Command NAME	ASCII command type	ASCII command structure	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
ASCII COMMANDS						
HEART BEAT	ASCII READ COMMAND	#HB<CR> Result: #HB<CR>			ASCII	
	TX	#1,HB<CR>				
	RX	#1,HB<CR>				
Sends an Heartbeat to test the communcation						
GET VERSION	ASCII READ COMMAND	#VERSION<CR> Result: #VERSION:<VersionHi>,<VersionMed>,<VersionLo><CR>			ASCII	
	TX	#1,VERSION<CR>				
	RX	#1,VERSION:1.2.00<CR>				
		Current SW version:1.2.00				
Returns the version number of the module VersionHi: Version number high (1..255) VersionMed: Version number medium (1..255) VersionLo: Version number low (1..255)						
GET TYPE	ASCII READ COMMAND	#TYPE<CR> Result: #TYPE:<Type><CR>			ASCII	
	TX	#1,TYPE<CR>				
	RX	#1,TYPE:RESI-16RO-SIO<CR>				
		Current module type:RESI-16RO-SIO				
Returns the current module type						
GET FEATURES	ASCII READ COMMAND	#FTRS<CR> Result: #FTRS:<Type><CR>			ASCII	
	TX	#1,FTRS<CR>				
	RX	#1,FTRS:RESI-16RO-SIO,16RO<CR>				
		Current module type:RESI-16RO-SIO				
Returns the current module features						
GET OWNER	ASCII READ COMMAND	#OWNER<CR> Result: #OWNER:<Owner><CR>			ASCII	
	TX	#1,OWNER<CR>				
	RX	#1,OWNER:RESI<CR>				
		Current owner:RESI				
Returns the current owner of the module						

GET CREATOR	ASCII READ COMMAND	#CREATOR<CR> Result: #CREATOR:<Creator><CR>	ASCII	
	TX	#1,CREATOR<CR>		
	RX	#1,CREATOR:DI HC SIGL,MSC<CR>		
		Current creator:DI HC SIGL,MSC		
Returns the current creator of the module				
GET COPYRIGHT	ASCII READ COMMAND	#COPYRIGHT<CR> Result: #COPYRIGHT:<Copyright><CR>	ASCII	
	TX	#1,COPYRIGHT<CR>		
	RX	#1,COPYRIGHT:2015-23 BY RESI AND DI HC SIGL,MSC WWW.RESI.CC<CR>		
		Current copyright:2015-23 BY RESI AND DI HC SIGL,MSC WWW.RESI.CC		
Returns the current copyright of the module				
GET SERIAL NUMBER	ASCII READ COMMAND	#SN<CR> Result: #SN:<Serial><CR>	ASCII	
	TX	#1,SN<CR>		
	RX	#1,SN:31003E000A53554637303820<CR>		
		Current serial number:31003E000A53554637303820		
Returns the current serial number of the module				
GET INTERNAL STATUS	ASCII READ COMMAND	#INTSTAT<CR> Result: #INTSTAT:<Status><CR>	ASCII	
	TX	#1,INTSTAT<CR>		
	RX	#1,INTSTAT:I2C1:0,I2C2:0,FRAM:28<CR>		
Returns the device specific internal status				
GET DIP SWITCH	ASCII READ COMMAND	#GDIP<CR> Result: #GDIP:<DIPSwitchDec>,<DIPSwitchHex><CR>	ASCII	
	TX	#1,GDIP<CR>		
	RX	#1,GDIP:65,0x41<CR>		
		Current DIP SWITCH settings:0100.0001		
Returns the current setting of the Dip switches as decimal number and as hexadecimal number. DIPSwitchDec DIPSwitchHex The current value of the DIP switches: Bit 0: DIP Switch 1 (=0:OFF, =1:ON) Bit 1: DIP Switch 2 (=0:OFF, =1:ON) Bit 2: DIP Switch 3 (=0:OFF, =1:ON) Bit 3: DIP Switch 4 (=0:OFF, =1:ON) Bit 4: DIP Switch 5, if available (=0:OFF, =1:ON) Bit 5: DIP Switch 6, if available (=0:OFF, =1:ON) Bit 6: DIP Switch 7, if available (=0:OFF, =1:ON) Bit 7: DIP Switch 8, if available (=0:OFF, =1:ON)				
ASCII COMMANDS				

SET MODBUS ADDRESS	ASCII WRITE COMMAND	#SMBADR:<UNITID><CR> Result: #OK<CR>	ASCII	NO
	UNITID	123		
	TX	#1,SMBADR:123<CR>		
	RX	N/A		
Redefines the unit ID of the module. This change will affect the MODBUS/RTU communication immediately. As a Unit IO you can use the values 0dec to 255dec. HINT: The new settings are activated after a system reboot or power off on cycle!				
SET MODBUS BAUDRATE	ASCII WRITE COMMAND	#SMBBAUD:<BAUD><CR> Result: #OK<CR>	ASCII	NO
	BAUD	128000:128000BD		
	TX	#1,SMBBAUD:128000<CR>		
	RX	N/A		
Sets a new baud rate in the FLASH For ULTRA SLIM IOs RESI-xxx-SIO: This baudrate is only used, if DIP switch mode DIP1=ON+DIP2=ON (BR) (default is 57600bd) For BIG IOs RESI-xxx-SIO: This baudrate is only used, if DIP switch mode DIP7=ON (PARAMETER) (default is 57600bd) The following baudrates are allowed: 300bd, 600bd, 900bd, 1200bd, 2400bd, 4800bd, 9600bd, 19200bd, 38400bd, 57600bd, 115200bd, 128000bd 230400bd, 250000bd, 256000bd HINT: The new setup parameters will be active after a restart of the module.				
SET MODBUS PARITY	ASCII WRITE COMMAND	#SMBPAR:<PARITY><CR> Result: #OK<CR>	ASCII	NO
	PARITY	ODD:ODD PARITY		
	TX	#1,SMBPAR:ODD<CR>		
	RX	N/A		
Sets a new parity for the serial interface. MBParity: NONE: no parity EVEN: even parity ODD: odd parity HINT: The new setup parameters will be active after a restart of the module.				
SET MODBUS STOPS	ASCII WRITE COMMAND	#SMBSTOP:<STOPBIT><CR> Result: #OK<CR>	ASCII	NO
	STOPBIT	TWO:TWO STOPBITS		
	TX	#1,SMBSTOP:TWO<CR>		
	RX	N/A		

Sets a new amount of stop bits for the serial interface.
MBStops
ONE: one stop bit
TWO: two stop bits

HINT: The new setup parameters will be active after a restart of the module.

SET MODBUS PARAMS	ASCII WRITE COMMAND	#SMBPARAMS:<UNITID>,<BAUD>,<PARITY>,<STOPBIT><CR> Result: #OK<CR>	ASCII	NO
	UNITID	3		
	BAUD	115200:115200BD		
	PARITY	EVEN:EVEN PARITY		
	STOPBIT	TWO:TWO STOPBITS		
	TX	#1,SMBPARAMS:3,115200,EVEN,TWO<CR>		
	RX	N/A		

Sets all parameters for serrial interface

GET MODBUS ADDRESS	ASCII READ COMMAND	#GMBADR<CR> Result: #GMBADR:<MBUnitDec>,<MBFLASHDec>,<MBUnitHex>,<MBFLASHHex><CR>	ASCII	
	TX	#1,GMBADR<CR>		
	RX	#1,GMBADR:1,15,0x1,0xF<CR>		
		Current MODBUS unit ID:1,15,0x1,0xF		

Shows the current used MODBUS/RTU or ASCII unit address and shows also the stored unit address in the FLASH memory, which is only used if the DIP switch for the bus address is set to 0.

MBUnitDec,MBUnitHex
The current used MODBUS/RTU unit or ASCII address for communication

MBFLASHDec,MBFLASHHex
The internal stored MODBUS/RTU unit address or ASCII address from the FLASH memory, if the DIP switch DIP3 is OFF.

GET MODBUS BAUDRATE	ASCII READ COMMAND	#GMBBAUD<CR> Result: #GMBBAUD:<BaudRate><CR>	ASCII	
	TX	#1,GMBBAUD<CR>		
	RX	#1,GMBBAUD:115200,0x1C200<CR>		
		Current baudrate:115200,0x1C200		

This is the current configured baud rate in the FLASH
For ULTRA SLIM IOs RESI-xxx-SIO: This baudrate is only used, if DIP switch mode DIP1=ON+DIP2=ON (BR) (default is 57600bd)
For BIG IOs RESI-xxx-SIO: This baudrate is only used, if DIP switch mode DIP7=ON (PARAMETER) (default is 57600bd)
The following baudrates are allowed:
300bd, 600bd, 900bd, 1200bd, 2400bd, 4800bd,
9600bd, 19200bd, 38400bd, 57600bd, 115200bd, 128000bd
230400bd, 250000bd, 256000bd

GET MODBUS PARITY	ASCII READ COMMAND	#GMBPAR<CR> Result: #GMBPAR:<MBParity><CR>	ASCII	
	TX	#1,GMBPAR<CR>		
	RX	#1,GMBPAR:NONE<CR>		

		Current parity:NONE		
Shows the current configured parity of the serial interface. MBParity NONE: no parity EVEN: even parity ODD: odd parity				
GET MODBUS STOP	ASCII READ COMMAND	#GMBSTOP<CR> Result: #GMBSTOP:<MBStop><CR>	ASCII	
	TX	#1,GMBSTOP<CR>		
	RX	#1,GMBPAR:ONE<CR>		
		Current stopbit(s):ONE		
Shows the current configured parity of the serial interface. MBParity NONE: no parity EVEN: even parity ODD: odd parity				
GET MODBUS PARAMS	ASCII READ COMMAND	#GMBPARAMS<CR> Result: #GMBPARAMS:<MBUnitDec>,<MBFLASHDec>,<MBUnitHex>,<MBFLASHHex>, <MBBaudrateDec>,<MBBaudrateHex>,<MBParity>,<MBStops><CR>	ASCII	
	TX	#1,GMBPARAMS<CR>		
	RX	#1,GMBADR:1,0x1,15,0xF,115200,0x1C200,NONE,ONE<CR>		
		Current MODBUS unit ID used:1		
		Current MODBUS unit ID in FLASH:15		
		Current baudrate in FLASH:115200		
		Current parity in FLASH:NONE		
		Current stopbit(s) in FLASH:ONE		
Returns the complete settings for serial interface				
ASCII COMMANDS				
RESET	ASCII WRITE COMMAND	#RST<CR> Result: #OK<CR>	ASCII	NO
	TX	#1,RST<CR>		
	RX	N/A		
Executes a software reset (Reboot) of the module.				
FACTORY RESET	ASCII WRITE COMMAND	#FRST<CR> Result: #OK<CR>	ASCII	NO
	TX	#1,FRST<CR>		
	RX	N/A		
Performs a factory reset of all internal saved parameters				
SET MODBUS WATCHDOG TIMER	ASCII WRITE COMMAND	#SMBWATCHDOG:<WDTIME><CR> Result: #OK<CR>	ASCII	YES

	WDTIME	100		
	TX	#1,SMBWATCHDOG:100<CR>		
	RX	#1,OK<CR>		

Enables or disables the WATCHDOG Timer for the IO module.
WDTIME:
1..65535: Time for Watchdog in 1/100s
=0: Watchdog is deactivated
HINT: The Watchdog is internally handled every 100ms. If the IO module receives no valid frame within this time period, the outputs are set to predefined values!

