# HOW-TO GUIDE

# HOW TO CONNECT RESI MODBUS-MBUS MODULE TO ASPECT

This document describes how to connect the **RESI Modbus to Mbus gateway Module** to an **Aspect-MatrixMax** controller.

#### System Browser Home / C / Modbus / RS485 Display Class Normal . RESI\_Mbus RESI\_Mbus Online 2 Name Value Display Eneray 18953.2Wh 1 \_\_\_\_\_\_ FlowTemp 15.2°C 1 \_\_\_\_\_ ReturnTemp 35.3°C 1 DeltaTemp 20.2°C • Volume . 8 10.2m3 1 Power .8 0.0W 1

In order to connect to the **RESI** module you will need the following:

- 1. RESI Module
- 2. RS232 or USB-to-RS485 converter
- 3. **RESI MODBUS Configurator** (the version used when creating this document was 1.0.5.30) This software can be downloaded from <u>www.resi.cc</u> (you need to be registered to access full download page)
- 4. **RESI-USB-SIO**, **RESI-USB-BOX-DRIVER** This software can be downloaded from <u>www.resi.cc</u> (you need to be registered to access full download page).

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### WIRING THE RESI MODULE

Wire the **RESI** module according to documentation available on Internet or in the datasheet sent with device.

				Modbus RS	6485 RTU	DIP Swit	ch Setup	
	*			7/		BR – Bau DIP 1 OFF	ud rate DIP2 OFF	Baudrate 9600 bps
				Power Supp	bly 24V DC	ON OFF ON	OFF ON ON	19200 bps 38400 bps 57600 bps
acter.	RX TX	M- [] ®	1.50	Baudrate	e Setup			
	feel the spirit of a ne	ew generation				Note	: Pari	ity is selected with
No.	MBUS	CE Jer		Interface	e Setup		Cor soft	nfigurator ware only
States	011 0	-FO		Function [	Definition			
1	STATE MBUS	HOST		MBus In	terface	IF – Inte OFF ON	rface RS232 RS485	
	30	0				FD – Fur	nction Def	inition
1						OFF	The unit memory Configu	t ID(address) from FLASH y used(configurable in Mdbus rator Software)
		189				ON	The unit	t ID (address) 255 is set

Mbus interface connections do not require polarity matching.

#### CONNECTING MBUS METERS

Connect all your **Mbus** meters in daisy chain. Use the same  $M^+$  and  $M^-$  ports on all **Mbus** devices.



### DISCOVERING THE RESI MODULE IN THE MODBUS CONFIGURATOR

1. Run the **RESI MODBUS Configurator** application, and configure your com port connection

ject manager	Project settings				
2 🖬 🖫 🗳 🛎 🐂 🎕 🗞 🌒 🖻	Project name: New Project				
	Scan serial ports for devices				
	Choose ports: COM1 COM2 Adva Choose Choose	nced options re baudrates:	- Choose parks		Abi
	COM3 9 COM4 9 COM5 3 COM5 5 COM6 COM7 4 COM7	300	© NONE C EVEN C ODD	Start unit: 255	
	COM9 COM10 COM11	can for SLIM IOs (17.5mm)	Fast Scan (Only 255)		HELP
	COM12 COM13	Scan for BIG IOs (143mm)	Full Scan (Range 1-255)	Scan senal ports for devices	Refresh serial po
	COM16     In the     COM17     Vinta     COM17     Vinta     COM17     Vinta     COM18     Port     COM2     COM20     COM21     COM22     Qate     COM22     Qate     COM25     COM3     COM3     COM35     COM35     COM35     COM35     COM35	dialog page, you can earch for to can. The system this di avalable com o toran. The system the Jatom 'Ta audion software. The buttom 'Ta the buttom 'Ta is the reach range to all avalable to the second range to all avalable range on the connected ensel lines. The second range of the second range page on the connected ensel lines are buttom in the section. This are which are available for the after to scan for new module. Be the bud state if your setail of the bud state if your setail of the second	connected RESI converters or UD becomparts in the list on the left ports. Une this function, if you has been appressive the search of M becompared to the search of M endoes the search of M endoes the search of the search of the search of the search of the SE search of the SE search and the SE search of the SE search handle if the search of the SE search handle if	modules. Therefore you can select the entitic CDM point, and entimed "Choose point". The buttom "Fleethen stead en connected you USB senial darget rates you tated too DBUB selevates to be used matted." So for the selection too the selection of the selection of the selection to 250. This is all coarse mach devices but you will find all assach nationale assaches for converties with no park). If you the coarder park too fails all contrasts in the dard assach nationale assaches for converties view in or park). If you "Scan for SUMI 03 (17.2 min;") the system selects on the totatom's SUMI 03 (17.2 min;") the system selects on the totatom's coarder selection of the system selects on the totatom's coard Bio (18.1 dard), "Will all selection to the packets with 2040/Daad and 256000baud.	t, f , f og ou the

