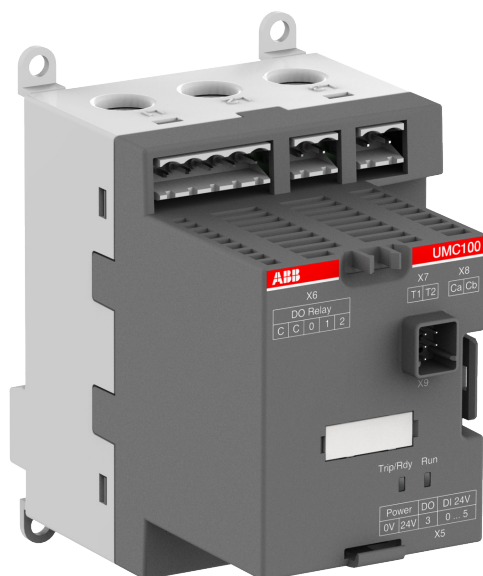


APPLICATION NOTE

Mapping tables for acyclic access to the UMC100.3

How to access data acyclically



This document contains the acyclic mapping of the following communication protocols:

- EtherNet/IP™
- Modbus TCP
- Profibus
- Profinet

Purpose of this document

According to the UMC100.3 manual, several data, information and diagnostics can be transferred with the cyclic communication. Some information are not available in the cyclic data and since they are absolutely required, some can be read over the acyclic data.

Pre-information

In the following tables, please always read/write the complete 8 byte given in one line, even when you only need a part of it. Furthermore there are gray shaded areas in the tables. These bytes are reserved/unused, so please don't use them.



01



02

01 EIU32.0

02 EIU32.0 on SMK3.0

EtherNet/IP™

The EtherNet/IP™ module EIU32.0 can be mounted directly on the UMC100.3 or remotely on the single mounting kit SMK3.0.

The data access is defined by “Class”, “Instance” and “Attribute”. The class is defined by the data type. The instance defines a data area, like “acyclic data”. Inside each data area, the parameters are addressed with the attribute. Each attribute consists of 8 byte. You will find the table for EtherNet/IPTM on the pages 5 to 8.



03

03 MTQ22.0

Modbus TCP

The MTQ22.0 is our communication interface for Modbus TCP and has four communication ports to connect up to four UMC100.3 to one MTQ22.0.

The parameter and value storage of the MTQ22.0 is built up in registers which can be accessed with Modbus function codes 0x03 and 0x04 for reading and 0x10 for writing. The register addresses for each port can be found in the table Modbus TCP on the pages 9 to 12.



01



02

01 PDP32.0

02 PDP32.0 on SMK3.0

Profibus

For Profibus the PDP32.0 communication interface has to be used. This interface can be directly mounted on the UMC100.3 or remotely with a single mounting kit SMK3.0.

The access with Profibus works over so called "Slot" and "Index". The slot addresses a data area, so in the UMC100.3 one slot would be "acyclic data", another one is "parameter read/write unpacked". Inside each slot a specific data/dataset is addressed via the index. With the UMC100.3 each index contains 8 byte of data. You will find the table for Profibus on the pages 13 to 16.



03

03 PNQ22.0

Profinet

The PNQ22.0 and PNU32.0 modules are used for Profinet communication.



04

04 PNU32.0

Profinet

PNU32.0 also supports basic ModbusTCP functionality. The according indexes/registers for the PNU32.0 are those of PNQ22/MTQ22 Port 1.

The PNU32.0 allows for block read out of acyclic data. This massively frees up capacity of the DCS controller and therefore increases performance.

The data of the acyclic addresses 0x0431...0x047E can be read/write in blocks bigger than 8 byte per request. It is also possible to start at any other address and read out less than 624 bytes.

Example 1: Starting at address 0x0431 and reading out all 624 bytes at once. Therefore, getting all acyclic information in one read request.

Example 2: Starting at any other address within 0x0431...0x047E and read any number of bytes (dividable by 8). For example, the request starts at address 0x0467 and reads out 16 bytes. This will obtain the “UMC Measuring Data 1/2”.

Example 3: A request starting at either address 0x0436 and writing 16 bytes or on 0x046A writing 24 bytes, is also possible.

The same process is also applying for the acyclic communication with ModbusTCP (PNU32.0 only). The respective addresses are in the ModbusTCP table for port 1.

Mapping tables

Note

- The data length to read/write is always 8 byte.
- If you use the PDF-version of the application note, it is recommended to use the Adobe Acrobat Reader “Two Page View”, in order to see the tables in full width on your screen (Adobe Acrobat Reader setting: View > Page Display > Two Page View).