GET MODBUS WATCHDOG TIMER	ASCII READ COMMAND	#GMBWATCHDOG<CR> Result: #GMBWATCHDOG:<WDTIME><CR>	ASCII	
	TX	#1,GMBWATCHDOG<CR>		
	RX	#1,GMBWATCHDOG:100,0x64<CR>		
		Current watchdog time:100 -> 10,0s		

Shows the actual configured time for the telegram watchdog function of the IO module.
WDTIME:
1..65535: Time for Watchdog in 1/100s
=0: Watchdog is deactivated
HINT: The Watchdog is internally handled every 100ms. If the IO module receives no valid frame within this time period, the outputs are set to predefined values!

CPU PARAMETERS

GET CPU VOLTAGE	ASCII READ COMMAND	#GCPUTEMP<CR> Result: #GCPUTEMP:<CPUTemp><CR>	ASCII	
	TX	#1,GCPUTEMP<CR>		
	RX	#1,GCPUTEMP:38.7842<CR>		
		Current internal temperature of CPU:38.7842°C		

Current internal temperature of CPU in ° Celsius.

GET CPU VOLTAGE	ASCII READ COMMAND	#GCPUVOLT<CR> Result: #GCPUVOLT:<CPUVoltage><CR>	ASCII	
	TX	#1,GCPUVOLT<CR>		
	RX	#1,GCPUVOLT:3.3632<CR>		
		Current supply voltage of CPU:3.3632V		

Current internal supply voltage of CPU in Volt.

GET CPU BACKUP	ASCII READ COMMAND	#GCPUBACK<CR> Result: #GCPUBACK:<CPUBackupVoltage><CR>	ASCII	
	TX	#1,GCPUBACK<CR>		
	RX	#1,GCPUBATT:3.1793<CR>		
		Current backup voltage of CPU:3.1793V		

Current internal backup capacitor voltage of CPU in Volt.

Register NAME	MODBUS Register	Register VALUE	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
CONVERTER STATUS						
DIP SWITCH	3x10100 4x10100 I:10099	65,0x0041 B:00 41			UINT16 R/O	
Returns the current setting of the Dip switches. For ULTRA SLIM IOs The current value of the DIP switches: Bit 0: DIP Switch 1 (=0:OFF, =1:ON) Bit 1: DIP Switch 2 (=0:OFF, =1:ON) Bit 2: DIP Switch 3 (=0:OFF, =1:ON) Bit 3: DIP Switch 4 (=0:OFF, =1:ON) For BIG IOs: The current value of the DIP switches: Bit 0: DIP Switch 1 (=0:OFF, =1:ON) Bit 1: DIP Switch 2 (=0:OFF, =1:ON) Bit 2: DIP Switch 3 (=0:OFF, =1:ON) Bit 3: DIP Switch 4 (=0:OFF, =1:ON) Bit 4: DIP Switch 5 (=0:OFF, =1:ON) Bit 5: DIP Switch 6 (=0:OFF, =1:ON) Bit 6: DIP Switch 7 (=0:OFF, =1:ON) Bit 7: DIP Switch 8 (=0:OFF, =1:ON)						
PRODUCT DATA						
HW_GROUP	3x65201 4x65201 I:65200	16384,0x4000 B:40 00			UINT16 R/O	
This is the group of hardware of the current product						
SW_GROUP	3x65202 4x65202 I:65201	32783,0x800F B:80 0F			UINT16 R/O	
This is the group of software of the current product						
SW_VERSION	3x65203 4x65203 I:65202	4608,0x1200 B:12 00			UINT16 R/O	
		SW VERSION:1.2.0				
This is the current software version of the firmware						
SW_AUTHOR	3x65204 4x65204 I:65203	18771,0x4953 B:49 53			UINT16 R/O	
This is the current software author of the firmware						
MODBUS SETTINGS						
UNIT_ID	3x65222 4x65222 I:65221	1,0x0001 B:00 01			UINT16 R/O	

		UNIT ID:1				
If the host reads this register, the current defined unit ID is returned.						
FLASH UNIT_ID	3x65223 4x65223 I:65222	15,0x000F B:00 0F		27	UINT16 R/W	NO
		UNIT ID:15				
If the host reads this register, the current defined unit ID from the FLASH is returned. This UnitID is used if DIP switch for UnitID is set to 15						
HINT:This settings will be active after you repower or reset your device !!						
BAUD_RATE	3x65224 4x65224 I:65223	115200,0x0001C200 B:00 01 C2 00	57600	57600	UINT32 R/W	NO
		115200Bd		ENTER BAUD RATE		
This is the current configured baud rate in the FLASH For ULTRA SLIM IOs RESI-xxx-SIO: This baudrate is only used, if DIP switch mode DIP1=ON+DIP2=ON (BR) (default is 57600bd) For BIG IOs RESI-xxx-SIO: This baudrate is only used, if DIP switch mode DIP7=ON (PARAMETER) (default is 57600bd)						
Valid baud rates are: 300bd, 600bd, 900bd, 1200bd, 2400bd, 4800bd, 9600bd, 19200bd, 38400bd, 57600bd, 115200bd, 128000bd 230400bd, 250000bd, 256000bd						
HINT:This settings will be active after you repower or reset your device !!						
PARITY	3x65226 4x65226 I:65225	0,0x0000 B:00 00		1:EVEN PARITY	UINT16 R/W	NO
		NO PARITY		SELECT PARITY		
If the register is read out, the currently set parity of the serial interface is returned. Writing a value to this register will change the new parity in FLASH. This will only take effect after a restart of the module. This can be triggered by writing to the RESET SYSTEM register. Parity values are 0: no parity 1: even parity 2: odd parity						
STOP BITS	3x65227 4x65227 I:65226	1,0x0001 B:00 01		2:TWO STOPBITS	UINT16 R/W	NO
		ONE STOPBIT		SELECT STOPBITS		
If the register is read out, the currently set number of stop bits of the serial interface is returned. Writing a value to this register will change the new number of stop bits in the FLASH. This will only take effect after a restart of the module. This can be triggered by writing to the RESET SYSTEM register. Values for stop bits are 1: one stop bit 2: two stop bits						
MODBUS TIMING	3x65228 4x65228 I:65227	0,0x0000 B:00 00		10	UINT16 R/W	NO

		Actual timing:0ms				
If the host reads this register, the current defined timing for MODBUS telegrams is returned. This timing is a time in ms which extends the standard 1.5 character timeout between two consecutive bytes on the serial line. If you write a new value to this register, the new settings are stored into the internal FLASH. Reboot the device to activate the new settings.						
MODBUS WATCHDOG TIME	3x65229 4x65229 I:65228	0,0x0000 B:00 00		50	UINT16 R/W	YES
		Actual watchdog time in 1/100s:0 -> 0,0s				
Writing a value onto this register defines a new time for the internal communcation watchdog timer. The value is a timespan in 1/100s. =0: The communcation watchdog is disabled =1..65535: Communcation watchdog will be trigegred after x 1/100s pause on communcation line In case of an communcation watchdog, the module sets all outputs to the states defined in the configuration output registers Reading this registe will return the current stored time from the internal FLASH						
CPU DATA						
SERIAL1	3x65521 4x65521 I:65520	49,0x0031 B:00 31			UINT16 R/O	
Serial number of module as 96 bit unsigned integer number						
SERIAL2	3x65522 4x65522 I:65521	62,0x003E B:00 3E			UINT16 R/O	
SERIAL3	3x65523 4x65523 I:65522	21258,0x530A B:53 0A			UINT16 R/O	
SERIAL4	3x65524 4x65524 I:65523	18005,0x4655 B:46 55			UINT16 R/O	
SERIAL5	3x65525 4x65525 I:65524	12343,0x3037 B:30 37			UINT16 R/O	
SERIAL6	3x65526 4x65526 I:65525	8248,0x2038 B:20 38			UINT16 R/O	
		SERIAL:31003E000A53554637303820				
Serial number of module as 96 bit unsigned integer number						
CPU TEMPERATURE	3x65527 4x65527 I:65526	3865,0x0F19 B:0F 19			UINT16 R/O	
		Current internal temperature of CPU:38,7°C				
Current internal temperature of CPU in ° Celsius multiplied by 10.						
CPU VOLTAGE	3x65528 4x65528 I:65527	336,0x0150 B:01 50			UINT16 R/O	
		Current supply voltage of CPU:3,36V				

Current internal supply voltage of CPU in Volt multiplied by 1000.						
CPU BACKUP VOLTAGE	3x65529 4x65529 I:65528	317,0x013D B:01 3D			UINT16 R/O	
		Current backup voltage of CPU:3,17V				
Current internal backup capacitor voltage of CPU in Volt multiplied by 1000.						
CONVERTER STATUS						
CONVERTER STATUS	3x65534 4x65534 I:65533	0,0x0000 B:00 00			UINT16 R/O	
Current status of the converter						
FACTORY RESET	3x65535 4x65535 I:65534	0,0x0000 B:00 00		1:PERFORM FACTORY RESET	UINT16 R/W	NO
Performs a factory reset of all internal saved parameters						
SOFTWARE RESET						
RESET	1x65536 2x65536 I:65535	0,0x00 B:00		N/A:NO CHANGE	BIT R/W	NO
Performs a software reset, whenever 1 is written to this register. If the host writes to this register 1, the module executes a soft reset (reboot).						
RESET	3x65536 4x65535 I:65535	0,0x0000 B:00 00		N/A:NO CHANGE	UINT16 R/W	NO
Performs a software reset, whenever 1 is written to this register. If the host writes to this register 1, the module executes a soft reset (reboot).						

