

Operating Manual UR420IP / UR840IP


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from Firmware: 02-00

- Modbus TCP communication protocol

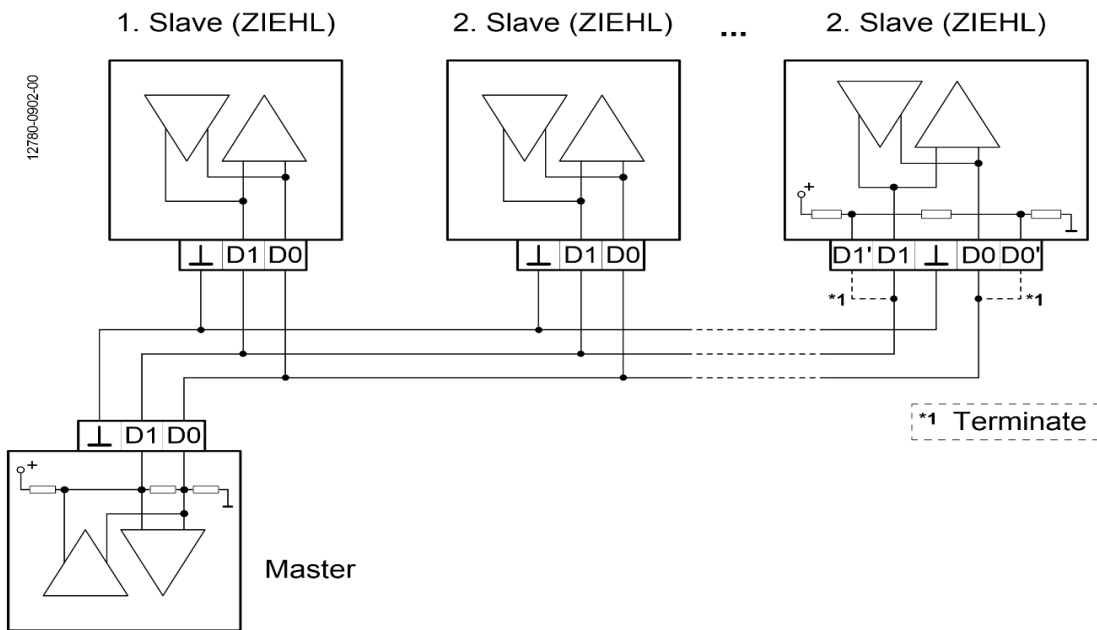
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1 Important Information

 Please also read the general operating manual of the UR840IP / UR420IP carefully and observe the safety instructions.

2 Connection diagram RS485-BUS



3 Interface Parameters

TCP Port: 502
 Max. TCP connections: 3

The Modbus TCP protocol must be activated via the integrated web server of the device:

- Enter the IP address of the device in the web browser (on a computer in the same network)
- Select the menu tab „network“
- Activate Modbus TCP



4 RS485-BUS interface parameter

BUS-Address	Baud rate	Data bits	Parity	Stop bit
1 ... 247	4800, 9600, 19200, 57600	8	even, odd, none	1, 2

The interface parameters are factory set to address 1, 9600 baud, 8 bits, even parity, 1 stop bit.

The UR840IP / UR420IP acts in BUS as a slave.

The RTU mode is used.

The parameters can be set directly on the internal website or on the device (see operating manual UR840IP or UR420IP).

5 Telegram Structure

According to Modbus specification.

For details, refer to the Modbus original documentation, available at: <http://www.modbus.org>

5.1 MODBUS Application Protocol header (MBAP)

Byte no.		Value (hex)	Designation	Description
0	Hi	00	Transaction Identifier	Identification number of a request (at multiple requests at the same time)
1	Lo	00		
2	Hi	00	Protocol Identifier	Always 0 (Modbus protocol)
3	Lo	00		
4	Hi	00	Length	Number of following bytes (High Byte is always 0)
5	Lo	06		
6		FF	Unit Identifier	Identification of a remote device (value meaningless)

5.1.1 Modbus function code 0x03 (Read Holding Registers)

7		03	Function code	Modbus functions code (0x03, Read Holding Registers)
8	Hi	00	Start address	Address of the first (read) register
9	Lo	00		
10	Hi	00	Number of registers	High Byte always 0, Low Byte at Modbus: 1...125
11	Lo	06		