EtherNet/IP™

Class (hex)	Instance (hex)	Attribute (hex)	Length	Access	Title	Byte 0	Byte 1	Byte 2
74	5	31	8	Read	UMC / Panel	State of DI (Bit 0 = DI0 ... Bit 5 = DI5)	State of DO (Bit 0 = DO0 ... Bit 3 = DO3)	UMC-Version 1st Pos.
74	5	32	8	Read	Cyclic Command Data	Cyclic Command Byte 0	Cyclic Command Byte 1	Cyclic Command Byte 2
74	5	33	8	Read	Cyclic Command Data	Cyclic Analog Word 0		Cyclic Analog Word 1
74	5	34	8	Read	Cyclic Monitoring Data	Cyclic Monitoring Byte 0	Cyclic Monitoring Byte 1	Cyclic Monitoring Byte 12
74	5	35	8	Read	Cyclic Monitoring Data	Cyclic Analog Word 1		Cyclic Analog Word 2
74	5	36	8	Write	Cyclic Command Data	Acyclic Command Byte 0 (Bit 1 = Rev / Bit 2 = Stop / Bit 3 = Fwd / Bit 7 = Fault reset)		
74	5	37	8	Write	Cyclic Command Data	Acyclic Analog Word 0		Acyclic Analog Word 1
74	5	38	8	Read	Cyclic Command Data	Acyclic Monitoring Byte 0	Acyclic Monitoring Byte 1	
74	5	39	8	Read	Cyclic Command Data	Acyclic Analog Word 0		Acyclic Analog Word 1
74	5	3A	8	Read	Current	Motor Running I>20% (Bit 0 = True)		Current [%]
74	5	3B	8	Read	Measuring data	Max. Current at Startup [%]		Motor Startup time [100ms]
74	5	3C	8	Read	UMC Basic Data	Number of starts		Number of trips
74	5	3D	8	Read	UMC Timers	Time since power on [s]		Time since power on [s]
74	5	3E	8	Read	Detail Errors Part 0	Diagnostic (Fault) Byte 0	Diagnostic (Fault) Byte 1	Diagnostic (Fault) Byte 2
74	5	3F	8	Read	Detail Errors Part 1			
74	5	40	8	Read	Detail Errors Part 2			
74	5	41	8	Read	Detail Errors Part 3			
74	5	42	8	Read	Detail Warnings Part 0	Diagnostic (Warnings) Byte 0	Diagnostic (Warnings) Byte 1	Diagnostic (Warnings) Byte 2
74	5	43	8	Read	Detail Warnings Part 1			
74	5	44	8	Read	Detail Warnings Part 2			
74	5	45	8	Read	Detail Warnings Part 3			
74	5	66	8	Read	I/O Module DX1xx	State of DX1xx DI (Bit 0 = DI0 ... Bit 7 = DI7)	State of DX1xx DO (Bit 0 = DO0 ... Bit 3 = DO 3)	AO0 [%]
74	5	67	8	Read	UMC Measuring data 1	PTC [Ohm]		Current Unbalance [%]
74	5	68	8	Read	UMC Measuring data 2	Thermal Load [%]		Time To Trip [s]
74	5	69	8	Read	UMC Access	Parameter Locked (Bit 0 = True)	Parameter changed (Bit 0 = True)	
74	5	6A	8	Write	UMC Password WriteAck.	Write Password		
74	5	6B	8	Write	UMC Bus Addr. WriteAck.	Write Bus Address		
74	5	6C	8	Write	Reset counters	Reset Counter: Bit 0: Operation hours Bit 1: Number starts Bit 2: Number trips + Nu. Therm trips Bit 3: Nu. Therm trips Bit 4: Nu. Emerg. Starts Bit 5: Energy		
74	5	6D	8	Read	VI15x Part 1	U L1L2 [V]		U L2L3 [V]

EtherNet/IP™

Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
UMC-Version 2nd Pos.	Basic DI: Bit 0: Force loc Bit 1: Stop Bit 2:Voltage Dip Bit 3:Fault 1 Bit 4:Fault 2 Bit 5:Fault 3 Bit 6: Testposition Bit 7: Prep. Em.Start	Basic DI: Bit 0: Fault Reset Bit 1: CEM11	Monitoring status: Bit 0: Fast FWD Bit 1: FWD Bit 2: Stop Bit 3: REV Bit 4: Fast REV Bit 5: Reverse lockout Time running Bit 6: General Fault Bit 7: General Warning	UMC-Version 3rd Pos.
Cyclic Command Byte 3				
	Cyclic Analog Word 2		Cyclic Analog Word 3	
Cyclic Monitoring Byte 13	Cyclic Monitoring Byte 14	Cyclic Monitoring Byte 15	Cyclic Analog Word 0	
	Cyclic Analog Word 3		Cyclic Analog Word 4	
Acyclic Analog Word 1	Acyclic Analog Word 2		Acyclic Analog Word 3	
Acyclic Analog Word 1	Acyclic Analog Word 2		Acyclic Analog Word 3	
Current [%]	Absolute Current [10mA]			Current [%]
Motor Startup time [100ms]				
Number of trips	Number of thermal Overload trips		Number emergency starts	
Time since power on [s]	Motor operating hours [s]			
Diagnostic (Fault) Byte 3	Diagnostic (Fault) Byte 4	Diagnostic (Fault) Byte 5	Diagnostic (Fault) Byte 6	Diagnostic (Fault) Byte 7 (Extended Diagnostic)
Diagnostic (Warning) Byte 3	Diagnostic (Warning) Byte 4	Diagnostic (Warning) Byte 5	Diagnostic (Warning) Byte 6	Diagnostic (Warning) Byte 7 (Extended Diagnostic)
	Line Frequency [100mHz]		Wrong Phase Sequence (Bit 0 = true)	
Time To Trip [s]	Time To Restart [s]			
	Bus Address			
U L2L3 [V]	U L3L1 [V]		U average L1...L3 [V]	