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
ASCII COMMANDS						
AIOIX CONFIGURATION						
SET IO TYPES	ASCII WRITE COMMAND	#SIOTYPS:<IOTyp1>,<IOTyp2>,<IOTyp3>,<IOTyp4><CR> Result: #OK<CR>			ASCII	YES
	IOTyp1	VO[0-10V]				
	IOTyp2	VI[0-10V]				
	IOTyp3	VO[0-10V]				
	IOTyp4	VI[0-10V]				
	TX	#1,SIOTYPS:VO[0-10V],VI[0-10V],VO[0-10V],VI[0-10V]<CR>				
	RX	#255,OK<CR>				
This command defines for all 4 universal IOs a new type of IO: IOTypx stands for the new type: UU: Unused – high impedance VI[0-10V]: VOLTAGE INPUT for 0 to 10V Signals VI[2-10V]: VOLTAGE INPUT for 2 to 10V Signals VO[0-10V]: VOLTAGE OUTPUT for 0 to 10V Signals VO[2-10V]: VOLTAGE OUTPUT for 2 to 10V Signals] CI[0-20mA;LP]: CURRENT INPUT for 0 to 20mA Signals – loop powered CI[4-20mA;LP]: CURRENT INPUT for 4 to 20mA Signals – loop powered CI[0-20mA;EP]: CURRENT INPUT for 0 to 20mA Signals – external powered CI[4-20mA;EP]: CURRENT INPUT for 4 to 20mA Signals – external powered CO[0-20mA]: CURRENT OUTPUT for 0 to 20mA Signals CO[4-20mA]: CURRENT OUTPUT for 4 to 20mA Signals RTDI[OHM]: RTD SENSOR INPUT for Ohm measurement between 0 and 1MOhm DI[24V;L]: DIGITAL INPUT for 24Vdc – logic, threshold 12V DI[24V;LP]: DIGITAL INPUT for 24Vdc – loop powered HINT: The last IO type is automatically stored in FRAM and will be used after a system restart.						
SET IO TYPx	ASCII WRITE COMMAND	#SIOTYP<IONR>:<IOTypx><CR> Result: #OK<CR>			ASCII	YES
	IONR	1				
	IOTypx	VO[0-10V]				
	TX	#1,SIOTYP1:VO[0-10V]<CR>				
	RX	#255,OK<CR>				

This command defines for the universal IO IONR a new type of IO:
IOTypx stands for the new type:
UU: Unused – high impedance
VI[0-10V]: VOLTAGE INPUT for 0 to 10V Signals
VI[2-10V]: VOLTAGE INPUT for 2 to 10V Signals
VO[0-10V]: VOLTAGE OUTPUT for 0 to 10V Signals
VO[2-10V]: VOLTAGE OUTPUT for 2 to 10V Signals]
CI[0-20mA;LP]: CURRENT INPUT for 0 to 20mA Signals – loop powered
CI[4-20mA;LP]: CURRENT INPUT for 4 to 20mA Signals – loop powered
CI[0-20mA;EP]: CURRENT INPUT for 0 to 20mA Signals – external powered
CI[4-20mA;EP]: CURRENT INPUT for 4 to 20mA Signals – external powered
CO[0-20mA]: CURRENT OUTPUT for 0 to 20mA Signals
CO[4-20mA]: CURRENT OUTPUT for 4 to 20mA Signals
RTDI[OHM]: RTD SENSOR INPUT for Ohm measurement between 0 and 1MOhm
DI[24V;L]: DIGITAL INPUT for 24Vdc – logic, threshold 12V
DI[24V;LP]: DIGITAL INPUT for 24Vdc – loop powered

HINT: The last IO type is automatically stored in FRAM and will be used after a system restart.

GET IO TYPES	ASCII READ COMMAND	#GIOTYPS<CR> Result: #GIOTYPS:<IOTyp1Txt>,<IOTyp2Txt>,...,<IOTyp4Txt><CR>	ASCII	
	TX	#1,GIOTYPS<CR>		
	RX	#1,GIOTYPS:UU,UU,UU,UU,UU,UU,UU,UU<CR>		
		Actual type of IO1:UU		
		Actual type of IO2:UU		
		Actual type of IO3:UU		
		Actual type of IO4:UU		

This command shows for all 4 universal IOs the current selected type of IO:
IOTypx stands for the types:
UU: Unused – high impedance
VI[0-10V]: VOLTAGE INPUT for 0 to 10V Signals
VI[2-10V]: VOLTAGE INPUT for 2 to 10V Signals
VO[0-10V]: VOLTAGE OUTPUT for 0 to 10V Signals
VO[2-10V]: VOLTAGE OUTPUT for 2 to 10V Signals]
CI[0-20mA;LP]: CURRENT INPUT for 0 to 20mA Signals – loop powered
CI[4-20mA;LP]: CURRENT INPUT for 4 to 20mA Signals – loop powered
CI[0-20mA;EP]: CURRENT INPUT for 0 to 20mA Signals – external powered
CI[4-20mA;EP]: CURRENT INPUT for 4 to 20mA Signals – external powered
CO[0-20mA]: CURRENT OUTPUT for 0 to 20mA Signals
CO[4-20mA]: CURRENT OUTPUT for 4 to 20mA Signals
RTDI[OHM]: RTD SENSOR INPUT for Ohm measurement between 0 and 1MOhm
DI[24V;L]: DIGITAL INPUT for 24Vdc – logic, threshold 12V
DI[24V;LP]: DIGITAL INPUT for 24Vdc – loop powered

GET IO TYPx	ASCII READ COMMAND	#GIOTYP<IONR><CR> Result: #GIOTYP<IONR>:<IOTypxTxt><CR>	ASCII	
	IONR	1		
	TX	#1,GIOTYP1<CR>		
	RX	#1,GIOTYP1:UU<CR>		

		Actual type of IO1:UU		
This command shows for the universal IO IONR the current selected type: IOTypx stands for the types: UU: Unused – high impedance VI[0-10V]: VOLTAGE INPUT for 0 to 10V Signals VI[2-10V]: VOLTAGE INPUT for 2 to 10V Signals VO[0-10V]: VOLTAGE OUTPUT for 0 to 10V Signals VO[2-10V]: VOLTAGE OUTPUT for 2 to 10V Signals] CI[0-20mA;LP]: CURRENT INPUT for 0 to 20mA Signals – loop powered CI[4-20mA;LP]: CURRENT INPUT for 4 to 20mA Signals – loop powered CI[0-20mA;EP]: CURRENT INPUT for 0 to 20mA Signals – external powered CI[4-20mA;EP]: CURRENT INPUT for 4 to 20mA Signals – external powered CO[0-20mA]: CURRENT OUTPUT for 0 to 20mA Signals CO[4-20mA]: CURRENT OUTPUT for 4 to 20mA Signals RTDI[OHM]: RTD SENSOR INPUT for Ohm measurement between 0 and 1MOhm DI[24V;L]: DIGITAL INPUT for 24Vdc – logic, threshold 12V DI[24V;LP]: DIGITAL INPUT for 24Vdc – loop powered				
VOLTAGE INPUTS				
GET VOLTAGE INPUTS IN VOLT	ASCII READ COMMAND	#GVISV<CR> Result: #GVISV:<IOVolt1Dbl>,<IOVolt2Dbl>,...,<IOVolt4Dbl><CR>	ASCII	
	TX	#1,GVISV<CR>		
	RX	#1,GVISV:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual voltage on IO1:999.99V		
		Actual voltage on IO2:999.99V		
		Actual voltage on IO3:999.99V		
		Actual voltage on IO4:999.99V		
This command shows for all VOLTAGE INPUT IOs the current measurement in Volt. The measurement range is 0.0 to 10.00V. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE INPUT IN VOLT	ASCII READ COMMAND	#GVIV<IONR><CR> Result: #GVIV<IONR>:<IOxVoltDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GVIV1<CR>		
	RX	#1,GVIV1:999.99<CR>		
		Actual voltage on IO1:999.99V		
This command shows for the VOLTAGE INPUT IO <IONR> the current measurement in Volt. The measurement range is 0.0 to 10.00V. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE INPUTS IN PERCENT	ASCII READ COMMAND	#GVISP<CR> Result: #GVISP:<IOPercent1Dbl>,<IOPercent2Dbl>,...,<IOPercent4Dbl><CR>	ASCII	
	TX	#1,GVISP<CR>		
	RX	#1,GVISP:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual percentage on IO1:999.99%		
		Actual percentage on IO2:999.99%		

		Actual percentage on IO3:999.99%		
		Actual percentage on IO4:999.99%		
This command shows for all VOLTAGE INPUT IOs the current measurement in Percent. The measurement range is 0.0V -> 0.0% to 10.00V -> 100.0%. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE INPUT IN PERCENT	ASCII READ COMMAND	#GVIP<IONR><CR> Result: #GVIP<IONR>:<IOxPercentDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GVIP1<CR>		
	RX	#1,GVIP1:999.99<CR>		
		Actual percentage on IO1:999.99%		
This command shows for VOLTAGE INPUT IO <IONR> the current measurement in Percent. The measurement range is 0.0V -> 0.0% to 10.00V -> 100.0%. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
VOLTAGE DIGITAL INPUTS				
GET VOLTAGE DIGITAL INPUTS	ASCII READ COMMAND	#GVDIS<CR> Result: #GVDIS:<IODI1Dec>,<IODI2Decl>,...,<IODI4Dec><CR>	ASCII	
	TX	#1,GVDIS<CR>		
	RX	#1,GVDIS:X,X,X,X,X,X,X,X<CR>		
		Actual voltage digital input state on IO1:X		
		Actual voltage digital input state on IO2:X		
		Actual voltage digital input state on IO3:X		
		Actual voltage digital input state on IO4:X		
This command shows for all VOLTAGE DIGITAL INPUT IOs the current state. The digital input can have the values 0 and 1. All IOs with a different usage type will return X to indicate, that no measurement is done.				
GET VOLTAGE DIGITAL INPUT	ASCII READ COMMAND	#GVDI<IONR><CR> Result: #GVDI<IONR>:<IOxDIDec><CR>	ASCII	
	IONR	1		
	TX	#1,GVDI1<CR>		
	RX	#1,GVDI1:X<CR>		
		Actual voltage digital input state on IO1:X		
This command shows for VOLTAGE DIGITAL INPUT IO <IONR> the current state. The digital input can have the values 0 and 1. All IOs with a different usage type will return X to indicate, that no measurement is done.				
GET VOLTAGE DIGITAL INPUTS CURRENT	ASCII READ COMMAND	#GVDISC<CR> Result: #GVDISC:<IOmA1Dbl>,<IOmA2Dbl>,...,<IOmA4Dbl><CR>	ASCII	
	TX	#1,GVDISC<CR>		
	RX	#1,GVDISC:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual input current on IO1:999.99mA		
		Actual input current on IO2:999.99mA		
		Actual input current on IO3:999.99mA		