6 Supported Function Codes

Function code	Designation	Use
3 (0x03)	Read Holding Registers	Read data from registers
43 (0x2B)	Read device identification	Read device identification information

7 Data Types

The following data types are used in the Modbus registers:

Data type	Size	Range of numbers
signed int	16 Bit, register value	-32768 ... 32767
unsigned int	16 Bit, register value	0 ... 65535
signed long	32 Bit, divided over two registers	-2147483648 ... 2147483647
unsigned long	32 Bit, divided over two registers	0 ... 4294967296

8 Modbus Register Tables

8.1 Reading measured values, status values and min./max. values

- Modbus Function code 0x03 (Read Holding Registers)

Add. hex	Data type		Register	Range of values / description	
				Min.	Max.
0000	signed int 16		device type	1=UR840IP, 2=UR420IP	
0001	signed int 16		Measured value Sensor 1T	-31500... 31500 [Unit per sensor type] 32748 = Sensor off, 32749 = measured value too low, 32750 = measured value too high, 32764 = differential value error, 32766 = sensor interrupt, 32767 = sensor short circuit	
0002	signed int 16		Measured value Sensor 2T		
0003	signed int 16		Measured value Sensor 3T		
0004	signed int 16		Measured value Sensor 4T		
0005	signed int 16		Measured value Sensor 5T		
0006	signed int 16		Measured value Sensor 6T		
0007	signed int 16		Measured value Sensor 7T		
0008	signed int 16		Measured value Sensor 8T		
0009	signed int 16		Measured value virtual Sensor V1		
000A	signed int 16		Measured value virtual Sensor V2		
000B	signed int 16		Measured value virtual Sensor V3		
000C	signed int 16		Measured value virtual Sensor V4		
000D	signed int 16		Measured value virtual Sensor V5		
000E	signed int 16		Measured value virtual Sensor V6		
000F	signed int 16		Measured value virtual Sensor V7		
0010	signed int 16		Measured value virtual Sensor V8		
0011	unsigned int 16		Error	Bit 0 = sensor short circuit, Bit 1 = interruption, Bit 2 = Sensor error (Diff.-Temp.) Bit 3 = AD converter, Bit 4 = parameter, Bit 5 = SD card, Bit 6 = adjustment values, Bit 7 = alarm values, Bit 8 = Limit Alarm Bit 9 = Error Sensor Analogoutput Bit 10 = URB Timeout Bit 11 = URB wrong answer Bit 12 = URB illegale address Bit 13 = Communication Master <-> Slave Bit 14 = Error Firmware version Bit 15 = Error internal voltage	
0012	unsigned int 16		Measuring value- counter	0 ...	65535
0013	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – Sensor 1 Status Alarm K1 – Sensor 2	0 = alarm off, 1 = delay alarm on, 2 = alarm on, 3 = delay alarm off, 4 = locked alarm, 5 = alarm 2 of X on, 6 = no function parameterized	
0014	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – Sensor 3 Status Alarm K1 – Sensor 4		
0015	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – Sensor 5 Status Alarm K1 – Sensor 6		
0016	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – Sensor 7 Status Alarm K1 – Sensor 8		
0017	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – virt. Sensor V1 Status Alarm K1 – virt. Sensor V2		
0018	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – virt. Sensor V3 Status Alarm K1 – virt. Sensor V4		
0019	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – virt. Sensor V5 Status Alarm K1 – virt. Sensor V6		
001A	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K1 – virt. Sensor V7 Status Alarm K1 – virt. Sensor V8		
001B	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K2 – Sensor 1 Status Alarm K2 – Sensor 2		
001C	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm K2 – Sensor 3 Status Alarm K2 – Sensor 4		