—

EtherNet/IP™

Class (hex)	Instance (hex)	Attribute (hex)	Length	Access	Title	Byte 0	Byte 1	Byte 2
74	5	6E	8	Read	VI15x Part2	Power factor [0,001]		Voltage unbalance [0,1%]
74	5	6F	8	Read	VI15x Part3	Active power [W] (without power scale factor)		
74	5	70	8	Read	VI15x Part4	Energy [kWh]		
74	5	71	8	Read	UMC Data 1	Permissible Starts	Number of Starts >1	1 Start Possible
74	5	72	8	Read	reserved			
74	5	73	8	Read	Analog Module 1	AM1 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 CH2 value (Temp in K, voltage/current signals scaled 0..27648)
74	5	74	8	Read	Analog Module 2	AM2 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 CH2 value (Temp in K, voltage/current signals scaled 0..27648)
74	5	75	8	Read	Maintenance	Motor stand still hours [s]		
74	5	76	8	Read	UMC Data	Current L1 [%]		Current L2 [%]
74	5	77	8	Read	UMC Data	Absolute Current L1 [10mA]		
74	5	78	8	Read	UMC Data	Absolute Current L3 [10mA]		

EtherNet/IP™

Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
THD L1 [0,1%]	THD L2 [0,1%]	THD L3 [0,1%]	VI15x Status Bit0: Voltage module ready Bit1: Voltage phase loss Bit2: Voltage freq. out of range Bit3: Voltage DIP detected Bit4: Voltage out of range (ADC setting) Bit 5: Wrong phase sequ.	
Active power [W] (without power scale factor)	apparent power [VA] (without power scale factor)			
Energy [kWh]				
No Start Possible	Current to earth [%]			
AM1 CH2 value (Temp in K, voltage/current signals scaled 0..27648)	AM1 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 temp max value (only when used in temperature mode)	
AM2 CH2 value (Temp in K, voltage/current signals scaled 0..27648)	AM2 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 temp max value (only when used in temperature mode)	
Motor stand still hours [s]				
Current L2 [%]	Current L3 [%]			
Absolute Current L1 [10mA]	Absolute Current L2 [10mA]			
Absolute Current L3 [10mA]				

Modbus TCP

UMC Port 1		UMC Port 2		UMC Port 3		UMC Port 4		Length	Access	Title	Byte 0	Byte 1
DEC	HEX	DEC	HEX	DEC	HEX	DEC	HEX					
45252	B0C4	51396	C8C4	57540	E0C4	63684	F8C4	8	Read	UMC / Panel	State of DI (Bit 0 = DI0 ... Bit 5 = DI5)	State of DO (Bit 0 = DO0 ... Bit 3 = DO3)
45256	B0C8	51400	C8C8	57544	E0C8	63688	F8C8	8	Read	Cyclic Command Data	Cyclic Command Byte 0	Cyclic Command Byte 1
45260	B0CC	51404	C8CC	57548	E0CC	63692	F8CC	8	Read	Cyclic Command Data	Cyclic Analog Word 0	
45264	B0D0	51408	C8D0	57552	E0D0	63696	F8D0	8	Read	Cyclic Monitoring Data	Cyclic Monitoring Byte 0	Cyclic Monitoring Byte 1
45268	B0D4	51412	C8D4	57556	E0D4	63700	F8D4	8	Read	Cyclic Monitoring Data	Cyclic Analog Word 1	
45272	B0D8	51416	C8D8	57560	E0D8	63704	F8D8	8	Write	Acyclic Command Data	Acyclic Command Byte 0: (Bit 1 = Rev / Bit 2 = Stop / Bit 3 = Fwd / Bit 7 = Fault reset)	
45276	B0DC	51420	C8DC	57564	E0DC	63708	F8DC	8	Write	Acyclic Command Data	Acyclic Analog Word 0	
45280	B0E0	51424	C8E0	57568	E0E0	63712	F8E0	8	Read	Acyclic Command Data	Acyclic Monitoring Byte 0	Acyclic Monitoring Byte 1
45284	B0E4	51428	C8E4	57572	E0E4	63716	F8E4	8	Read	Acyclic Command Data	Acyclic Analog Word 0	
45288	B0E8	51432	C8E8	57576	E0E8	63720	F8E8	8	Read	Current	Motor Running I>20% (Bit 0 = True)	
45292	B0EC	51436	C8EC	57580	E0EC	63724	F8EC	8	Read	Measuring data	Max. Current at Startup [%]	
45296	B0F0	51440	C8F0	57584	E0F0	63728	F8F0	8	Read	UMC Basic Data	Number of starts	
45300	B0F4	51444	C8F4	57588	E0F4	63732	F8F4	8	Read	UMC Timers	Time since power on [s]	
45304	B0F8	51448	C8F8	57592	E0F8	63736	F8F8	8	Read	Detail Errors Part 0	Diagnostic (Fault) Byte 0	Diagnostic (Fault) Byte 1
45308	B0FC	51452	C8FC	57596	E0FC	63740	F8FC	8	Read	Detail Errors Part 1		
45312	B100	51456	C900	57600	E100	63744	F900	8	Read	Detail Errors Part 2		
45316	B104	51460	C904	57604	E104	63748	F904	8	Read	Detail Errors Part 3		
45320	B108	51464	C908	57608	E108	63752	F908	8	Read	Detail Warnings Part 0	Diagnostic (Warning) Byte 0	Diagnostic (Warning) Byte 1
45324	B10C	51468	C90C	57612	E10C	63756	F90C	8	Read	Detail Warnings Part 1		
45328	B110	51472	C910	57616	E110	63760	F910	8	Read	Detail Warnings Part 2		
45332	B114	51476	C914	57620	E114	63764	F914	8	Read	Detail Warnings Part 3		
45336	B118	51480	C918	57624	E118	63768	F918	8	Read	Historical Error 1	Error Number 1	
45340	B11C	51484	C91C	57628	E11C	63772	F91C	8	Read	Historical Error 2	Error Number 2	
45344	B120	51488	C920	57632	E120	63776	F920	8	Read	Historical Error 3	Error Number 3	
45348	B124	51492	C924	57636	E124	63780	F924	8	Read	Historical Error 4	Error Number 4	
45352	B128	51496	C928	57640	E128	63784	F928	8	Read	Historical Error 5	Error Number 5	
45356	B12C	51500	C92C	57644	E12C	63788	F92C	8	Read	Historical Error 6	Error Number 6	
45360	B130	51504	C930	57648	E130	63792	F930	8	Read	Historical Error 7	Error Number 7	
45364	B134	51508	C934	57652	E134	63796	F934	8	Read	Historical Error 8	Error Number 8	
45368	B138	51512	C938	57656	E138	63800	F938	8	Read	Historical Error 9	Error Number 9	
45372	B13C	51516	C93C	57660	E13C	63804	F93C	8	Read	Historical Error 10	Error Number 10	
45376	B140	51520	C940	57664	E140	63808	F940	8	Read	Historical Error 11	Error Number 11	
45380	B144	51524	C944	57668	E144	63812	F944	8	Read	Historical Error 12	Error Number 12	
45384	B148	51528	C948	57672	E148	63816	F948	8	Read	Historical Error 13	Error Number 13	
45388	B14C	51532	C94C	57676	E14C	63820	F94C	8	Read	Historical Error 14	Error Number 14	
45392	B150	51536	C950	57680	E150	63824	F950	8	Read	Historical Error 15	Error Number 15	
45396	B154	51540	C954	57684	E154	63828	F954	8	Read	Historical Error 16	Error Number 16	
45400	B158	51544	C958	57688	E158	63832	F958	8	Read	Historical Warn 1	Warn Number 1	Status 1
45404	B15C	51548	C95C	57692	E15C	63836	F95C	8	Read	Historical Warn 2	Warn Number 2	Status 2