		Actual input current on IO4:999.99mA		
This command shows for all VOLTAGE DIGITAL INPUT IOs the actual current in mA. The measurement range is 0.0mA to 35mA. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE DIGITAL INPUT CURRENT	ASCII READ COMMAND	#GVDIC<IONR><CR> Result: #GVDIC<IONR>:<IOxmADbl><CR>	ASCII	
	IONR	1		
	TX	#1,GVDIC1<CR>		
	RX	#1,GVDIC1:999.99<CR>		
		Actual input current on IO1:999.99mA		
This command shows for VOLTAGE DIGITAL INPUT IO <IONR> the actual current in mA. The measurement range is 0.0mA to 35mA. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
VOLTAGE OUTPUTS				
SET VOLTAGE OUTPUTS IN VOLT	ASCII WRITE COMMAND	#SVOSV:<IO1VoltDbl>,<IO2VoltDbl>,<IO3VoltDbl>,<IO4VoltDbl><CR> Result: #OK<CR>	ASCII	YES
	IO1Volt	10,000		
	IO2Volt	7,500		
	IO3Volt	5,500		
	IO4Volt	2,500		
	TX	#1,SVOSV:10,7.5,5.5,2.5<CR>		
	RX	#255,OK<CR>		
This command sets for all VOLTAGE OUTPUT IOs the current output voltage in Volt. The range is 0.0 to 11.00V.				
SET VOLTAGE OUTPUTx IN VOLT	ASCII WRITE COMMAND	#SVOV<IONR>:<IOxVoltDbl><CR> Result: #OK<CR>	ASCII	NO
	IONR	1		
	IOxVolt	2,000		
	TX	#1,SVOV1:2<CR>		
	RX	N/A		
This command sets for VOLTAGE OUTPUT IO <IONR> the current output voltage in Volt. The range is 0.0 to 11.00V.				
SET VOLTAGE OUTPUTS IN PERCENT	ASCII WRITE COMMAND	#SVOSP:<IO1PercentDbl>,<IO2PercentDbl>,<IO3PercentDbl>,<IO4PercentDbl><CR> Result: #OK<CR>	ASCII	NO
	IO1Percent	110,000		
	IO2Percent	100,000		
	IO3Percent	75,000		
	IO4Percent	50,000		
	TX	#1,SVOSP:110,100,75,50<CR>		
	RX	N/A		
This command sets for all VOLTAGE OUTPUT IOs the current output voltage in Percent. The range is 0.0V -> 0.00% to 11.00V -> 110.00%.				

SET VOLTAGE OUTPUTx IN PERCENT	ASCII WRITE COMMAND	#SVOP<IONR>:<IOxPercentDbl><CR> Result: #OK<CR>	ASCII	NO
	IONR	1		
	IOxPercent	2,000		
	TX	#1,SVOP1:2<CR>		
	RX	N/A		
This command sets for VOLTAGE OUTPUT IO <IONR> the current output voltage in Percent. The range is 0.0V -> 0.00% to 11.00V -> 110.00%.				
GET VOLTAGE OUTPUTS IN VOLT	ASCII READ COMMAND	#GVOSV<CR> Result: #GVOSV:<IO1VoltDbl>,<IO2VoltDbl>,...,<IO4VoltDbl><CR>	ASCII	
	TX	#1,GVOSV<CR>		
	RX	#1,GVOSV:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual voltage output on IO1:999.99V		
		Actual voltage output on IO2:999.99V		
		Actual voltage output on IO3:999.99V		
		Actual voltage output on IO4:999.99V		
This command shows for all VOLTAGE OUTPUT IOs the current output voltage in Volt. The range is 0.0V to 11.00V. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE OUTPUT IN VOLT	ASCII READ COMMAND	#GVOV<IONR><CR> Result: #GVOV<IONR>:<IOxVoltDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GVOV1<CR>		
	RX	#1,GVOV1:999.99<CR>		
		Actual voltage output on IO1:999.99V		
This command shows for VOLTAGE OUTPUT IO <IONR> the current output voltage in Volt. The range is 0.0V to 11.00V. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE OUTPUTS IN PERCENT	ASCII READ COMMAND	#GVOSP<CR> Result: #GVOSP:<IO1PercentDbl>,<IO2PercentDbl>,...,<IO4PercentDbl><CR>	ASCII	
	TX	#1,GVOSP<CR>		
	RX	#1,GVOSP:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual percentage voltage output on IO1:999.99%		
		Actual percentage voltage output on IO2:999.99%		
		Actual percentage voltage output on IO3:999.99%		
		Actual percentage voltage output on IO4:999.99%		
This command shows for all VOLTAGE OUTPUT IOs the current output voltage in Percent. The range is 0.0V -> 0.00% to 11.00V -> 110.00% (10.00V -> 100.00%). All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE OUTPUT IN PERCENT	ASCII READ COMMAND	#GVOP<IONR><CR> Result: #GVOP<IONR>:<IOxPercentDbl><CR>	ASCII	

	IONR	1		
	TX	#1,GVOP1<CR>		
	RX	#1,GVOP1:999.99<CR>		
		Actual percentage voltage output on IO1:999.99%		
This command shows for VOLTAGE OUTPUT IO <IONR> the current output voltage in Percent. The range is 0.0V -> 0.00% to 11.00V -> 110.00% (10.00V -> 100.00%). All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE OUTPUTS CURRENT	ASCII READ COMMAND	#GVOSC<CR> Result: #GVOSC:<IOmA1Dbl>,<IOmA2Dbl>,...,<IOmA4Dbl><CR>	ASCII	
	TX	#1,GVOSC<CR>		
	RX	#1,GVOSC:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual output current on IO1:999.99mA		
		Actual output current on IO2:999.99mA		
		Actual output current on IO3:999.99mA		
		Actual output current on IO4:999.99mA		
This command shows for all VOLTAGE OUTPUT IOs the actual current in mA. The measurement range is 0.0mA to 35mA. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET VOLTAGE OUTPUT CURRENT	ASCII READ COMMAND	#GVOC<IONR><CR> Result: #GVOC<IONR>:<IOxmADbl><CR>	ASCII	
	IONR	1		
	TX	#1,GVOC1<CR>		
	RX	#1,GVOC1:999.99<CR>		
		Actual output current on IO1:999.99mA		
This command shows for VOLTAGE OUTPUT IO <IONR> the actual current in mA. The measurement range is 0.0mA to 35mA. All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
CURRENT INPUTS				
GET CURRENT INPUTS IN mA	ASCII READ COMMAND	#GCISMA<CR> Result: #GCISMA:<IO1mADbl>,<IO2mADbl>,...,<IO4mADbl><CR>	ASCII	
	TX	#1,GCISMA<CR>		
	RX	#1,GCISMA:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual current input on IO1:999.99mA		
		Actual current input on IO2:999.99mA		
		Actual current input on IO3:999.99mA		
		Actual current input on IO4:999.99mA		
This command shows for all CURRENT INPUT IOs the current measured input current in mA. The range is 0.00 to 25.00mA All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT INPUT IN mA	ASCII READ COMMAND	#GCIMA<IONR><CR> Result: #GCIMA<IONR>:<IOxmADbl><CR>	ASCII	
	IONR	1		

	TX	#1,GCIMA1<CR>		
	RX	#1,GCIMA1:999.99<CR>		
		Actual current input on IO1:999.99mA		
This command shows for CURRENT INPUT IO <IONR> the current measured input current in mA. The range is 0.00 to 25.00mA All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT INPUTS IN PERCENT	ASCII READ COMMAND	#GCISP<CR> Result: #GCISP:<IO1PercentDbl>,<IO2PercentDbl>,...,<IO4PercentDbl><CR>	ASCII	
	TX	#1,GCISP<CR>		
	RX	#1,GCISP:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual percentage for current input on IO1:999.99%		
		Actual percentage for current input on IO2:999.99%		
		Actual percentage for current input on IO3:999.99%		
		Actual percentage for current input on IO4:999.99%		
This command shows for all CURRENT INPUT IOs the current measured input current in Percent. The range is 0.00mA -> 0.00% to 25.00mA -> 125.00% (20mA=100%) All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT INPUT IN PERCENT	ASCII READ COMMAND	#GCIP<IONR><CR> Result: #GCIP<IONR>:<IOxPercentDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GCIP1<CR>		
	RX	#1,GCIP1:999.99<CR>		
		Actual percentage for current input on IO1:999.99%		
This command shows for CURRENT INPUT IO <IONR> the current measured input current in Percent. The range is 0.00mA -> 0.00% to 25.00mA -> 125.00% (20mA=100%) All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
CURRENT OUTPUTS				
SET CURRENT OUTPUTS IN mA	ASCII WRITE COMMAND	#SCOSMA:<IO1mADbl>,<IO2mADbl>,<IO3mADbl>,<IO4mADbl><CR> Result: #OK<CR>	ASCII	NO
	IO1mA	2,000		
	IO2mA	4,000		
	IO3mA	6,000		
	IO4mA	25,000		
	TX	#1,SCOSMA:2,4,6,25<CR>		
	RX	N/A		
This command sets for all CURRENT OUTPUT IOs the actual output current in mA. The range is 0.00mA to 25.00mA				
SET CURRENT OUTPUTx IN mA	ASCII WRITE COMMAND	#SCOMA<IONR>:<IOxmADbl><CR> Result: #OK<CR>	ASCII	NO
	IONR	1		
	IOxVolt	2,000		
	TX	#1,SCOMA1:<IOxmADbl><CR>		

