

## InsuLogix® T Modbus Data Map

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This is the full modbus data map for an InsuLogix® T. Therefore, all channel-specific registers are designed for the maximum number of channels. The options for analog output, relays and logging are also listed. If your device does not have a certain feature, access to the respective addresses will fail.

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## 1. Discrete Output Coils

Function	Address	R/W	Description
Enable Channel [1–8]	0x00 – 0x07	X / X	0: Channel off 1: Channel on
Relay Upper Limit [1–8]	0x08 – 0x0F	X / X	0: Deactivate Upper Limit 1: Activate Upper Limit
Relay Lower Limit [1–8]	0x10 – 0x17	X / X	0: Deactivate Lower Limit 1: Activate Lower Limit
Relay Inverted [1–8]	0x18 – 0x1F	X / X	0: Normal Relay Mode 1: Inverted Relay Mode
Relay 3 Channels [1–8]	0x20 – 0x27	X / X	0: Remove the channel from the logical disjunction 1: Add the channel to the logical disjunction
Relay 4 Channels [1–8]	0x28 – 0x2F	X / X	0: Remove the channel from the logical disjunction 1: Add the channel to the logical disjunction
Auto Integration	0x38	X / X	0: Constant Exposure Time 1: Auto tuning
Watchdog Relay Reset	0x39	– / X	1: Reset Watchdog Relay
RTC System Register Reset	0x3A	– / X	1: Reset RTC system registers
RTC All Register Reset	0x3B	– / X	1: Reset all RTC registers
SD Erase	0x3C	– / X	1: Erase SD data
Reboot	0x3D	– / X	1: Reboot

## 2. Discrete Input Coils

Function	Address	R/W	Description
New Value [1–8]	0x00 – 0x07	X / –	0: Temperature already read 1: New Temperature
Relay State [1–4]	0x08 – 0x0B	X / –	0: Relay open 1: Relay closed
Channel Disturbed [1–8]	0x10 – 0x17	X / –	0: Channel OK 1: Channel with Error
Analog Type	0x18	X / –	0: Voltage 1: Current

## 3. Analog Input Registers

Function	Address	R/W	Description
Last Edge [1–8]	0x00 – 0x07	X / –	
Temperature [1–8]	0x08 – 0x0F	X / –	Channel temperature (tenths °C)
Average Temperature [1–8]	0x10 – 0x17	X / –	Average channel temperature (tenths °C)
Error [1–8]	0x18 – 0x1F	X / –	0: Channel OK, 1: No Sensor, 2: No Signal, 3: Signal too low, 4: Signal too high, 5: Channel off

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Function	Address	R/W	Description
Extended Channel 1	0x20 – 0x27	X / –	R1: New Temperature Flag, R2: Average Temperature, R3: Year, R4: Month, R5: Day, R6: Hour, R7: Minute, R8: Second
	...		
Extended Channel 8	0x58 – 0x5F	X / –	
Channel Count	0x60	X / –	
Actual Channel	0x61	X / –	
Device Temperature	0x62	X / –	Temperature from the RTC
SD Usage and Size	0x63 – 0x66	X / –	Register 1: Usage HByte, Register 2: Usage LByte Register 3: Size HByte, Register 2: Size LByte must read as block

## 4. Analog Output Holding Registers

Function	Address	R/W	Description
Temperature Offset [1–8]	0x00 – 0x07	X / X	Write value is a delta to the existing one (tenths °C)
Temperature Averaging [1–8]	0x08 – 0x0F	X / X	Amount of values for the Average Temperature
Analog Low Temp. [1–8]	0x10 – 0x17	X / X	(°C)
Analog High Temp. [1–8]	0x18 – 0x1F	X / X	(°C)
Relay Low Temp. [1–8]	0x20 – 0x27	X / X	(tenths °C)
Relay High Temp [1–8]	0x28 – 0x2F	X / X	(tenths °C)
Integration Time [1–8]	0x30 – 0x37	X / X	When Auto Integration is active, without effect
Spectrum Average Count	0x138	X / X	Amount of accumulate Spectra
Spectrum Smoothing Factor	0x139	X / X	Matrix size of the smoothing algorithm
Next Lamp Delay	0x13A	X / X	Preheating time before a measure starts
Real Time Clock	0x13B – 0x142	X / X	Register 1: Year, Register 2: Month, Register 3: Weekday, Register 4: Day, Register 5: Hour, Register 6: Minute, Register 7: Second, Register 8 Set  Reading: first seven registers as block. Writing: write a specific time and set 8 <sup>th</sup> register not null
Log Mode	0x143	X / X	0: Logging deactivated 1: Logging activated (each new Temp. will be logged)
Log Interval	0x144	X / X	Activate Logging with an interval

## 5. Broadcast Registers

Function	Address	R/W	Description
Master Address	0x01	– / X	Set the modbus address of the master board
Slave Address	0x03	– / X	Set the modbus address of the slave board and the intercommunication address on the master board
Intercommunication	0x05	– / X	0: Intercommunication off 1: Intercommunication on

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## 6. Function code FC43 – read device identification

Object Id	Object Name	Category
0x00	Vendor Name	Basic
0x01	Product Code	Basic
0x02	Major Minor Revision	Basic
0x03	Vendor Url	Regular
0x04	Product Name	Regular
0x05	Model Name	Regular
0x80	Major Minor Lib Revision	Extended
0x81	Hardware Configuration	Extended