Modbus TCP

Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
UMC-Version 1st Pos.	UMC-Version 2nd Pos.	Basic DI: Bit 0: Force loc Bit 1: Stop Bit 2:Voltage Dip Bit 3:Fault 1 Bit 4:Fault 2 Bit 5:Fault 3 Bit 6: Testposition Bit 7: Prep.Em.Start	Basic DI: Bit 0: Fault Reset Bit 1: CEM11	Monitoring status: Bit 0: Fast FWD Bit 1: FWD Bit 2: Stop Bit 3: REV Bit 4: Fast REV Bit 5: Reverse lockout Time running Bit 6: General Fault Bit 7: General Warning	UMC-Version 3rd Pos.
Cyclic Command Byte 2	Cyclic Command Byte 3				
Cyclic Analog Word 1		Cyclic Analog Word 2		Cyclic Analog Word 3	
Cyclic Monitoring Byte 12	Cyclic Monitoring Byte 13	Cyclic Monitoring Byte 14	Cyclic Monitoring Byte 15	Cyclic Analog Word 0	
Cyclic Analog Word 2		Cyclic Analog Word 3		Cyclic Analog Word 4	
Acyclic Analog Word 1		Acyclic Analog Word 2		Cyclic Analog Word 3	
Acyclic Analog Word 1		Acyclic Analog Word 2		Cyclic Analog Word 3	
Current [%]		Absolute Current [10mA]			
Motor Startup time [100ms]					
Number of trips		Number of thermal Overload trips		Number emergency starts	
Time since power on [s]		Motor operating hours [s]			
Diagnostic (Fault) Byte 2	Diagnostic (Fault) Byte 3	Diagnostic (Fault) Byte 4	Diagnostic (Fault) Byte 5	Diagnostic (Fault) Byte 6	Diagnostic (Fault) Byte 7 (Extended Diagnostic)
Diagnostic (Warning) Byte 2	Diagnostic (Warning) Byte 3	Diagnostic (Warning) Byte 4	Diagnostic (Warning) Byte 5	Diagnostic (Warning) Byte 6	Diagnostic (Warning) Byte 7 (Extended Diagnostic)
		Time 1 (s)			
		Time 2 (s)			
		Time 3 (s)			
		Time 4 (s)			
		Time 5 (s)			
		Time 6 (s)			
		Time 7 (s)			
		Time 8 (s)			
		Time 9 (s)			
		Time 10 (s)			
		Time 11 (s)			
		Time 12 (s)			
		Time 13 (s)			
		Time 14 (s)			
		Time 15 (s)			
		Time 16 (s)			
		Time 1 (s)			
		Time 2 (s)			

