

Access interfaces transparently

Our data concentrators and gateways collect meter data via standard commands. Depending on the device, M-Bus, wM-Bus, RS-232 and/or RS-485 interfaces are available.

Usually, the required data can be read out directly from the meters.

However, in particular applications this is not enough. This may be due to the user of other protocols (e.g. DLMS, Modbus RTU) or special, manufacturer or type-specific commands to meters (e.g. selection of modes, selection of parameter set). How to proceed in those cases?

For such applications we provide a Transparent Mode for all meter interfaces on the device.

What does the Transparent Mode do?

Essentially, the Transparent Mode is a forwarding of a TCP or UDP port to one of the meter interfaces. This means that all data transmitted to the device via TCP/UDP is sent directly to the meter interface. Equally, the data received at the meter interface is forwarded directly to TCP/UDP. This mode is called transparent because the data remains totally unchanged. The data stream is directly passed through without any changes.

This means that our devices are functionally converted to:

- An Ethernet level converter for the M-Bus
- A distributed wM-Bus receiver
- An RS-485 router for Modbus RTU with mobile communication

The variety of applications is huge and depending on the respective requirements. For example, the primary address or baud rate of the meter can be set remotely from the PC.

Two things are required to use the Transparent Mode: the parameterization of the device and the connection of the TCP/UDP port to your software application.

How do I activate the Transparent Mode on our devices?

The parameterization of the device is done intuitively via the web-based configuration interface. In the tab Configuration the mode can be set to "Transparent" for each interface.



M-Bus mode:	Transparent / TCP	-
Primary start address:	Disabled Secondary scan	
Primary final address:	Secondary scan reverse	
Secondary address mask:	Primary scan Transparent / TCP	
M-Bus baud rate:	Transparent / UDP	
M-Bus timeout (ms):	500	.F\$
M-Bus idle timeout (ms):	100	4
M-Bus full timeout (ms):	10 000	14
M-Bus request mode:	Standard	Ŧ
M-Bus reset mode:	Standard	7
M-Bus max. multipage:	3	4
M-Bus transparent port:	5 000	1

The user has the choice between a TCP connection or a UDP connection with its respective advantages and disadvantages.

Another mandatory parameter is the port to be used to provide the connectivity. This can be chosen freely, but standard ports such as HTTP (80), FTP (21), SSH (22), HTTPS (443) or Modbus (502) must be considered. These should not be used.

Depending on the interface, additional parameters such as baud rate, UART bit timing, etc. can be configured. The parameters are clearly named. Our devices are now ready for transparent use.

How to connect your application to the TCP/UDP port?

The most straightforward way is using an application software which offers a direct connection to a TCP/UDP port. Some meter reading tools or manufacturer tools are doing this. In this case you only have to enter the IP of our device and the used port: **192.168.1.101:5000**.

The UART parameters, especially the bit timing, are not relevant to be set in the application because they are generated by the device. The only thing that is important for some tools is that the socket connection runs in raw data mode and does not use Telnet data encoding.

What could a practical example look like?

For the parameterization of M-Bus meters via M-Bus we like to use the Tool M-Tool from the company NZR.



-Tool	3.6						
Info	M-Bus Erw	eitert Drud	en				
ł		R			М	-70	ool
	where the	autecha 78	hlerrevision				
ing He 49		hemeyer G 13 aer	mbH & Co.	KG			-
Ing He 49 W	g. Aug. Kr ideweg 3 196 Bad L	hemeyer G 13 aer	mbH & Co.	KG	SensoStar 2	Q3x	SensoStar 2C
Ing He 49 W	g. Aug. Kr ideweg 3 196 Bad L ww.nzr.di	hemeyer G 13 aer		WBZ	SensoStar 2	Q3x	

Here you can directly enter the IP and the port of our device. If you are searching a meter in this way, the PC will do this logically; our device takes care of the physics like a level converter.

rimă	radresse:		2	Vers	ion:		136	E		
10 (300, Mar.).		02013362	Zugniff:		149		1			
		6-1	Narmwasser (30	- 108	Status:		.0			
	eller:		ZRI		atur:		0			
ħłr.	Beschreibu	ng	Wert	Enheit	Wertart	Tarif	Speicher	Kanal	Variablentyp	Rohdaten
1	Fabrikation	ser.	33013362		Momentan	0	0	0	BCD 8	0C7862 33 01 33
2	Volumen		13167640	1 Liter	Momentan	0	0	0	32.Bit	041318 EC C8 00
3	Datum		01.01.20 00:00	Datum	Momentan	0	8	0	16 Bit	82.046C81.21
4	Datum		01.01.19 00:00	Datum	Momentan	0	9	0	16 Bit	C2 84 006C61 21
5	Volumen		13132954	1 Liter	Momentan	0	8	0	32.81	84 04139A 64 C8 00
6	Volumen		10519382	1 Liter	Momentan	0	9	0	32 Bit	C4 84 001355 83 A0 00
7	Datum		01.03.20 00:00	Datum	Momentan	0	20	0	16 Bit	82 8A 006C81 23
8	Volumen		13167486	1 Liter	Momentan	0	20	0	32 Bit	84 8A 00137E EB C8 00
9	Herstellers	pez.			Momentan	0	0	0		1F
			Pi	rametriere	Uhrzeit	ĺ	k	nderung	en schreiben	

The tool enables various pre-configured or manufacturer-specific commands to be sent to the meter. It is therefore well suited for changing primary addresses, setting times or sending specific commands to meters, as the tool also helps to create the checksum.



a service al	(i		100				
Datenbytes:	1		V				
Sende	Berechnung der Checksumme + Endbyte Enzelzeichen		Â				
M-Bus Pr	Startbyte: 0x10 Startbyte: 0x68 Endbyte: 0x16						
197621-000	Positive Antwort: 0xE5 Primäre Adresse **********************************						
2 Unbeka Sende REQ_UD2 mit FCB 1 Unbeka Sende REQ_UD2 mit FCB							
	Sende REQ_UD1 Sende Application Reset Selektere sekundäre Adresse						
¢	Parametrise's Printardokesse Parametrise's Sekundäradokesse Parametrise's Baudrate auf 300 Baud. Parametrise's Baudrate auf 9600 Baud. Less Hersteller ID umschaltbefehl des EasyMeter Umschaltbefehle ===== Umschaltbefehl des EasyMeter type auf Q30 Umschaltbefehl des EasyMeter type auf Q30 Umschaltbefehl des EasyMeter type auf Q31 w======== # Ausz Zeitangabe ========						

If your application software cannot establish a direct TCP/UDP connection, but works via serial interfaces (e.g. COM1), you need a driver for a "Virtual COM port". This works basically like our configured device, only the other way round. This driver creates a COM port and then forwards the data from the COM port to a TCP/UDP port.

A commercial provider for such a COM port driver is Eltima, but there is also shareware and freeware available.