	RX	N/A		
This command sets for CURRENT OUTPUT <IONR> IOs the actual output current in mA. The range is 0.00mA to 25.00mA				
SET CURRENT OUTPUTS IN PERCENT	ASCII WRITE COMMAND	#SCOSP:<IO1PercentDbl>,<IO2PercentDbl>,<IO3PercentDbl>,<IO4PercentDbl><CR> Result: #OK<CR>	ASCII	NO
	IO1Percent	125,000		
	IO2Percent	100,000		
	IO3Percent	75,000		
	IO4Percent	50,000		
	TX	#1,SCOSP:125,100,75,50<CR>		
	RX	N/A		
This command sets for all CURRENT OUTPUT IOs the new output current in Percent. The range is 0.00mA -> 0.00% to 25.00mA -> 125.00% (20mA -> 100.00%)				
SET CURRENT OUTPUTx IN PERCENT	ASCII WRITE COMMAND	#SCOP<IONR>:<IOxPercentDbl><CR> Result: #OK<CR>	ASCII	NO
	IONR	1		
	IOxPercent	,000		
	TX	#1,SCOP1:0<CR>		
	RX	N/A		
This command sets for CURRENT OUTPUT IO <IONR> the new output current in Percent. The range is 0.00mA -> 0.00% to 25.00mA -> 125.00% (20mA -> 100.00%)				
GET CURRENT OUTPUTS IN mA	ASCII READ COMMAND	#GCOSMA<CR> Result: #GCOSMA:<IO1mADbl>,<IO2mADbl>,...,<IO4mADbl><CR>	ASCII	
	TX	#1,GCOSMA<CR>		
	RX	#1,GCOSMA:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual value of current output on IO1:999.99mA		
		Actual value of current output on IO2:999.99mA		
		Actual value of current output on IO3:999.99mA		
		Actual value of current output on IO4:999.99mA		
This command shows for all CURRENT OUTPUT IOs the actual output current in mA. The range is 0.00mA to 25.00mA All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT OUTPUT IN mA	ASCII READ COMMAND	#GCOMA<IONR><CR> Result: #GCOMA<IONR>:<IOxmADbl><CR>	ASCII	
	IONR	1		
	TX	#1,GCOMA1<CR>		
	RX	#1,GCOMA1:999.99<CR>		
		Actual value of current output on IO1:999.99mA		
This command shows for CURRENT OUTPUT IO <IONR> the actual output current in mA. The range is 0.00mA to 25.00mA All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				

GET CURRENT OUTPUTS IN PERCENT	ASCII READ COMMAND	#GCOSP<CR> Result: #GCOSP:<IO1PercentDbl>,<IO2PercentDbl>,...,<IO4PercentDbl><CR>	ASCII	
	TX	#1,GCOSP<CR>		
	RX	#1,GCOSP:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Actual percentage of current output on IO1:999.99%		
		Actual percentage of current output on IO2:999.99%		
		Actual percentage of current output on IO3:999.99%		
		Actual percentage of current output on IO4:999.99%		
This command shows for all CURRENT OUTPUT IOs the actual output current in Percent. The range is 0.00mA -> 0.00% to 25.00mA -> 125.00% (20mA -> 100.00%) All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT OUTPUT IN PERCENT	ASCII READ COMMAND	#GCOP<IONR><CR> Result: #GCOP<IONR>:<IOxPercentDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GCOP1<CR>		
	RX	#1,GCOP1:999.99<CR>		
		Actual percentage of current output on IO1:999.99%		
This command shows for CURRENT OUTPUT IO <IONR> the actual output current in Percent. The range is 0.00mA -> 0.00% to 25.00mA -> 125.00% (20mA -> 100.00%) All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT OUTPUTS VOLTAGE	ASCII READ COMMAND	#GCOSV<CR> Result: #GCOSV:<IO1VoltsDbl>,<IO2VoltsDbl>,...,<IO4VoltsDbl><CR>	ASCII	
	TX	#1,GCOSV<CR>		
	RX	#1,GCOSV:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>		
		Measured voltage of current output on IO1:999.99V		
		Measured voltage of current output on IO2:999.99V		
		Measured voltage of current output on IO3:999.99V		
		Measured voltage of current output on IO4:999.99V		
This command shows for all CURRENT OUTPUT IOs the actual output voltage in Volt. The range is 0-10V All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
GET CURRENT OUTPUT VOLTAGE	ASCII READ COMMAND	#GCOV<IONR><CR> Result: #GCOV<IONR>:<IOxVoltDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GCOV1<CR>		
	RX	#1,GCOV1:999.99<CR>		
		Measured voltage of current output on IO1:999.99V		
This command shows for CURRENT OUTPUT IO <IONR> the actual output voltage in Volt. The range is 0-10V All IOs with a different usage type will return 999.99 to indicate, that no measurement is done.				
RTD INPUTS OHM				

GET RTD INPUTS IN OHM	ASCII READ COMMAND	#GRTDISOHM<CR> Result: #GRTDISOHM:<IO1OhmDbl>,<IO2OhmDbl>,...,<IO4OhmDbl><CR>	ASCII	
	TX	#1,GRTDISOHM<CR>		
	RX	#1,GRTDISOHM:99999999.999,99999999.999,99999999.999,99999999.999,99999999.999,99999999.999,99999999.999,99999999.999<CR>		
		Actual measured RTD input on IO1:99999999.999Ohm		
		Actual measured RTD input on IO2:99999999.999Ohm		
		Actual measured RTD input on IO3:99999999.999Ohm		
		Actual measured RTD input on IO4:99999999.999Ohm		
This command shows for RTD INPUT IOs the actual measured RTD value in Ohm. The range is 0.000Ohm to 1000000.00Ohm All IOs with a different usage type will return 99999999.999 to indicate, that no measurement is done.				
GET RTD INPUT IN OHM	ASCII READ COMMAND	#GRTDIOHM<IONR><CR> Result: #GRTDIOHM<IONR>:<IOxOhmDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDIOHM1<CR>		
	RX	#1,GRTDIOHM1:99999999.999<CR>		
		Actual measured RTD input on IO1:99999999.999Ohm		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value in Ohm. The range is 0.000Ohm to 1000000.00Ohm All IOs with a different usage type will return 99999999.999 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS IN OHM	ASCII READ COMMAND	#GAVGRTDISOHM<CR> Result: #GAVGRTDISOHM:<IO1OhmDbl>,<IO2OhmDbl>,...,<IO4OhmDbl><CR>	ASCII	
	TX	#1,GAVGRTDISOHM<CR>		
	RX	#1,GAVGRTDISOHM:99999999.999,99999999.999,99999999.999,99999999.999,99999999.999,99999999.999,99999999.999,99999999.999<CR>		
		Average measured RTD input on IO1:99999999.999Ohm		
		Average measured RTD input on IO2:99999999.999Ohm		
		Average measured RTD input on IO3:99999999.999Ohm		
		Average measured RTD input on IO4:99999999.999Ohm		
This command shows for RTD INPUT IOs the average measured RTD value in Ohm. The range is 0.000Ohm to 1000000.00Ohm All IOs with a different usage type will return 99999999.999 to indicate, that no measurement is done.				
GET AVG RTD INPUT IN OHM	ASCII READ COMMAND	#GAVGRTDIOHM<IONR><CR> Result: #GAVGRTDIOHM<IONR>:<IOxOhmDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDIOHM1<CR>		
	RX	#1,GAVGRTDIOHM1:99999999.999<CR>		
		Average measured RTD input on IO1:99999999.999Ohm		
This command shows for RTD INPUT IO <IONR> the average measured RTD value in Ohm. The range is 0.000Ohm to 1000000.00Ohm All IOs with a different usage type will return 99999999.999 to indicate, that no measurement is done.				

RTD INPUTS PT100 CELSIUS				
GET RTD INPUTS AS PT100 CELSIUS	ASCII READ COMMAND	#GRTDISPT100C<CR> Result: #GRTDISPT100C:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISPT100C<CR>		
	RX	#1,GRTDISPT100C:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as PT100 on IO1:9999.990°C		
		Actual measured RTD input as PT100 on IO2:9999.990°C		
		Actual measured RTD input as PT100 on IO3:9999.990°C		
		Actual measured RTD input as PT100 on IO4:9999.990°C		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT100 sensor in °Celisus. -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS PT100 CELSIUS	ASCII READ COMMAND	#GRTDIPT100C<IONR><CR> Result: #GRTDIPT100C<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDIPT100C1<CR>		
	RX	#1,GRTDIPT100C1:9999.990<CR>		
		Actual measured RTD input as PT100 on IO1:9999.990°C		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT100 sensor in °Celisus -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS PT100 CELSIUS	ASCII READ COMMAND	#GAVGRTDISPT100C<CR> Result: #GAVGRTDISPT100C:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISPT100C<CR>		
	RX	#1,GAVGRTDISPT100C:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as PT100 on IO1:9999.990°C		
		Average measured RTD input as PT100 on IO2:9999.990°C		
		Average measured RTD input as PT100 on IO3:9999.990°C		
		Average measured RTD input as PT100 on IO4:9999.990°C		
This command shows for RTD INPUT IOs the average measured RTD value linearized as PT100 sensor in °Celisus. -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS PT100 CELSIUS	ASCII READ COMMAND	#GAVGRTDIPT100C<IONR><CR> Result: #GAVGRTDIPT100C<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDIPT100C1<CR>		
	RX	#1,GAVGRTDIPT100C1:9999.990<CR>		
		Average measured RTD input as PT100 on IO1:9999.990°C		