Modbus TCP

UMC Port 1		UMC Port 2		UMC Port 3		UMC Port 4		Length	Access	Title	Byte 0	Byte 1	
DEC	HEX	DEC	HEX	DEC	HEX	DEC	HEX						
45408	B160	51552	C960	57696	E160	63840	F960	8	Read	Historical Warn 3	Warn Number 3	Status 3	
45412	B164	51556	C964	57700	E164	63844	F964	8	Read	Historical Warn 4	Warn Number 4	Status 4	
45416	B168	51560	C968	57704	E168	63848	F968	8	Read	Historical Warn 5	Warn Number 5	Status 5	
45420	B16C	51564	C96C	57708	E16C	63852	F96C	8	Read	Historical Warn 6	Warn Number 6	Status 6	
45424	B170	51568	C970	57712	E170	63856	F970	8	Read	Historical Warn 7	Warn Number 7	Status 7	
45428	B174	51572	C974	57716	E174	63860	F974	8	Read	Historical Warn 8	Warn Number 8	Status 8	
45432	B178	51576	C978	57720	E178	63864	F978	8	Read	Historical Warn 9	Warn Number 9	Status 9	
45436	B17C	51580	C97C	57724	E17C	63868	F97C	8	Read	Historical Warn 10	Warn Number 10	Status 10	
45440	B180	51584	C980	57728	E180	63872	F980	8	Read	Historical Warn 11	Warn Number 11	Status 11	
45444	B184	51588	C984	57732	E184	63876	F984	8	Read	Historical Warn 12	Warn Number 12	Status 12	
45448	B188	51592	C988	57736	E188	63880	F988	8	Read	Historical Warn 13	Warn Number 13	Status 13	
45452	B18C	51596	C98C	57740	E18C	63884	F98C	8	Read	Historical Warn 14	Warn Number 14	Status 14	
45456	B190	51600	C990	57744	E190	63888	F990	8	Read	Historical Warn 15	Warn Number 15	Status 15	
45460	B194	51604	C994	57748	E194	63892	F994	8	Read	Historical Warn 16	Warn Number 16	Status 16	
45464	B198	51608	C998	57752	E198	63896	F998	8	Read	I/O Module DX1xx	State of DX1xx DI (Bit 0 = DI0 ... Bit 7 = DI7)	State of DX1xx DO (Bit 0 = DO0 ... Bit 3 = DO 3)	
45468	B19C	51612	C99C	57756	E19C	63900	F99C	8	Read	UMC Measuring data 1	PTC [Ohm]		
45472	B1A0	51616	C9A0	57760	E1A0	63904	F9A0	8	Read	UMC Measuring data 2	Thermal Load [%]		
45476	B1A4	51620	C9A4	57764	E1A4	63908	F9A4	8	Read	UMC Access	Parameter Locked (Bit 0 = true)	Password changed (Bit 0 = true)	
45480	B1A8	51624	C9A8	57768	E1A8	63912	F9A8	8	Write	UMC Password WriteAck.	Write Password		
45484	B1AC	51628	C9AC	57772	E1AC	63916	F9AC	8	Write	UMC Bus Addr. WriteAck.	Write Bus Address		
45488	B1B0	51632	C9B0	57776	E1B0	63920	F9B0	8	Write	Reset Counters	Reset Counter: Bit 0: Operation hours Bit 1: Number starts Bit 2: Number trips + Nu. Therm trips Bit 3: Nu. Therm trips Bit 4: Nu. Emerg. Starts Bit 5: Energy		
45492	B1B4	51636	C9B4	57780	E1B4	63924	F9B4	8	Read	VI15x Part1	U L1L2 [V]		
45496	B1B8	51640	C9B8	57784	E1B8	63928	F9B8	8	Read	VI15x Part2	Power factor [0,001]		
45500	B1BC	51644	C9BC	57788	E1BC	63932	F9BC	8	Read	VI15x Part3	Active power [W] (without power scale factor)		
45504	B1C0	51648	C9C0	57792	E1C0	63936	F9C0	8	Read	VI15x Part4	Energy [kWh]		
45508	B1C4	51652	C9C4	57796	E1C4	63940	F9C4	8	Read	UMC Data 1	Permissible Starts	Number of Starts >1	
45512	B1C8	51656	C9C8	57800	E1C8	63944	F9C8	8	Read	reserved			
45516	B1CC	51660	C9CC	57804	E1CC	63948	F9CC	8	Read	Analog Module 1	AM1 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		
45520	B1D0	51664	C9D0	57808	E1D0	63952	F9D0	8	Read	Analog Module 2	AM2 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		
45524	B1D4	51668	C9D4	57812	E1D4	63956	F9D4	8	Read	Maintenance	Motor stand still hours [s]		
45528	B1D8	51672	C9D8	57816	E1D8	63960	F9D8	8	Read	UMC Data	Current L1 [%]		
45532	B1DC	51676	C9DC	57820	E1DC	63964	F9DC	8	Read	UMC Data	Absolute Current L1 [10mA]		
45536	B1E0	51680	C9E0	57824	E1E0	63968	F9E0	8	Read	UMC Data	Absolute Current L3 [10mA]		

Modbus TCP

Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
		Time 3 (s)			
		Time 4(s)			
		Time 5 (s)			
		Time 6 (s)			
		Time 7 (s)			
		Time 8 (s)			
		Time 9 (s)			
		Time 10 (s)			
		Time 11 (s)			
		Time 12 (s)			
		Time 13 (s)			
		Time 14(s)			
		Time 15 (s)			
		Time 16 (s)			
AO0 [%]					
U L2L3 [V]		U L3L1 [V]		U average L1...L3 [V]	
Voltage unbalance [0,1%]	THD L1 [0,1%]	THD L2 [0,1%]	THD L3 [0,1%]	VI15x Status Bit0: Voltage module ready Bit1: Voltage phase loss Bit2: Voltage freq. out of range Bit3: Voltage DIP detected Bit4: Voltage out of range (ADC setting) Bit 5: Wrong phase sequ.	
Active power [W] (without power scale factor)		Apparent power [VA] (without power scale factor)			
Energy [kWh]					
1 Start Possible	No Start Possible	Current to earth [%]			
AM1 CH2 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 temp max value (only when used in temperature mode)	
AM2 CH2 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 temp max value (only when used in temperature mode)	
Motor stand still hours [s]					
Current L2 [%]		Current L3 [%]			
Absolute Current L1 [10mA]		Absolute Current L2 [10mA]			
Absolute Current L3 [10mA]					