Add. hex	Data type		Register	Range of values / description	
				Min.	Max.
001D	unsigned int 16	Low High	Status Alarm K2 – Sensor 5 Status Alarm K2 – Sensor 6	0 = alarm off, 1 = delay alarm on, 2 = alarm on, 3 = delay alarm off, 4 = locked alarm, 5 = alarm 2 of X on, 6 = no function parameterized	
001E	unsigned int 16	Low High	Status Alarm K2 – Sensor 7 Status Alarm K2 – Sensor 8		
001F	unsigned int 16	Low High	Status Alarm K2 – virt. Sensor V1 Status Alarm K2 – virt. Sensor V2		
0020	unsigned int 16	Low High	Status Alarm K2 – virt. Sensor V3 Status Alarm K2 – virt. Sensor V4		
0021	unsigned int 16	Low High	Status Alarm K2 – virt. Sensor V5 Status Alarm K2 – virt. Sensor V6		
0022	unsigned int 16	Low High	Status Alarm K2 – virt. Sensor V7 Status Alarm K2 – virt. Sensor V8		
0023	unsigned int 16	Low High	Status Alarm K3 – Sensor 1 Status Alarm K3 – Sensor 2		
0024	unsigned int 16	Low High	Status Alarm K3 – Sensor 3 Status Alarm K3 – Sensor 4		
0025	unsigned int 16	Low High	Status Alarm K3 – Sensor 5 Status Alarm K3 – Sensor 6		
0026	unsigned int 16	Low High	Status Alarm K3 – Sensor 7 Status Alarm K3 – Sensor 8		
0027	unsigned int 16	Low High	Status Alarm K3 – virt. Sensor V1 Status Alarm K3 – virt. Sensor V2		
0028	unsigned int 16	Low High	Status Alarm K3 – virt. Sensor V3 Status Alarm K3 – virt. Sensor V4		
0029	unsigned int 16	Low High	Status Alarm K3 – virt. Sensor V5 Status Alarm K3 – virt. Sensor V6		
002A	unsigned int 16	Low High	Status Alarm K3 – virt. Sensor V7 Status Alarm K3 – virt. Sensor V8		
002B	unsigned int 16	Low High	Status Alarm K4 – Sensor 1 Status Alarm K4 – Sensor 2		
002C	unsigned int 16	Low High	Status Alarm K4 – Sensor 3 Status Alarm K4 – Sensor 4		
002D	unsigned int 16	Low High	Status Alarm K4 – Sensor 5 Status Alarm K4 – Sensor 6		
002E	unsigned int 16	Low High	Status Alarm K4 – Sensor 7 Status Alarm K4 – Sensor 8		
002F	unsigned int 16	Low High	Status Alarm K4 – virt. Sensor V1 Status Alarm K4 – virt. Sensor V2		
0030	unsigned int 16	Low High	Status Alarm K4 – virt. Sensor V3 Status Alarm K4 – virt. Sensor V4		
0031	unsigned int 16	Low High	Status Alarm K4 – virt. Sensor V5 Status Alarm K4 – virt. Sensor V6		
0032	unsigned int 16	Low High	Status Alarm K4 – virt. Sensor V7 Status Alarm K4 – virt. Sensor V8		
0033	unsigned int 16	Low High	Status Alarm URB40 K5 – Sensor 1 Status Alarm URB40 K5 – Sensor 2		
0034	unsigned int 16	Low High	Status Alarm URB40 K5 – Sensor 3 Status Alarm URB40 K5 – Sensor 4		
0035	unsigned int 16	Low High	Status Alarm URB40 K5 – Sensor 5 Status Alarm URB40 K5 – Sensor 6		
0036	unsigned int 16	Low High	Status Alarm URB40 K5 – Sensor 7 Status Alarm URB40 K5 – Sensor 8		
0037	unsigned int 16	Low High	Status Alarm URB40 K5 – virt. Sensor V1 Status Alarm URB40 K5 – virt. Sensor V2		
0038	unsigned int 16	Low High	Status Alarm URB40 K5 – virt. Sensor V3 Status Alarm URB40 K5 – virt. Sensor V4		
0039	unsigned int 16	Low High	Status Alarm URB40 K5 – virt. Sensor V5 Status Alarm URB40 K5 – virt. Sensor V6		
003A	unsigned int 16	Low High	Status Alarm URB40 K5 – virt. Sensor V7 Status Alarm URB40 K5 – virt. Sensor V8		