2. Name your new project and click Scan serial ports for Devices .

roject manager	Project settings					
≥ 8 9   <i>2 ≤</i>  ≈ ≈   6   <i>2</i> €	Project name:	Kamstrup MULTICAL 601				
Kanstup MULTICAL 601     Kesi-MBUST-MODBUS - IRESI-MBUST-MODBUS1						
	Scan serial por	ts for devices				
	Choose ports:	Advanced options				
	COM1 COM2	Choose baudrates:	Choose parity	MODBUS unit ID range	About	
	COM3 COM4	✓ 9600 ✓ 115200 ✓ 19200 ✓ 230400	NONE	1		
	COM5 COM6	✓ 38400 ¥ 256000 ✓ 57600	C EVEN	Start unit		
	COM7	₩ 4800	C 000			
	COM9 COM10	Scan for SLIM IOs (17.5mm)	Fast Scan (Only 255)	1	HELP	
	COM11			Scan serial ports for devices		
	COM13	Scan for bid tos (r43mm)	Pui Scan (nange 1-255)		- Hellesh senal ports	
	COM21 COM22 COM23 COM24 COM24 COM26 COM26 COM26 COM26 COM28 COM28 COM28 COM28 COM28 COM30 COM30 COM30 COM30 COM36 COM36 COM36 COM36 COM36 COM36	you never thinking did the MUDList of gateways on the conventional ends in "Dhoor backstern". This will great the "Dhoor backstern". This will great the have convente ions in the section." The back date to count for mer module. Under the back date if you avoid here the back date if you avoid the back date to count for mer module.	the exercise to row of this (plotted) is the Type of the operation of the plotted plotted plotted is plot exercise to plotted plotted plotted plotted is plotted plotted plotted plotted plotted plotted is minimum of the plotted plo	In mitigation is some inserial (BMR). THE BURDIN Hill Solling in converter, topic of indiability of the BURDIN Hill Solution in a source in the source of the source intervention with risk participation in the construct part to provide the source intervention in the mitigation of the source intervention of the source intervention in "Source to SLMI Dia (17.5mm)" the system selects on the His burbanic "Source 100 (17.15mm)" the system selects on the text burbanic "Source 100 (17.15mm)" the system selects on the text burbanic "Source 100 (17.15mm)" the system selects on the His speed.	log ga dha cea	