Profibus

Slot	Index (hex)	Length	Access	Title	Byte 0	Byte 1	Byte 2
4	49	8	Read	UMC / Panel	State of DI (Bit 0 = DI0 ... Bit 5 = DI5)	State of DO (Bit 0 = DO0 ... Bit 3 = DO3)	UMC-Version 1st Pos.
4	50	8	Read	Cyclic Command Data	Cyclic Command Byte 0	Cyclic Command Byte 1	Cyclic Command Byte 2
4	51	8	Read	Cyclic Command Data	Cyclic Analog Word 0		Cyclic Analog Word 1
4	52	8	Read	Cyclic Monitoring Data	Cyclic Monitoring Byte 0	Cyclic Monitoring Byte 1	Cyclic Monitoring Byte 12
4	53	8	Read	Cyclic Monitoring Data	Cyclic Analog Word 1		Cyclic Analog Word 2
4	54	8	Write	Acyclic Command Data	Acyclic Command Byte 0: (Bit 1 = Rev / Bit 2 = Stop / Bit 3 = Fwd / Bit 7 = Fault reset)		
4	55	8	Write	Acyclic Command Data	Acyclic Analog Word 0		Acyclic Analog Word 1
4	56	8	Read	Acyclic Command Data	Acyclic Monitoring Byte 0	Acyclic Monitoring Byte 1	
4	57	8	Read	Acyclic Command Data	Acyclic Analog Word 0		Acyclic Analog Word 1
4	58	8	Read	Current	Motor Running I>20% (Bit 0 = True)		Current [%]
4	59	8	Read	Measuring data	Max. Current at Startup [%]		Motor Startup time [100ms]
4	60	8	Read	UMC Basic Data	Number of starts		Number of trips
4	61	8	Read	UMC Timers	Time since power on [s]		
4	62	8	Read	Detail Errors Part 0	Diagnostic (Fault) Byte 0	Diagnostic (Fault) Byte 1	Diagnostic (Fault) Byte 2
4	63	8	Read	Detail Errors Part 1			
4	64	8	Read	Detail Errors Part 2			
4	65	8	Read	Detail Errors Part 3			
4	66	8	Read	Detail Warnings Part 0	Diagnostic (Warning) Byte 0	Diagnostic (Warning) Byte 1	Diagnostic (Warning) Byte 2
4	67	8	Read	Detail Warnings Part 1			
4	68	8	Read	Detail Warnings Part 2			
4	69	8	Read	Detail Warnings Part 3			
4	102	8	Read	I/O Module DX1xx	State of DX1xx DI (Bit 0 = DI0 ... Bit 7 = DI7)	State of DX1xx DO (Bit 0 = DO0 ... Bit 3 = DO 3)	AO0 [%]
4	103	8	Read	UMC Measuring data 1	PTC [Ohm]		Current Unbalance [%]
4	104	8	Read	UMC Measuring data 2	Thermal Load [%]		Time To Trip [s]
4	105	8	Read	UMC Access	Parameter Locked (Bit 0 = true)	Password changed (Bit 0 = true)	
4	106	8	Write	UMC Password WriteAck.	Write Password		
4	107	8	Write	UMC Bus Addr. WriteAck.	Write Bus Address		
4	108	8	Write	Reset Counters	Reset Counter: Bit 0: Operation hours Bit 1: Number starts Bit 2: Number trips + Nu. Therm trips Bit 3: Nu. Therm trips Bit 4: Nu. Emerg. Starts Bit 5: Energy		
4	109	8	Read	VI15x Part1	U L1L2 [V]		U L2L3 [V]
4	110	8	Read	VI15x Part2	Power factor [0,001]		Voltage unbalance [0,1%]

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Profibus

Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
UMC-Version 2nd Pos.	Basic DI: Bit 0: Force loc Bit 1: Stop Bit 2: Voltage Dip Bit 3:Fault 1 Bit 4: Fault 2 Bit 5: Fault 3 Bit 6: Testposition Bit 7: Prep.Em.Start	Basic DI: Bit 0: Fault Reset Bit 1: CEM11	Monitoring status: Bit 0: Fast FWD Bit 1: FWD Bit 2: Stop Bit 3: REV Bit 4: Fast REV Bit 5: Reverse lockout Time running Bit 6: General Fault Bit 7: General Warning	UMC-Version 3rd Pos.
Cyclic Command Byte 3				
Cyclic Analog Word 1	Cyclic Analog Word 2		Cyclic Analog Word 3	
Cyclic Monitoring Byte 13	Cyclic Monitoring Byte 14	Cyclic Monitoring Byte 15	Cyclic Analog Word 0	
Cyclic Analog Word 2	Cyclic Analog Word 3		Cyclic Analog Word 4	
Acyclic Analog Word 1	Acyclic Analog Word 2		Acyclic Analog Word 3	
Acyclic Analog Word 1	Acyclic Analog Word 2		Acyclic Analog Word 3	
Current [%]	Absolute Current [10mA]			
Motor Startup time [100ms]				
Number of trips	Number of thermal Overload trips		Number emergency starts	
Time since power on [s]	Motor operating hours [s]			
Diagnostic (Fault) Byte 3	Diagnostic (Fault) Byte 4	Diagnostic (Fault) Byte 5	Diagnostic (Fault) Byte 6	Diagnostic (Fault) Byte 7 (Extended Diagnostic)
Diagnostic (Warning) Byte 3	Diagnostic (Warning) Byte 4	Diagnostic (Warning) Byte 5	Diagnostic (Warning) Byte 6	Diagnostic (Warning) Byte 7 (Extended Diagnostic)
	Line Frequency [100mHz]		Wrong Phase Sequence (Bit 0 = true)	
Time To Trip [s]	Time To Restart [s]			
	Bus Address			
U L2L3 [V]	U L3L1 [V]		U average L1...L3 [V]	
THD L1 [0,1%]	THD L2 [0,1%]	THD L3 [0,1%]	VI15x Status Bit0: Voltage module ready Bit1: Voltage phase loss Bit2: Voltage freq. out of range Bit3: Voltage DIP detected Bit4: Voltage out of range (ADC setting) Bit 5: Wrong phase sequ.	

