in receiving comms signal
0x0E12	E12	Auto addressing failed, Auto address connector CN100 shorted during auto addressing
0x0E13	E13	Indoor unit failed to send signal to remote controller
0x0E14	E14	Setting Failure, Duplication of master indoor units
0x0E15	E15	Auto addressing failed, Number of indoor units connected are less than number set
0x0E16	E16	Auto addressing failed, Number of indoor units connected are more than number set
0x0E17	E17	Group control wiring error, Main indoor unit not sending signal for sub indoor units

ERROR CODES



Error Code KNX Hex	Error In Remote Controller	Error Description
0x0E18	E18	Group control wiring error, Main indoor unit not receiving signal for sub indoor units
0x0E20	E20	Auto addressing failed, No indoor units connected
0x0E24	E24	Auto addressing failed, Error on sub outdoor unit
0x0E25	E25	Auto addressing failed, Error on outdoor unit address setting
0x0E26	E26	Auto addressing failed, Quantity of main and sub outdoor units do not correspond to the number set on main outdoor unit P.C.B.
0x0E29	E29	Auto addressing failed, Sub outdoor unit not receiving comms for main outdoor unit
0x0E31	E31	Between units, Comms failure with MDC, does E31 remain after power is re-instated? If so replace PCB. & power PCB
0x0F01	F01	Indoor Heat Exch inlet temp sensor failure (E1)
0x0F02	F02	Indoor Heat Exch freeze temp sensor failure (E2)
0x0F03	F03	Indoor Heat Exch outlet temp sensor failure (E3)
0x0F04	F04	Outdoor Discharge temp sensor failure (TD) or (DISCH1)
0x0F05	F05	Outdoor Discharge temp sensor failure (DISCH2)
0x0F06	F06	Outdoor Heat Exch temp sensor failure (C1) or (EXG1)
0x0F07	F07	Outdoor Heat Exch temp sensor failure (C2) or (EXL1)
0x0F08	F08	Outdoor Air temp sensor failure (TO)
0x0F10	F10	Indoor inlet temp sensor failure
0x0F11	F11	Indoor outlet temp sensor failure
0x0F12	F12	Outdoor Intake sensor failure (TS)
0x0F13	F13	GHP - Cooling water temperature sensor failure
0x0F16	F16	Outdoor High pressure sensor failure
0x0F17	F17	GHP - Cooling water temperature sensor fault

Error Code KNX Hex	Error In Remote Controller	Error Description
0x0F18	F18	GHP - Exhaust gas temperature sensor fault
0x0F20	F20	GHP Clutch coil temperature fault
0x0F23	F23	Outdoor Heat Exch temp sensor failure (EXG2)
0x0F24	F24	Outdoor Heat Exch temp sensor failure (EXL2)
0x0F29	F29	Indoor EEPROM error
0x0F30	F30	Clock Function (RTC) fault
0x0F31	F31	Outdoor EEPROM error
0x4801	H01	Compressor Fault, Over current (Comp1)
0x4802	H02	Compressor Fault, Locked rota current detected (Comp1)
0x4803	H03	Compressor Fault, No current detected (Comp1)
0x4805	H05	Compressor Fault, Discharge temp not detected (Comp1)
0x4806	H06	Compressor Fault, Low Pressure trip
0x4807	H07	Compressor Fault, Low oil level
0x4808	H08	Compressor Fault, Oil sensor Fault (Comp1)
0x4811	H11	Compressor Fault, Over current (Comp2)
0x4812	H12	Compressor Fault, Locked rota current detected (Comp2)
0x4813	H13	Compressor Fault, No current detected (Comp2)
0x4815	H15	Compressor Fault, Discharge temp not detected (Comp2)
0x4821	H21	Compressor Fault, Over current (Comp3)
0x4822	H22	Compressor Fault, Locked rota current detected (Comp3)
0x4823	H23	Compressor Fault, No current detected (Comp3)
0x4825	H25	Compressor Fault, Discharge temp not detected (Comp3)
0x4827	H27	Compressor Fault, Oil sensor fault (Comp2)
0x4828	H28	Compressor Fault. Oil sensor (connection failure)
0x4831	H31	Compressor Fault. IPM trip (IMP current on temperature)
0x4C01	L01	Setting Error, Indoor unit group setting error