This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT100 sensor in °Celisus -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS PT1000 CELSIUS				
GET RTD INPUTS AS PT1000 CELSIUS	ASCII READ COMMAND	#GRTDISPT1000C<CR> Result: #GRTDISPT1000C:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISPT1000C<CR>		
	RX	#1,GRTDISPT1000C:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as PT1000 on IO1:9999.990°C		
		Actual measured RTD input as PT1000 on IO2:9999.990°C		
		Actual measured RTD input as PT1000 on IO3:9999.990°C		
		Actual measured RTD input as PT1000 on IO4:9999.990°C		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT100 sensor in °Celisus. -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS PT1000 CELSIUS	ASCII READ COMMAND	#GRTDIPT1000C<IONR><CR> Result: #GRTDIPT1000C<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDIPT1000C1<CR>		
	RX	#1,GRTDIPT1000C1:9999.990<CR>		
		Actual measured RTD input as PT1000 on IO1:9999.990°C		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT100 sensor in °Celisus -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS PT1000 CELSIUS	ASCII READ COMMAND	#GAVGRTDISPT1000C<CR> Result: #GAVGRTDISPT1000C:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISPT1000C<CR>		
	RX	#1,GAVGRTDISPT1000C:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as PT1000 on IO1:9999.990°C		
		Average measured RTD input as PT1000 on IO2:9999.990°C		
		Average measured RTD input as PT1000 on IO3:9999.990°C		
		Average measured RTD input as PT1000 on IO4:9999.990°C		
This command shows for RTD INPUT IOs the average measured RTD value linearized as PT100 sensor in °Celisus. -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS PT1000 CELSIUS	ASCII READ COMMAND	#GAVGRTDIPT1000C<IONR><CR> Result: #GAVGRTDIPT1000C<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		

	TX	#1,GAVGRTDIPT1000C1<CR>		
	RX	#1,GAVGRTDIPT1000C1:9999.990<CR>		
		Average measured RTD input as PT1000 on IO1:9999.990°C		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT100 sensor in °Celisus -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS NI1000-DIN43760 CELSIUS				
GET RTD INPUTS AS NI1000 DIN43760 CELSIUS	ASCII READ COMMAND	#GRTDISNI1000DIN43760C<CR> Result: #GRTDISNI1000DIN43760C:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISNI1000DIN43760C<CR>		
	RX	#1,GRTDISNI1000DIN43760C:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as NI1000-DIN43760 on IO1:9999.990°C		
		Actual measured RTD input as NI1000-DIN43760 on IO2:9999.990°C		
		Actual measured RTD input as NI1000-DIN43760 on IO3:9999.990°C		
		Actual measured RTD input as NI1000-DIN43760 on IO4:9999.990°C		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT100 sensor in °Celisus. -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS NI1000 DIN43760 CELSIUS	ASCII READ COMMAND	#GRTDINI1000DIN43760C<IONR><CR> Result: #GRTDINI1000DIN43760C<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDINI1000DIN43760C1<CR>		
	RX	#1,GRTDINI1000DIN43760C1:9999.990<CR>		
		Actual measured RTD input as NI1000-DIN43760 on IO1:9999.990°C		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT100 sensor in °Celisus -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS NI1000 DIN43760 CELSIUS	ASCII READ COMMAND	#GAVGRTDISNI1000DIN43760C<CR> Result: #GAVGRTDISNI1000DIN43760C:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISNI1000DIN43760C<CR>		
	RX	#1,GAVGRTDISNI1000DIN43760C:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as NI1000-DIN43760 on IO1:9999.990°C		
		Average measured RTD input as NI1000-DIN43760 on IO2:9999.990°C		
		Average measured RTD input as NI1000-DIN43760 on IO3:9999.990°C		
		Average measured RTD input as NI1000-DIN43760 on IO4:9999.990°C		
This command shows for RTD INPUT IOs the average measured RTD value linearized as PT100 sensor in °Celisus. -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				

GET AVG RTD INPUT AS NI1000 DIN43760 CELSIUS	ASCII READ COMMAND	#GAVGRTDINI1000DIN43760C<IONR><CR> Result: #GAVGRTDINI1000DIN43760C<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDINI1000DIN43760C1<CR>		
	RX	#1,GAVGRTDINI1000DIN43760C1:9999.990<CR>		
		Average measured RTD input as NI1000-DIN43760 on IO1:9999.990°C		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT100 sensor in °Celisus -999.990: Temperature is lower than 50°C +999.990: Temperature is higher than 130°C All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS PT100 KELVIN				
GET RTD INPUTS AS PT100 KELVIN	ASCII READ COMMAND	#GRTDISPT100K<CR> Result: #GRTDISPT100K:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISPT100K<CR>		
	RX	#1,GRTDISPT100K:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as PT100 on IO1:9999.990°K		
		Actual measured RTD input as PT100 on IO2:9999.990°K		
		Actual measured RTD input as PT100 on IO3:9999.990°K		
		Actual measured RTD input as PT100 on IO4:9999.990°K		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT100 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS PT100 KELVIN	ASCII READ COMMAND	#GRTDIPT100K<IONR><CR> Result: #GRTDIPT100K<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDIPT100K1<CR>		
	RX	#1,GRTDIPT100K1:9999.990<CR>		
		Actual measured RTD input as PT100 on IO1:9999.990°K		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT100 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS PT100 KELVIN	ASCII READ COMMAND	#GAVGRTDISPT100K<CR> Result: #GAVGRTDISPT100K:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISPT100K<CR>		
	RX	#1,GAVGRTDISPT100K:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as PT100 on IO1:9999.990°K		
		Average measured RTD input as PT100 on IO2:9999.990°K		
		Average measured RTD input as PT100 on IO3:9999.990°K		
		Average measured RTD input as PT100 on IO4:9999.990°K		

This command shows for RTD INPUT IOs the average measured RTD value linearized as PT100 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS PT100 KELVIN	ASCII READ COMMAND	#GAVGRTDIPT100K<IONR><CR> Result: #GAVGRTDIPT100K<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDIPT100K1<CR>		
	RX	#1,GAVGRTDIPT100K1:9999.990<CR>		
		Average measured RTD input as PT100 on IO1:9999.990°K		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT100 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS PT1000 KELVIN				
GET RTD INPUTS AS PT1000 KELVIN	ASCII READ COMMAND	#GRTDISPT1000K<CR> Result: #GRTDISPT1000K:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISPT1000K<CR>		
	RX	#1,GRTDISPT1000K:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as PT1000 on IO1:9999.990°K		
		Actual measured RTD input as PT1000 on IO2:9999.990°K		
		Actual measured RTD input as PT1000 on IO3:9999.990°K		
		Actual measured RTD input as PT1000 on IO4:9999.990°K		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT1000 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS PT1000 KELVIN	ASCII READ COMMAND	#GRTDIPT1000K<IONR><CR> Result: #GRTDIPT1000K<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDIPT1000K1<CR>		
	RX	#1,GRTDIPT1000K1:9999.990<CR>		
		Actual measured RTD input as PT1000 on IO1:9999.990°K		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT1000 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS PT1000 KELVIN	ASCII READ COMMAND	#GAVGRTDISPT1000K<CR> Result: #GAVGRTDISPT1000K:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISPT1000K<CR>		
	RX	#1,GAVGRTDISPT1000K:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		

		Average measured RTD input as PT1000 on IO1:9999.990°K		
		Average measured RTD input as PT1000 on IO2:9999.990°K		
		Average measured RTD input as PT1000 on IO3:9999.990°K		
		Average measured RTD input as PT1000 on IO4:9999.990°K		
This command shows for RTD INPUT IOs the average measured RTD value linearized as PT1000 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS PT1000 KELVIN	ASCII READ COMMAND	#GAVGRTDIPT1000K<IONR><CR> Result: #GAVGRTDIPT1000K<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDIPT1000K1<CR>		
	RX	#1,GAVGRTDIPT1000K1:9999.990<CR>		
		Average measured RTD input as PT1000 on IO1:9999.990°K		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT1000 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS NI1000-DIN43760 KELVIN				
GET RTD INPUTS AS NI1000 DIN43760 KELVIN	ASCII READ COMMAND	#GRTDISNI1000DIN43760K<CR> Result: #GRTDISNI1000DIN43760K:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISNI1000DIN43760K<CR>		
	RX	#1,GRTDISNI1000DIN43760K:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as NI1000-DIN43760 on IO1:9999.990°K		
		Actual measured RTD input as NI1000-DIN43760 on IO2:9999.990°K		
		Actual measured RTD input as NI1000-DIN43760 on IO3:9999.990°K		
		Actual measured RTD input as NI1000-DIN43760 on IO4:9999.990°K		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as NI1000 DIN43760 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS NI1000 DIN43760 KELVIN	ASCII READ COMMAND	#GRTDINI1000DIN43760K<IONR><CR> Result: #GRTDINI1000DIN43760K<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDINI1000DIN43760K1<CR>		
	RX	#1,GRTDINI1000DIN43760K1:9999.990<CR>		
		Actual measured RTD input as NI1000-DIN43760 on IO1:9999.990°K		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as NI1000 DIN43760 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				

GET AVERAGE RTD INPUTS AS NI1000 DIN43760 KELVIN	ASCII READ COMMAND	#GAVGRTDISNI1000DIN43760K<CR> Result: #GAVGRTDISNI1000DIN43760K:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISNI1000DIN43760K<CR>		
	RX	#1,GAVGRTDISNI1000DIN43760K:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as NI1000-DIN43760 on IO1:9999.990°K		
		Average measured RTD input as NI1000-DIN43760 on IO2:9999.990°K		
		Average measured RTD input as NI1000-DIN43760 on IO3:9999.990°K		
		Average measured RTD input as NI1000-DIN43760 on IO4:9999.990°K		
This command shows for RTD INPUT IOs the average measured RTD value linearized as NI1000 DIN43760 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS NI1000 DIN43760 KELVIN	ASCII READ COMMAND	#GAVGRTDINI1000DIN43760K<IONR><CR> Result: #GAVGRTDINI1000DIN43760K<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDINI1000DIN43760K1<CR>		
	RX	#1,GAVGRTDINI1000DIN43760K1:9999.990<CR>		
		Average measured RTD input as NI1000-DIN43760 on IO1:9999.990°K		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as NI1000 DIN43760 sensor in °Kelvin -999.990: Temperature is lower than 223.15°K +999.990: Temperature is higher than 403.15°K All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS PT100 FAHRENHEIT				
GET RTD INPUTS AS PT100 FAHRENHEIT	ASCII READ COMMAND	#GRTDISPT100F<CR> Result: #GRTDISPT100F:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISPT100F<CR>		
	RX	#1,GRTDISPT100F:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as PT100 on IO1:9999.990°F		
		Actual measured RTD input as PT100 on IO2:9999.990°F		
		Actual measured RTD input as PT100 on IO3:9999.990°F		
		Actual measured RTD input as PT100 on IO4:9999.990°F		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT100 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS PT100 FAHRENHEIT	ASCII READ COMMAND	#GRTDIPT100F<IONR><CR> Result: #GRTDIPT100F<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDIPT100F1<CR>		
	RX	#1,GRTDIPT100F1:9999.990<CR>		
		Actual measured RTD input as PT100 on IO1:9999.990°F		