Profibus

Slot	Index (hex)	Length	Access	Title	Byte 0	Byte 1	Byte 2
4	111	8	Read	VI15x Part3	Active power [W] (without power scale factor)		
4	112	8	Read	VI15x Part4	Energy [kWh]		
4	113	8	Read	UMC Data 1	Permissible Starts	Number of Starts >1	1 Start Possible
4	114	8	Read	reserved			
4	115	8	Read	Analog Module 1	AM1 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 CH2 value (Temp in K, voltage/current signals scaled 0..27648)
4	116	8	Read	Analog Module 2	AM2 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 CH2 value (Temp in K, voltage/current signals scaled 0..27648)
4	117	8	Read	Maintenance	Motor stand still hours [s]		
4	118	8	Read	UMC Data	Current L1 [%]		Current L2 [%]
4	119	8	Read	UMC Data	Absolute Current L1 [10mA]		
4	120	8	Read	UMC Data	Absolute Current L3 [10mA]		

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Profibus

Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
Active power [W] (without power scale factor)	Apparent power [VA] (without power scale factor)			
Energy [kWh]				
No Start Possible	Current to earth [%]			
AM1 CH2 value (Temp in K, voltage/current signals scaled 0..27648)	AM1 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 temp max value (only when used in temperature mode)	
AM2 CH2 value (Temp in K, voltage/current signals scaled 0..27648)	AM2 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 temp max value (only when used in temperature mode)	
Motor stand still hours [s]				
Current L2 [%]	Current L3 [%]			
Absolute Current L1 [10mA]	Absolute Current L2 [10mA]			
Absolute Current L3 [10mA]				

Profinet

Slot	Subslot	Index (hex)	Length	Access	Title	Byte 0	Byte 1	Byte 2
1...4	1	0x0431	8	Read	UMC / Panel	State of DI (Bit 0 = DI0 ... Bit 5 = DI5)	State of DO (Bit 0 = DO0 ... Bit 3 = DO3)	UMC-Version 1st Pos.
1...4	1	0x0432	8	Read	Cyclic Command Data	Cyclic Command Byte 0	Cyclic Command Byte 1	Cyclic Command Byte 2
1...4	1	0x0433	8	Read	Cyclic Command Data	Cyclic Analog Word 0		Cyclic Analog Word 1
1...4	1	0x0434	8	Read	Cyclic Monitoring Data	Cyclic Monitoring Byte 0	Cyclic Monitoring Byte 1	Cyclic Monitoring Byte 12
1...4	1	0x0435	8	Read	Cyclic Monitoring Data	Cyclic Analog Word 1		Cyclic Analog Word 2
1...4	1	0x0436	8	Write	Acyclic Command Data	Acyclic Command Byte 0: (Bit 1 = Rev / Bit 2 = Stop / Bit 3 = Fwd / Bit 7 = Fault reset)		
1...4	1	0x0437	8	Write	Acyclic Command Data	Acyclic Analog Word 0		Acyclic Analog Word 1
1...4	1	0x0438	8	Read	Acyclic Command Data	Acyclic Monitoring Byte 0	Acyclic Monitoring Byte 1	
1...4	1	0x0439	8	Read	Acyclic Command Data	Acyclic Analog Word 0		Acyclic Analog Word 1
1...4	1	0x043A	8	Read	Current	Motor Running I>20% (Bit 0 = True)		Current [%]
1...4	1	0x043B	8	Read	Measuring data	Max. Current at Startup [%]		Motor Startup time [100ms]
1...4	1	0x043C	8	Read	UMC Basic Data	Number of starts		Number of trips
1...4	1	0x043D	8	Read	UMC Timers	Time since power on [s]		
1...4	1	0x043E	8	Read	Detail Errors Part 0	Diagnostic (Fault) Byte 0	Diagnostic (Fault) Byte 1	Diagnostic (Fault) Byte 2
1...4	1	0x043F	8	Read	Detail Errors Part 1			
1...4	1	0x0440	8	Read	Detail Errors Part 2			
1...4	1	0x0441	8	Read	Detail Errors Part 3			
1...4	1	0x0442	8	Read	Detail Warnings Part 0	Diagnostic (Warning) Byte 0	Diagnostic (Warning) Byte 1	Diagnostic (Warning) Byte 2
1...4	1	0x0443	8	Read	Detail Warnings Part 1			
1...4	1	0x0444	8	Read	Detail Warnings Part 2			
1...4	1	0x0445	8	Read	Detail Warnings Part 3			
1...4	1	0x0466	8	Read	I/O Module DX1xx	State of DX1xx DI (Bit 0 = DI0 ... Bit 7 = DI7)	State of DX1xx DO (Bit 0 = DO0 ... Bit 3 = DO 3)	AO0 [%]
1...4	1	0x0467	8	Read	UMC Measuring data 1	PTC [Ohm]		Current Unbalance [%]
1...4	1	0x0468	8	Read	UMC Measuring data 2	Thermal Load [%]		Time To Trip [s]
1...4	1	0x0469	8	Read	UMC Access	Parameter Locked (Bit 0 = true)	Password changed (Bit 0 = true)	
1...4	1	0x046A	8	Write	UMC Password WriteAck.	Write Password		
1...4	1	0x046B	8	Write	UMC Bus Addr. WriteAck.	Write Bus Address		
1...4	1	0x046C	8	Write	Reset Counters	Reset Counter: Bit 0: Operation hours Bit 1: Number starts Bit 2: Number trips + Nu. Therm trips Bit 3: Nu. Therm trips Bit 4: Nu. Emerg. Starts Bit 5: Energy		
1...4	1	0x046D	8	Read	VI15x Part1	U L1L2 [V]		U L2L3 [V]