3. Select the discovered **RESI** module and click Search M-Bus slaves (press the ESC button to stop scanning)

manager	Local COM p	ort settings											
	Modbus unit: 2	55 .	Device:	COM8					IP-Ad	dress:			
	Baudrate: S	600	<ul> <li>Parity:</li> </ul>	NONE					Port				
RESI-MBUST-MODBUS - [RESI-MBUST-MODBUS]	Device spec	Desting a nocilite											
-E Meter 1		Exercised parameters											
	Downsoad cons	Enviropad could Test counsection E.E. 18st											
	HESI-MBUST-MU	DBUS			MBUS	6 MUDBUS/HTU	converte	if for 2 meters (20 variable	es)				
	Software version:	4.1.5											
	State:		no	error									
	Q Search M-Bus	G Saweb Miller share: @ Saweb Miller shares via result Sawe FSV file											
		larr la		-	10200				65535		urun I		
	Modbus address:	255	Modbus	baudrate:	19200 -	M-Bus Start		M-Bus query timeout:	60000		HELP		
	M-Bus baudrate:	300 -	Modbus	parky:	NONE	M-Bus End	251						
	Test bench												
	Modbus register	Datatype		Content		Data source				Current value			
	4x00001	32 bit signed binary	¥/	Fabrication n	umber - ( 0 )	Meter 1 - ( Pzr	n:1)						
	4x00003	32 bit IEEE floating	a point	Energy [Wh]	-{1}	Meter 1 - ( Prin	n:1}						
	4x00005	32 bit IEEE floating	g point	Volume [mł]	(2)	Meter 1 - ( Prin	n:1)						
	4x00007	32 bit signed binary	y	On time [hou	r(s)] - ( 3 )	Meter 1 - { Prin	n:1}						
	4x00009	32 bit IEEE floating	a point	Flow tempera	sture [*C] - { 4 }	Meter 1 - { Prin	n.:1}						
	4x00011	32 bit IEEE floating	a point	Return tempe	erature ["C] - { 5 }	Meter 1 - ( Prin	n:1}						
	4x00013	32 bit IEEE floating	point	Temperature	difference [K] - ( 6 )	Meter 1 - ( Prin	n:1}						
	4x00015	32 bit IEEE floating	point	Power [w] -	(7)	Meter 1 - ( Prin	n:1}						
	4x00017	32 bit IEEE floating	a point	max. Power [	W1-{8}	Meter 1 - { Prin	n:1}						
	4x00019	32 bit IEEE floating	point	Volume flow	Ink/h1-(9)	Meter 1 - { Prin	n:1)						
	4x00021	32 bit IEEE floating	a point	max Volume	flow Imk/hl · (10)	Meter 1 - ( Prin	n:1)						
	4x00023	32 bit IEEE floating	noint	Energy (White	Rarif: 1) - (11)	Meter 1 - ( Prin	n:1)						
	4x00025	32 bit IEEE floating	1 point	Energy M/hl	Rariff 21-(12)	Meter 1 - ( Prin	n 1)						
	4+00027	32 bit IEEE floating	noint	Volume Imkl	(sub unit 1) - (13)	Meter 1 - ( Prin	n-13						
	4,00029	22 hit IEEE floating	a point	Vokana [mk]	(mab umit 2), [14]	Mater 1 - ( Prin	n 13						
	4,00031	32 bit IEEE Boating	a point	Energy Bu/hl	(sub unit 3) (15)	Meter 1 . ( Prin	n·13						
	4,00022	32 bit date 1 time	4 poers	Timenoint Ide	ate 2 timel (16)	Motor 1 - ( Prin	n-13						
	4,00035	32 bit Gate & unie	a maint	France Bullet	(datase at 1) (17)	Meter 1 - ( Prin	1.17						
	4.00033	22 ballEEE Rooting	point	Makana Jaki	(double m. 1) (10)	Mater 1 (Dis							
	4800037	32 DR IEEE Hoating	1 point	Aonue (un)	(storage nr.: 1) - (10)	Meter 1 - (Pie	n: 17						
	4800035	32 DR IEEE Roading	2 point	max Power [	wj (storage nr.: 1) - ( 1:	1) Meter I - ( Pin	n: 17						
	4800041	32 bit IEEE floating	3 point	max. volume	now (mr/m) (storage m.	1) - Meter I - ( Phr	n: 17						
	4x00043	32 DK IEEE floating	point	Energy [Wh]	(storage nr.: 1 tantt: 1) -	(21 meter 1 - ( Phr	n:::)						
	4x00045	32 bit IEEE floating	a point	Energy [Wh]	[storage nr.: 1 tarif: 2] -	1 22 Meter 1 - ( Prin	n:1}						