This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT100 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS PT100 FAHRENHEIT	ASCII READ COMMAND	#GAVGRTDISPT100F<CR> Result: #GAVGRTDISPT100F:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISPT100F<CR>		
	RX	#1,GAVGRTDISPT100F:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as PT100 on IO1:9999.990°F		
		Average measured RTD input as PT100 on IO2:9999.990°F		
		Average measured RTD input as PT100 on IO3:9999.990°F		
		Average measured RTD input as PT100 on IO4:9999.990°F		
This command shows for RTD INPUT IOs the average measured RTD value linearized as PT100 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS PT100 FAHRENHEIT	ASCII READ COMMAND	#GAVGRTDIPT100F<IONR><CR> Result: #GAVGRTDIPT100F<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDIPT100F1<CR>		
	RX	#1,GAVGRTDIPT100F1:9999.990<CR>		
		Average measured RTD input as PT100 on IO1:9999.990°F		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT100 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS PT1000 FAHRENHEIT				
GET RTD INPUTS AS PT1000 FAHRENHEIT	ASCII READ COMMAND	#GRTDISPT1000F<CR> Result: #GRTDISPT1000F:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISPT1000F<CR>		
	RX	#1,GRTDISPT1000F:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as PT1000 on IO1:9999.990°F		
		Actual measured RTD input as PT1000 on IO2:9999.990°F		
		Actual measured RTD input as PT1000 on IO3:9999.990°F		
		Actual measured RTD input as PT1000 on IO4:9999.990°F		
This command shows for RTD INPUT IOs the actual measured RTD value linearized as PT1000 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS PT1000 FAHRENHEIT	ASCII READ COMMAND	#GRTDIPT1000F<IONR><CR> Result: #GRTDIPT1000F<IONR>:<IOxDbl><CR>	ASCII	

	IONR	1		
	TX	#1,GRTDIPT1000F1<CR>		
	RX	#1,GRTDIPT1000F1:9999.990<CR>		
		Actual measured RTD input as PT1000 on IO1:9999.990°F		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as PT1000 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS PT1000 FAHRENHEIT	ASCII READ COMMAND	#GAVGRTDISPT1000F<CR> Result: #GAVGRTDISPT1000F:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISPT1000F<CR>		
	RX	#1,GAVGRTDISPT1000F:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as PT1000 on IO1:9999.990°F		
		Average measured RTD input as PT1000 on IO2:9999.990°F		
		Average measured RTD input as PT1000 on IO3:9999.990°F		
		Average measured RTD input as PT1000 on IO4:9999.990°F		
This command shows for RTD INPUT IOs the average measured RTD value linearized as PT1000 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS PT1000 FAHRENHEIT	ASCII READ COMMAND	#GAVGRTDIPT1000F<IONR><CR> Result: #GAVGRTDIPT1000F<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDIPT1000F1<CR>		
	RX	#1,GAVGRTDIPT1000F1:9999.990<CR>		
		Average measured RTD input as PT1000 on IO1:9999.990°F		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as PT1000 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
RTD INPUTS NI1000-DIN43760 FAHRENHEIT				
GET RTD INPUTS AS NI1000 DIN43760 FAHRENHEIT	ASCII READ COMMAND	#GRTDISNI1000DIN43760F<CR> Result: #GRTDISNI1000DIN43760F:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GRTDISNI1000DIN43760F<CR>		
	RX	#1,GRTDISNI1000DIN43760F:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Actual measured RTD input as NI1000-DIN43760 on IO1:9999.990°F		
		Actual measured RTD input as NI1000-DIN43760 on IO2:9999.990°F		
		Actual measured RTD input as NI1000-DIN43760 on IO3:9999.990°F		
		Actual measured RTD input as NI1000-DIN43760 on IO4:9999.990°F		

This command shows for RTD INPUT IOs the actual measured RTD value linearized as NI1000 DIN43760 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET RTD INPUT AS NI1000 DIN43760 FARENEHEIT	ASCII READ COMMAND	#GRTDINI1000DIN43760F<IONR><CR> Result: #GRTDINI1000DIN43760F<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GRTDINI1000DIN43760F1<CR>		
	RX	#1,GRTDINI1000DIN43760F1:9999.990<CR>		
		Actual measured RTD input as NI1000-DIN43760 on IO1:9999.990°F		
This command shows for RTD INPUT IO <IONR> the actual measured RTD value linearized as NI1000 DIN43760 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVERAGE RTD INPUTS AS NI1000 DIN43760 FARENEHEIT	ASCII READ COMMAND	#GAVGRTDISNI1000DIN43760F<CR> Result: #GAVGRTDISNI1000DIN43760F:<RTD1Dbl>,<RTD2Dbl>,...,<RTD4Dbl><CR>	ASCII	
	TX	#1,GAVGRTDISNI1000DIN43760F<CR>		
	RX	#1,GAVGRTDISNI1000DIN43760F:9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990,9999.990<CR>		
		Average measured RTD input as NI1000-DIN43760 on IO1:9999.990°F		
		Average measured RTD input as NI1000-DIN43760 on IO2:9999.990°F		
		Average measured RTD input as NI1000-DIN43760 on IO3:9999.990°F		
		Average measured RTD input as NI1000-DIN43760 on IO4:9999.990°F		
This command shows for RTD INPUT IOs the average measured RTD value linearized as NI1000 DIN43760 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				
GET AVG RTD INPUT AS NI1000 DIN43760 FARENEHEIT	ASCII READ COMMAND	#GAVGRTDINI1000DIN43760F<IONR><CR> Result: #GAVGRTDINI1000DIN43760F<IONR>:<IOxDbl><CR>	ASCII	
	IONR	1		
	TX	#1,GAVGRTDINI1000DIN43760F1<CR>		
	RX	#1,GAVGRTDINI1000DIN43760F1:9999.990<CR>		
		Average measured RTD input as NI1000-DIN43760 on IO1:9999.990°F		
This command shows for RTD INPUT IO <IONR> the average measured RTD value linearized as NI1000 DIN43760 sensor in °Fahrenheit -999.990: Temperature is lower than -58°F +999.990: Temperature is higher than 266°F All IOs with a different usage type will return 9999.990 to indicate, that no measurement is done.				

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
ASCII COMMANDS						
INTER PROCESSOR COMMUNICATION						
AIOX IS ONLINE	ASCII READ COMMAND	#G16AIOXISONLINE<CR> Result: #G16AIOXISONLINE:<YesNo><CR>			ASCII	
	TX	#1,G16AIOXISONLINE<CR>				
	RX	#1,G16AIOXISONLINE:YES<CR>				
		Actual communication state co-processor to AIOX processor:YES				
This command returns the actual state of the serial communication between the ARM co-processor and the additional processor for the AIOX. YES: Currently the communication is fine NO: There is a mayor problem/hardware fault between the two processors						
CHIP COMMUNICATION						
ARE CHIPS ONLINE	ASCII READ COMMAND	#ARECHIPSONLINE<CR> Result: #ARECHIPSONLINE:<Chip1IsOnline><CR>			ASCII	
	TX	#1,ARECHIPSONLINE<CR>				
	RX	#1,ARECHIPSONLINE:1,1<CR>				
		Actual state of CHIP1:1				
This command shows the current SPI communication status with each chip. =0: Currently there is a SPI error in the communication and the chip is offline =1: The SPI communication with the chip is ok						
IS CHIPx ONLINE	ASCII READ COMMAND	#ISCHIPONLINE<CHIPNR><CR> Result: #ISCHIPONLINE<CHIPNR>:<ChipxIsOnline><CR>			ASCII	
	CHIPNR	1				
	TX	#1,ISCHIPONLINE1<CR>				
	RX	#1,ISCHIPONLINE1:1<CR>				
		Actual state of CHIP1:1				
This command shows the current SPI communication status with chip <CHIPNR>. =0: Currently there is a SPI error in the communication and the chip is offline =1: The SPI communication with the chip is ok						
GET ALL SPI ERRORS	ASCII READ COMMAND	#GASPIERRS<CR> Result: #GASPIERRS:<SPI1ErrDec>,<SPI2ErrDec>,<SPI1ErrHex>,<SPI2ErrHex><CR>			ASCII	
	TX	#1,GASPIERRS<CR>				
	RX	#1,GASPIERRS:0,0,0x0,0x0<CR>				
		Actual SPI errors of CHIP1:0				
This command shows the acutal SPI errors since power up for every chip						

GET SPI ERROR	ASCII READ COMMAND	#GSPIERR<CHIPNR><CR> Result: #GSPIERR<CHIPNR>:<SPIxErrDec>,<SPIxErrHex><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GSPIERR1<CR>		
	RX	#1,GSPIERR1:0,0x0<CR>		
		Actual SPI errors of CHIP1:0		
This command shows the acutal SPI errors since power up for chip <CHIPNR>				
GET CHIP STATEMACHINES	ASCII READ COMMAND	#GCHIPSMS<CR> Result: #GCHIPSMS:<Chip1StateMachine><CR>	ASCII	
	TX	#1,GCHIPSMS<CR>		
	RX	#1,GCHIPSMS:11010,12090<CR>		
		Actual state of CHIP1:11010		
This command shows the acutal state of the internal communication state machine for all chips				
GET CHIP STATEMACHINE	ASCII READ COMMAND	#GCHIPSM<CHIPNR><CR> Result: #GCHIPSM<CHIPNR>:<ChipxStateMachine><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GCHIPSM1<CR>		
	RX	#1,GCHIPSM1:11010<CR>		
		Actual state of CHIP1:11010		
This command shows the acutal state of the internal communication state machine for chip <CHIPNR>				
RESET CHIP STATEMACHINE	ASCII WRITE COMMAND	#RCHIPSM<CHIPNR><CR> Result: #OK<CR>	ASCII	YES
	CHIPNR	1		
	TX	#1,RCHIPSM1<CR>		
	RX	N/A		
This command restarts the state machine for chip <CHIPNR>. The affected chip will be resetted & initialized completely				
CHIP STATUS				
GET ALL LIVE STATES	ASCII READ COMMAND	#GALSTATES<CR> Result: #GALSTATE:<Chip1LiveStateDec>,<Chip1LiveStateHex><CR>	ASCII	
	TX	#1,GALSTATES<CR>		
	RX	#1,GALSTATES:27648,28672,0x6C00,0x7000<CR>		
		Actual live state of CHIP1:27648,28672		