ERROR CODES

Error Code KNX Hex	Error In Remote Controller	Error Description
0x4C02	L02	Setting Error, Indoor/outdoor unit type/model mismatched
0x4C03	L03	Duplication of main indoor unit address in group control
0x4C04	L04	Duplication of outdoor unit system address
0x4C05	L05	2 or more controllers have been set as 'priority' in one system - shown on controllers set as 'priority'
0x4C06	L06	2 or more controllers have been set as 'priority' in one system - shown on controllers not set as 'priority'
0x4C07	L07	Group wiring connected on and individual indoor unit
0x4C08	L08	Indoor unit address/group not set
0x4C09	L09	Indoor unit capacity code not set
0x4C10	L10	Outdoor unit capacity code not set
0x4C11	L11	Group control wiring incorrect
0x4C13	L13	Indoor unit type setting error, capacity
0x4C15	L15	Indoor unit paring fault
0x4C16	L16	Water heat exch unit setting failure
0x4C17	L17	Miss-match of outdoor unit with different refrigerant
0x4C18	L18	4-way valve failure
0x4C19	L19	Water heat exch unit duplicated address
0x4C20	L20	There is duplication in central control address setting
0x4C21	L21	Gas type setup failure
0x5001	P01	Indoor unit fault, Fan motor thermal overload
0x5002	P02	Indoor unit address/group not set
0x5003	P03	Indoor unit capacity code not set
0x5004	P04	Outdoor unit capacity code not set
0x5005	P05	Group control wiring incorrect
0x5009	P09	Outdoor unit fault, Compressor motor thermal overload, over or under voltage

Error Code KNX Hex	Error In Remote Controller	Error Description
0x5010	P10	Indoor unit fault, Condensate float switch opened
0x5011	P11	GHP - Water Heat exch low temp (frost protection) fault
0x5012	P12	Indoor unit fault, Fan DC motor fault
0x5014	P14	Input from leak detector (If fitted)
0x5015	P15	Refrigerant loss, high discharge temp and EEV wide open and low compressor current draw.
0x5016	P16	Outdoor unit fault, Open phase on compressor power supply
0x5017	P17	Outdoor unit fault, Compressor discharge temperature too high (Comp2) over 111 degC. Low on ref gas, exp valve, pipework damage.
0x5018	P18	Outdoor unit fault, By-pass valve failure
0x5019	P19	Outdoor unit fault, 4 way valve failure, i/door temp rises in cooling or fills in heating. Check wiring, coil, pcb output, valve operation.
0x5020	P20	Ref gas, high temp/pressure fault, heat exch temp high C2, 55-60 degC, cooling over-load, sensor fault
0x5022	P22	Outdoor unit fan motor fault, fan blade jammed, check connections, does fan turn freely, motor resistance 30-40ohm on each pair, no fan fault, yes pcb fault.
0x5026	P26	Outdoor unit fault, Compressor overcurrent - check winding re-sistance, Inverter failure - check internal resistance term HIC + & - to UVW 200-300Kohm or more
0x5029	P29	Outdoor unit fault, Inverter circuit fault - Motorcurrent Detection Circuit (MDC) fault, check comp windings, sensors C1 & TS, if ok possible pcb failure.
0x5030	P30	Indoor unit fault, System controller detected fault on sub indoor unit
0x5031	P31	Simultaneous operation multi control fault, Group controller fault
0x3F3F	???	Unknown error code
0x1000		AC Communication Error
0x1001		AC Error Transmit
0x1002		AC Error Receive
0x1005		AC Error No Ambient Temp Receiving from KNX Bus.