Addr Hex	Data type		Register	Range of values / description	
				Min.	Max.
003B	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – Sensor 1 Status Alarm URB40 K6 – Sensor 2		
003C	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – Sensor 3 Status Alarm URB40 K6 – Sensor 4		
003D	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – Sensor 5 Status Alarm URB40 K6 – Sensor 6		
003E	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – Sensor 7 Status Alarm URB40 K6 – Sensor 8		
003F	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – virt. Sensor V1 Status Alarm URB40 K6 – virt. Sensor V2		
0040	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – virt. Sensor V3 Status Alarm URB40 K6 – virt. Sensor V4		
0041	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – virt. Sensor V5 Status Alarm URB40 K6 – virt. Sensor V6		
0042	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K6 – virt. Sensor V7 Status Alarm URB40 K6 – virt. Sensor V8		
0043	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – Sensor 1 Status Alarm URB40 K7 – Sensor 2		
0044	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – Sensor 3 Status Alarm URB40 K7 – Sensor 4	0 = alarm off,	
0045	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – Sensor 5 Status Alarm URB40 K7 – Sensor 6	1 = delay alarm on,	
0046	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – Sensor 7 Status Alarm URB40 K7 – Sensor 8	2 = alarm on,	
0047	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – virt. Sensor V1 Status Alarm URB40 K7 – virt. Sensor V2	3 = delay alarm off,	
0048	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – virt. Sensor V3 Status Alarm URB40 K7 – virt. Sensor V4	4 = locked alarm,	
0049	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – virt. Sensor V5 Status Alarm URB40 K7 – virt. Sensor V6	5 = alarm 2 of X on,	
004A	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K7 – virt. Sensor V7 Status Alarm URB40 K7 – virt. Sensor V8	6 = no function parameterized	
004B	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – Sensor 1 Status Alarm URB40 K8 – Sensor 2		
004C	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – Sensor 3 Status Alarm URB40 K8 – Sensor 4		
004D	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – Sensor 5 Status Alarm URB40 K8 – Sensor 6		
004E	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – Sensor 7 Status Alarm URB40 K8 – Sensor 8		
004F	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – virt. Sensor V1 Status Alarm URB40 K8 – virt. Sensor V2		
0050	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – virt. Sensor V3 Status Alarm URB40 K8 – virt. Sensor V4		
0051	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – virt. Sensor V5 Status Alarm URB40 K8 – virt. Sensor V6		
0052	unsigned int 16	<i>Low</i> <i>High</i>	Status Alarm URB40 K8 – virt. Sensor V7 Status Alarm URB40 K8 – virt. Sensor V8		
0053	unsigned int 16	<i>Low</i> <i>High</i>	Status relay K1 Status relay K2		
0054	unsigned int 16	<i>Low</i> <i>High</i>	Status relay K3 Status relay K4	0 = off, 1 = on,	
0055	unsigned int 16	<i>Low</i> <i>High</i>	Status relay URB40 K5 Status relay URB40 K6	2 = on, 3 = off (manually), 4 = on, 5 = off (relay test)	
0056	unsigned int 16	<i>Low</i> <i>High</i>	Status relay URB40 K7 Status relay URB40 K8	6 = on, 7 = off (simulation)	