4. Select your discovered meter to see the available registers

oject manager	Common M-Bus slave se	ettings								
	Change primary address Read met	er data								
Kamitup MULTICAL 601     B + E RESI-MBUST-MODBUS - [RESI-MBUST-MODBUS]     Heimit     Memit	Slave name:	Meter 1		urin 1						
	Addressing mode Primary address Secondary address	Primary meter address: Secondary meter address (hex)	1 · · · · · · · · · · · · · · · · · · ·							
	Datapoints									
	🕒 Add datapoint 🔄 Delete datapoint 🗽 Add from database 🙀 Add fo database									
	Index Caption	Exponent	Datatype							
	0 Fabrication number 1 Energy [Wh]	0	32 bit signed binary 32 bit IEEE floating point 32 bit IEEE floating point							
	3 On time [hour(s)] 4 Flow temperature [*C]	0	32 bit tigned binary 32 bit EEE floating point							
	5 Return temperature ["C] 6 Temperature difference [	0 K] 0	32 bit IEEE floating point 32 bit IEEE floating point							
	7 Power [W] 8 max. Power [W]	0	32 bit IEEE floating point 32 bit IEEE floating point 22 bit IEEE floating point							
	10 max. Volume flow [mi/h] 11 Energy [Wh] (tariff 1)	0	32 bit IEEE floating point 32 bit IEEE floating point 32 bit IEEE floating point							
	12 Energy [Wh] (tarif: 2) 13 Volume [mł] (sub unit 1)	0	32 bit IEEE floating point 32 bit IEEE floating point							
	14 Volume [mł] (sub unit 2) 15 Energy [Wh] (sub unit 3 15 Timeraint (data 1 time)	0	32 bit IEEE floating point 32 bit IEEE floating point 22 bit deter 1 time							
	17 Energy [Wh] (storage nr. 18 Volume [mł] (storage nr.	:1) 0 1) 0	32 bit lEEE floating point 32 bit lEEE floating point							
	19 max. Power [W] (storage 20 max. Volume flow [mi/h]	e nr.: 1) 0 (storage nr.: 1) 0	32 bit IEEE floating point 32 bit IEEE floating point							
	21 Energy [Wh] (storage nr. 22 Energy [Wh] (storage nr. 23 Victorage nr.	1 tariff: 1) 0 1 tariff: 2) 0	32 bit IEEE Roating point 32 bit IEEE Roating point 32 bit IEEE Roating point							
	24 Volume [mł] (storage nr. 25 Energy [Wh] (storage nr.	1 sub unit 2) 0 1 sub unit 3) 0	32 bit IEEE floating point 32 bit IEEE floating point							
	26 Timepoint [date] (storage	om: 1) 0	32 bit date & time							

- 5. Depending on the type of **RESI** module, it might be necessary to delete data points from the database (this device can have 2 **Mbus** devices with up to 20 data points )
- 6. Click on the **RESI** module in left pane, set the **Modbus** port settings and set the **Mbus** communication speed, start address and end address.

Click Download Config – after the configuration is loaded successfully, the Modbus unit address in Local COM port Settings will automatically chang to 255. If you try to test the connection you will get an error. Make sure that you change your local Modbus port's COM Port settings to the correct one on the device now.

Error					×
Could i	not connect to RESI-MB	UST-N	10DBUS - [R	ESI-MBUST-M	ODBUS]!
-					
					ОК
Local CON	A port settings				
Modbus unit:	1	-	Device:	COM10	-
Developher	9600		Desitur	NONE	-