Profinet

Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
UMC-Version 2nd Pos.	Basic DI: Bit 0: Force loc Bit 1: Stop Bit 2:Voltage Dip Bit 3:Fault 1 Bit 4:Fault 2 Bit 5:Fault 3 Bit 6: Testposition Bit 7: Prep.Em.Start	Basic DI: Bit 0: Fault Reset Bit 1: CEM11	Monitoring status: Bit 0: Fast FWD Bit 1: FWD Bit 2: Stop Bit 3: REV Bit 4: Fast REV Bit 5: Reverse lockout Time running Bit 6: General Fault Bit 7: General Warning	UMC-Version 3rd Pos.
Cyclic Command Byte 3				
Cyclic Analog Word	Cyclic Analog Word 2		Cyclic Analog Word 3	
Cyclic Monitoring Byte 13	Cyclic Monitoring Byte 14	Cyclic Monitoring Byte 15	Cyclic Analog Word 0	
Cyclic Analog Word	Cyclic Analog Word 3		Cyclic Analog Word 4	
Acyclic Analog Word 1	Acyclic Analog Word 2		Acyclic Analog Word 3	
Acyclic Analog Word 1	Acyclic Analog Word 2		Acyclic Analog Word 3	
Current [%]	Absolute Current [10mA]			
Motor Startup time [100ms]				
Number of trips	Number of thermal Overload trips		Number emergency starts	
Time since power on [s]	Motor operating hours [s]			
Diagnostic (Fault) Byte 3	Diagnostic (Fault) Byte 4	Diagnostic (Fault) Byte 5	Diagnostic (Fault) Byte 6	Diagnostic (Fault) Byte 7 (Extended Diagnostic)
Diagnostic (Warning) Byte 3	Diagnostic (Warning) Byte 4	Diagnostic (Warning) Byte 5	Diagnostic (Warning) Byte 6	Diagnostic (Warning) Byte 7 (Extended Diagnostic)
Current Unbalance [%]	Line Frequency [100mHz]		Wrong Phase Sequence (Bit 0 = true)	
Time To Trip [s]	Time To Restart [s]			
	Bus Address			
U L2L3 [V]	U L3L1 [V]		U average L1...L3 [V]	

Profinet

Slot	Subslot	Index (hex)	Length	Access	Title	Byte 0	Byte 1	Byte 2
1...4	1	0x046E	8	Read	VI15x Part2	Power factor [0,001]		Voltage unbalance [0,1%]
1...4	1	0x046F	8	Read	VI15x Part3	Active power [W] (without power scale factor)		
1...4	1	0x0470	8	Read	VI15x Part4	Energy [kWh]		
1...4	1	0x0471	8	Read	UMC Data 1	Permissible Starts	Number of Starts >1	1 Start Possible
1...4	1	0x0472	8	Read	reserved			
1...4	1	0x0473	8	Read	Analog Module 1	AM1 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 CH2 value (Temp in K, voltage/current signals scaled 0..27648)
1...4	1	0x0474	8	Read	Analog Module 2	AM2 CH1 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 CH2 value (Temp in K, voltage/current signals scaled 0..27648)
1...4	1	0x0475	8	Read	Maintenance	Motor stand still hours [s]		
1...4	1	0x0476	8	Read	UMC Data	Current L1 [%]		Current L2 [%]
1...4	1	0x0477	8	Read	UMC Data	Absolute Current L1 [10mA]		
1...4	1	0x0478	8	Read	UMC Data	Absolute Current L3 [10mA]		

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Profinet

Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
THD L1 [0,1%]	THD L2 [0,1%]	THD L3 [0,1%]	V15x Status Bit0: Voltage module ready Bit1: Voltage phase loss Bit2: Voltage freq. out of range Bit3: Voltage DIP detected Bit4: Voltage out of range (ADC setting) Bit 5: Wrong phase sequ.	
Active power [W] (without power scale factor)	Apparent power [VA] (without power scale factor)			
Energy [kWh]				
No Start Possible	Current to earth [%]			
AM1 CH2 value (Temp in K, voltage/current signals scaled	AM1 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM1 temp max value (only when used in temperature mode)	
AM2 CH2 value (Temp in K, voltage/current signals scaled	AM2 CH3 value (Temp in K, voltage/current signals scaled 0..27648)		AM2 temp max value (only when used in temperature mode)	
Motor stand still hours [s]				
Current L2 [%]	Current L3 [%]			
Absolute Current L1 [10mA]	Absolute Current L2 [10mA]			
Absolute Current L3 [10mA]				

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