Add. hex	Data type		Register	Range of values / description	
				Min.	Max.
0057	unsigned int 16		Analog output U1 [0,01 V] *1)	0 ...	
0058	unsigned int 16		Analog output I1 [0,01 mA] *1)	0 ...	
0059	signed int 16		RS485 – protocol *2)	-2 = Modbus,	
005A	unsigned int 16		RS485 – address *2)	1 ... 247	
005B	signed int 16		RS485 – baud rate *2)	-1 = 4800 Bd, -2 = 9600 Bd, -3 = 19200 Bd, -4 = 57600 Bd	
005C	signed int 16		RS485 – parity *2)	-1 = no, -2 = odd, -3 = even	
005D	signed int 16		RS485 – stop bits *2)	1 ... 2	
005E	signed int 16		min. measured value Sensor 1T	-31500 ... 31500 [Unit per sensor type]	
005F	signed int 16		min. measured value Sensor 2T		
0060	signed int 16		min. measured value Sensor 3T		
0061	signed int 16		min. measured value Sensor 4T		
0062	signed int 16		min. measured value Sensor 5T		
0063	signed int 16		min. measured value Sensor 6T		
0064	signed int 16		min. measured value Sensor 7T		
0065	signed int 16		min. measured value Sensor 8T		
0066	signed int 16		min. measured value virt. Sensor V1		
0067	signed int 16		min. measured value virt. Sensor V2		
0068	signed int 16		min. measured value virt. Sensor V3		
0069	signed int 16		min. measured value virt. Sensor V4		
006A	signed int 16		min. measured value virt. Sensor V5		
006B	signed int 16		min. measured value virt. Sensor V6		
006C	signed int 16		min. measured value virt. Sensor V7		
006D	signed int 16		min. measured value virt. Sensor V8		
006E	signed int 16		max. measured value Sensor 1T		
006F	signed int 16		max. measured value Sensor 2T		
0070	signed int 16		max. measured value Sensor 3T		
0071	signed int 16		max. measured value Sensor 4T		
0072	signed int 16		max. measured value Sensor 5T		
0073	signed int 16		max. measured value Sensor 6T		
0074	signed int 16		max. measured value Sensor 7T		
0075	signed int 16		max. measured value Sensor 8T		
0076	signed int 16		max. measured value virt. Sensor V1		
0077	signed int 16		max. measured value virt. Sensor V2		
0078	signed int 16		max. measured value virt. Sensor V3		
0079	signed int 16		max. measured value virt. Sensor V4		
007A	signed int 16		max. measured value virt. Sensor V5		
007B	signed int 16		max. measured value virt. Sensor V6		
007C	signed int 16		max. measured value virt. Sensor V7		
007D	signed int 16		max. measured value virt. Sensor V8		
007E 007F	unsigned int 32	Low High	Counter operating hour	[h]	
0080 0081	unsigned int 32	Low High	Serial number		
0082			Hardware-Version	0 ...	
0083			Firmware-Version, Application		
0084			Firmware-Version, Bootloader	z. B. 0x0B01(hex) -> 12820-1411-01 (dez)	

Adr. hex	Datentyp		Register	Wertebereich	
				Min.	Max.
0085	signed int 16	<i>Low</i> <i>High</i>	Sensor typ 1T Sensor typ 2T	-1 = off, -2 = Pt100, -3 = Pt1000, -4 = PTC, -5 = Thermocouple Typ B, -6 = Thermocouple Typ E, -7 = Thermocouple Typ J, -8 = Thermocouple Typ K, -9 = Thermocouple Typ L, -10 = Thermocouple Typ N, -11 = Thermocouple Typ R, -12 = Thermocouple Typ S, -13 = Thermocouple Typ T, -14 = 0...10V, -15 = 2...10V, -16 = 0...20mA, -17 = 4...20mA, -18 = resistance 500 Ohm, -19 = resistance 30 kOhm	
0086	signed int 16	<i>Low</i> <i>High</i>	Sensor typ 3T Sensor typ 4T		
0087	signed int 16	<i>Low</i> <i>High</i>	Sensor typ 5T Sensor typ 6T		
0088	signed int 16	<i>Low</i> <i>High</i>	Sensor typ 7T Sensor typ 8T		
0089	signed int 16		Sensor compensation 1T	-1 = 3-wire, 0 ... 999 Ohm [XX,X]	
008A	signed int 16		Sensor compensation 2T		
008B	signed int 16		Sensor compensation 3T		
008C	signed int 16		Sensor compensation 4T		
008D	signed int 16		Sensor compensation 5T		
008E	signed int 16		Sensor compensation 6T		
008F	signed int 16		Sensor compensation 7T		
0090	signed int 16		Sensor compensation 8T		
0091	signed int 16	<i>Low</i> <i>High</i>	Sensor scaling Sensor 1T Sensor scaling Sensor 2T	-1 = off, -2 = on	
0092	signed int 16	<i>Low</i> <i>High</i>	Sensor scaling Sensor 3T Sensor scaling Sensor 4T		
0093	signed int 16	<i>Low</i> <i>High</i>	Sensor scaling Sensor 5T Sensor scaling Sensor 6T		
0094	signed int 16	<i>Low</i> <i>High</i>	Sensor scaling Sensor 7T Sensor scaling Sensor 8T		
0095	signed int 16		Sensor scaling zero 1T	-31500 ... 31500	
0096	signed int 16		Sensor scaling zero 2T		
0097	signed int 16		Sensor scaling zero 3T	-31500 ... 31500	
0098	signed int 16		Sensor scaling zero 4T		
0099	signed int 16		Sensor scaling zero 5T		
009A	signed int 16		Sensor scaling zero 6T		
009B	signed int 16		Sensor scaling zero 7T		
009C	signed int 16		Sensor scaling zero 8T		
009D	signed int 16		Sensor scaling full scale 1T		
009E	signed int 16		Sensor scaling full scale 2T		
009F	signed int 16		Sensor scaling full scale 3T		
00A0	signed int 16		Sensor scaling full scale 4T		
00A1	signed int 16		Sensor scaling full scale 5T		
00A2	signed int 16		Sensor scaling full scale 6T		
00A3	signed int 16		Sensor scaling full scale 7T		
00A4	signed int 16		Sensor scaling full scale 8T		