8. Click on **Test** to scan for **Mbus** meter values

RESI's MODBUS Configurator V1.0.5.30 - [Unnamed]						– D ×						
Project manager	Local COM po	ort settings				Minimize						
	Modbus unit: 📘	<ul> <li>Device</li> </ul>	COM10 -		IP-Address:							
	audate: 96	00 V Parity	NONE		Port							
Kanstrup MULTICAL 601     FORCE MODIFICE MODIFICE MODIFICE						1						
HESI-MBUSI-MUDBUS - [RESI-MBUSI-MUDBUS]	Device specific											
	S Download config Test connection 🛐 Test											
	RESIMBUST MODBUS MBUS to MODBUS/RTU converter for 2 meters (20 variables)											
	HESI-MBUST-MUD	805	HUUST	PHODEOSTITIC Contreller for 2 medels (20	(disburs)							
9	Software version:	4.1.5										
9	State:	n	toma c									
	🔍 Search M-Bus sl	laves 🔍 Sgarch M-Bus slave	s via serial Sgive CSV file									
	Modeus address:	1 w Modum	haudtate: 9000	d.R.u. Start 1 M.R.u. queen lier	exet (55535 UELD							
	moutos adaress.		0000 -	Hous day in	HELP							
	M-Bus baudrate:	300 V Modbus	party: NONE 💌	f-Bus End 2								
	Test bench											
	Manuschung		Maul									
	New value.		witter									
5	Modbus register	Datatype	Content	Data source	Cuttent value	^						
	1x00001	32 bit IEEE floating point			19000.00							
4	\$x00003	32 bit IEEE floating point	Volume [mk] - { 2 }	Meter 1 - { Prim.: 1 }	10.19							
4	1x00005	32 bit signed binary	On time [hour(s)] - ( 3 )	Meter 1 - { Prim.: 1 }	775							
4	\$x00007	32 bit IEEE floating point	Flow temperature ["C] - { 4 }	Meter 1 - { Prim.: 1 }	21.47							
4	\$x00009	32 bit IEEE floating point	Return temperature [*C] - { 5 }	Meter 1 - { Prim.: 1 }	23.67							
4	4x00011	32 bit IEEE floating point	Temperature difference [K] - { 6 }	Meter 1 - { Prim.: 1 }	2.20							
4	\$x00013	32 bit IEEE floating point	Power [W] - { 7 }	Meter 1 - { Prim.: 1 }	0.00							
4	4x00015	32 bit IEEE floating point	max. Power [W] - { 8 }	Meter 1 - { Prim.: 1 }	3714400.00							
4	1x00017	32 bit IEEE floating point	Volume flow [mit/h] - { 9 }	Meter 1 - { Prim.: 1 }	0.00							
4	4x00019	32 bit IEEE floating point	max. Volume flow [mł/h] - ( 10 )	Meter 1 - { Prim.: 1 }	320240.00							
4	\$x00021	32 bit IEEE floating point	Energy [Wh] (tariff: 1) - { 11 }	Meter 1 - { Prim.: 1 }	0.00							
4	4x00023	32 bit IEEE floating point	Energy [Wh] (tariff: 2) - { 12 }	Meter 1 - { Prim.: 1 }	0.00							
4	\$x00025	32 bit IEEE floating point	Volume [mł] (sub unit: 1) - { 13 }	Meter 1 - { Prim.: 1 }	0.00							
4	4x00027	32 bit IEEE floating point	Volume [mł] (sub unit: 2) - ( 14 )	Meter 1 - { Prim.: 1 }	0.00							
4	4x00029	32 bit IEEE floating point	Energy [Wh] (sub unit: 3) - ( 15 )	Meter 1 - { Prim.: 1 }	4200.00							
4	4x00031	32 bit date & time	Timepoint [date & time] - ( 16 )	Meter 1 - { Prim.: 1 }	0x1382061e => "02.12.09.06:30"							
4	4x00033	32 bit IEEE floating point	Energy [Wh] (storage nr.: 1) - (17)	Meter 1 - { Prim.: 1 }	0.00							
4	4x00035	32 bit IEEE floating point	Volume [mł] (storage nr.: 1) - { 18 }	Meter 1 - { Prim.: 1 }	0.00							
4	4x00037	32 bit IEEE floating point	max. Power [W] (storage nr.: 1) - (19)	Meter 1 - { Prim.: 1 }	0.00							
4	4x00039	32 bit IEEE floating point	max. Volume flow [mk/h] (storage nr.: 1	- Meter 1 - { Prim.: 1 }	0.00							
4	4x02001	16 bit signed binary	State of meter	Meter 1 - (Prim.: 1)	3 => "Values are valid!"							
14	NU2002	32 bit signed binary	Identification number of meter	Meter 1 - { Ptim.: 1 }	6602526	÷						

If you can see values then your **RESI** module has been set up correctly with the **Mbus** meter. Use **Modbus Port settings** and register numbers to read them in Cylon controllers.

## ADDING MBUS READINGS IN ASPECT

In order to read the **Mbus** meter readings in **Aspect**, you must configure the **Modbus** port on your **Aspect** device according to **RESI** module setup.



#### MODBUS CABLING WITH MATRIXMAX

The image below shows a wiring diagram for properly connecting a **RESI** module to a **MatrixMax** controller on Port 2.

- Connect A+ from **RESI** module to N+ of the **MatrixMax**.
- Connect B- from the **RESI** module to N- on the **MatrixMax**