Adr. hex	Datentyp		Register	Wertebereich	
				Min.	Max.
00A5	signed int 16	Low High	Sensor scaling decimal point1T Sensor scaling decimal point2T	-1 = XXXX, -2 = XXX.X, -3 = XX.XX, -4 = X.XXX	
00A6	signed int 16	Low High	Sensor scaling decimal point3T Sensor scaling decimal point4T		
00A7	signed int 16	Low High	Sensor scaling decimal point5T Sensor scaling decimal point6T		
00A8	signed int 16	Low High	Sensor scaling decimal point7T Sensor scaling decimal point8T		
00A9	signed int 16	Low High	Sensor unit 1T Sensor unit 2T	-1 = °C, -2 = V, -3 = mV, -4 = A, -5 = mA, -6 = Ohm, -7 = kOhm, -8 = user defined	
00AA	signed int 16	Low High	Sensor unit 3T Sensor unit 4T		
00AB	signed int 16	Low High	Sensor unit 5T Sensor unit 6T		
00AC	signed int 16	Low High	Sensor unit 7T Sensor unit 8T		

*1) UR840IP only with activated analogue output

*2) UR420IP, UR840IP only with activated RS485

9 Function code 0x2B – read device information

Byte no.		value (hex)	Designation	Description
0	Hi	00	Transaction Identifier	Identification number of a request (at multiple requests at the same time)
1	Lo	00		
2	Hi	00	Protocol Identifier	always 0 (Modbus protocol)
3	Lo	00		
4	Hi	00	Length	Number of following bytes (high Byte is always 0)
5	Lo	05		
6		FF	Unit Identifier	Identification of a remote device (value meaningless)
7		03	Function code	Modbus function code (0x2B, read device information)
8		0E	MEI Type	always 0x0E *1
9		01	Read Device ID code *2	
10		00	Object ID	see function code 0x2B - objects

*1 MEI = MODBUS Encapsulated Interface (see Modbus documentation, <http://www.modbus.org>)

*2
 0x01: Query of “Basic” device information (stream access)
 0x02: Query of “Regular” device information (stream access)
 0x03: Query of “Extended” device information (stream access)
 0x04: Query individual device information (individual access)

9.1 Function code 0x2B - objects

Object Id	Object name / Description	Content	Type	Category
0x00	Manufacturer name	ZIEHL industrie-elektronik GmbH + Co KG	ASCII String	Basic
0x01	Product- (article-) number	T224353 / T224354		
0x02	Revision Firmware	12820-0402-xx		
0x03	Manufacture URL	www.ziehl.com	ASCII String	Regular
0x04	Product name	Universal relay		
0x05	Product description	UR840IP / UR420IP		
0x80	Serial number	xxxxxxxx	ASCII String	Extended
0x81	Revision Hardware	xx (e.g. „04“)		
0x82	Revision Bootloader	12750-1400-xx		

10 Note for SIEMENS SIMATIC S7-1500

The following values must be set on the communication block:

MODE = 0

DATA_ADDR with number range 40001-49999 List Hold-Register with function code 3

Example: read the hold register in the ZIEHL device:

Temperature 1: DATA_ADDR = 40002 == Ziehl Holdregister 1

Temperature 2: DATA_ADDR = 40003 == Ziehl Holdregister 2

to

Temperature 6: DATA_ADDR = 40007 == Ziehl Holdregister 6

The data length (DATA_LEN) must be set to 1 word,

Otherwise, you get an error message.