Returns the actual chip status of all chips.
Each result bit stands for a different state:
Bit 0: VI_ERR_CURR_A: Status of channel A:Voltage or current error detected on Channel A. This bit is interpreted differently depending on which of the following IO function selected:
Voltage output: short-circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current output: open circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current input, loop powered: short-circuit error. A short to ground is detected
Current input, externally powered: short-circuit error. A current source >25 mA is detected
Bit 1: VI_ERR_CURR_B: Status of voltage input B. Same like VI_ERR_CURR_A
Bit 2: VI_ERR_CURR_C: Status of voltage input C. Same like VI_ERR_CURR_A
Bit 3: VI_ERR_CURR_D: Status of voltage input D. Same like VI_ERR_CURR_A
Bit 4: HI_TEMP_STATUS: If the die temperature is typically at or above 115°C, the HI_TEMP_STATUS bit is asserted
Bit 5: CHARGE_PUMP_STATUS: Charge pump error detected.
Bit 6: ALDO5V_STATUS: ALDO5V Power Supply Monitor Error. This bit is asserted when the ALDO5V pin falls below 4.05 V. Usually ~5V.
Bit 7: AVDD_STATUS: AVDD Power Supply Monitor Error. This bit is asserted when the AVDD pin falls below 9.26 V. Usually ~17V.
Bit 8: DVCC_STATUS: DVCC Power Supply Monitor Error. This bit is asserted when the DVCC pin falls below 1.93 V. Usually ~3.3V.
Bit 9: ALDO1V8_STATUS: ALDO1V8 Power Supply Monitor Error. This bit is asserted when the ALDO1V8 pin falls below 1.35 V. Usually ~1.8V.
Bit 10-12: ADC_CH_CURR: Current converted channel of the ADC (0:A, 1:B, 2:C, 3:D, 4:Diagnostic 0, 5:Diagnostic 1, 6:Diagnostic 2, 7:Diagnostic 3)
Bit 13: ADC_BUSY: ADC busy status bit.
Bit 14: ADC_DATA_RDY:ADC data ready. The ADC_DATA_RDY bit asserts when a conversion cycle has completed. The bit stays asserted until a user writes 1 to clear the bit. In single conversion mode, the ADC_RDY pin follows the ADC_DATA_RDY bit and only deasserts when the ADC_DATA_RDY bit is cleared. In continuous conversion mode, the ADC_RDY pin returns high after 24 µs.
Bit 15: RESERVED: Reserved

GET LIVE STATE	ASCII READ COMMAND	#GLSTATE<CHIPNR><CR> Result: #GLSTATE<CHIPNR>:<ChipxLiveStateDec>,<ChipxLiveStateHex><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GLSTATE1<CR>		
	RX	#1,GLSTATE1:27648,0x6C00<CR>		
		Actual live state of CHIP1:27648,0x6C00		
		Live state bit 0: VI_ERR_CURR_A:0		
		Live state bit 1: VI_ERR_CURR_B:0		
		Live state bit 2: VI_ERR_CURR_C:0		
		Live state bit 3: VI_ERR_CURR_D:0		
		Live state bit 4: HI_TEMP_STATUS:0		
		Live state bit 5: CHARGE_PUMP_STATUS:0		
		Live state bit 6: ALDO5V_STATUS:0		
		Live state bit 7: AVDD_STATUS:0		
		Live state bit 8: DVCC_STATUS:0		
		Live state bit 9: ALDO1V8_STATUS:0		
		Live state bit 10-12: ADC_CH_CURR:3		
		Live state bit 13: ADC_BUSY:1		
		Live state bit 14: ADC_DATA_RDY:0		
		Live state bit 15: RESERVED:0		

Returns the actual chip status of chip <CHIPNR>
Each result bit stands for a different state:
Bit 0: VI_ERR_CURR_A: Status of channel A:Voltage or current error detected on Channel A. This bit is interpreted differently depending on which of the following IO function selected:
Voltage output: short-circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current output: open circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current input, loop powered: short-circuit error. A short to ground is detected
Current input, externally powered: short-circuit error. A current source >25 mA is detected
Bit 1: VI_ERR_CURR_B: Status of voltage input B. Same like VI_ERR_CURR_A
Bit 2: VI_ERR_CURR_C: Status of voltage input C. Same like VI_ERR_CURR_A
Bit 3: VI_ERR_CURR_D: Status of voltage input D. Same like VI_ERR_CURR_A
Bit 4: HI_TEMP_STATUS: If the die temperature is typically at or above 115°C, the HI_TEMP_STATUS bit is asserted
Bit 5: CHARGE_PUMP_STATUS: Charge pump error detected.
Bit 6: ALDO5V_STATUS: ALDO5V Power Supply Monitor Error. This bit is asserted when the ALDO5V pin falls below 4.05 V. Usually ~5V.
Bit 7: AVDD_STATUS: AVDD Power Supply Monitor Error. This bit is asserted when the AVDD pin falls below 9.26 V. Usually ~17V.
Bit 8: DVCC_STATUS: DVCC Power Supply Monitor Error. This bit is asserted when the DVCC pin falls below 1.93 V. Usually ~3.3V.
Bit 9: ALDO1V8_STATUS: ALDO1V8 Power Supply Monitor Error. This bit is asserted when the ALDO1V8 pin falls below 1.35 V. Usually ~1.8V.
Bit 10-12: ADC_CH_CURR: Current converted channel of the ADC (0:A, 1:B, 2:C, 3:D, 4:Diagnostic 0, 5:Diagnostic 1, 6:Diagnostic 2, 7:Diagnostic 3)
Bit 13: ADC_BUSY: ADC busy status bit.
Bit 14: ADC_DATA_RDY:ADC data ready. The ADC_DATA_RDY bit asserts when a conversion cycle has completed. The bit stays asserted until a user writes 1 to clear the bit. In single conversion mode, the ADC_RDY pin follows the ADC_DATA_RDY bit and only deasserts when the ADC_DATA_RDY bit is cleared. In continuous conversion mode, the ADC_RDY pin returns high after 24 µs.
Bit 15: RESERVED: Reserved

GET ALL ALERT STATES	ASCII READ COMMAND	#GAASTATES<CR> Result: #GAASTATES:<Chip1AlertStateDec>,<Chip1AlertStateHex><CR>	ASCII	
	TX	#1,GAASTATES<CR>		
	RX	#1,GAASTATES:33792,33792,0x8400,0x8400<CR>		
		Actual alert state of CHIP1:33792,33792		

Returns the actual alert states for all chips.
Each result bit stands for a different state:
Bit 0: VI_ERR_CURR_A: Status of channel A:Voltage or current error detected on Channel A. This bit is interpreted differently depending on which of the following IO function selected:
Voltage output: short-circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current output: open circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current input, loop powered: short-circuit error. A short to ground is detected
Current input, externally powered: short-circuit error. A current source >25 mA is detected
Bit 1: VI_ERR_CURR_B: Status of voltage input B. Same like VI_ERR_CURR_A
Bit 2: VI_ERR_CURR_C: Status of voltage input C. Same like VI_ERR_CURR_A
Bit 3: VI_ERR_CURR_D: Status of voltage input D. Same like VI_ERR_CURR_A
Bit 4: HI_TEMP_STATUS: If the die temperature is typically at or above 115°C, the HI_TEMP_STATUS bit is asserted
Bit 5: CHARGE_PUMP_STATUS: Charge pump error detected.
Bit 6: ALDO5V_STATUS: ALDO5V Power Supply Monitor Error. This bit is asserted when the ALDO5V pin falls below 4.05 V. Usually ~5V.
Bit 7: AVDD_STATUS: AVDD Power Supply Monitor Error. This bit is asserted when the AVDD pin falls below 9.26 V. Usually ~17V.
Bit 8: DVCC_STATUS: DVCC Power Supply Monitor Error. This bit is asserted when the DVCC pin falls below 1.93 V. Usually ~3.3V.
Bit 9: ALDO1V8_STATUS: ALDO1V8 Power Supply Monitor Error. This bit is asserted when the ALDO1V8 pin falls below 1.35 V. Usually ~1.8V.
Bit 10: ADC_CONV_ERR: ADC Conversion Error. ADC results may be outside the selected measurement range.
Bit 11: ADC_SAT_ERR: ADC Saturation Error. ADC may be outside the user selected measurement range.
Bit 12: SPI_SCLK_CNT_ERR: SPI SCLK count error detected. This bit is asserted if an SPI command is applied but 32 SCLKs are not provided.
Bit 13: SPI_CRC_ERR: SPI CRC error detected. This bit is asserted if an invalid CRC is received.
Bit 14: CAL_MEM_ERR: Calibration Memory Error. This flag asserts under the following two conditions: When a calibration memory CRC error or an uncorrectable error correcting code (ECC) error is detected on the calibration memory upload. It is not possible to clear this bit if there is a CRC error or uncorrectable ECC error. It is recommended to reset the device and check the supplies in this situation. When there is an attempted SPI access to a register before the calibration memory refresh is complete. Do not address the device until the calibration memory is refreshed. Writing 1 to this bit clears the flag, if the flag is asserted due to this condition.
Bit 15: RESET_OCCURRED: Reset occurred. This bit is asserted after a reset event, which asserts the ALERT pin after the reset. Write a 1 to this bit to clear the flag. Note that a mask bit is not provided for this bit.

GET ALERT STATE	ASCII READ COMMAND	#GASTATE<CHIPNR><CR> Result: #GASTATE<CHIPNR>:<ChipxAlertState><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GASTATE1<CR>		
	RX	#1,GASTATE1:33792,0x8400<CR>		
		Actual alert state of CHIP1:33792,0x8400		
		Alert state bit 0: VI_ERR_A:0		
		Alert state bit 1: VI_ERR_B:0		
		Alert state bit 2: VI_ERR_C:0		
		Alert state bit 3: VI_ERR_D:0		
		Alert state bit 4: HI_TEMP_ERR:0		
		Alert state bit 5: CHARGE_PUMP_ERR:0		
		Alert state bit 6: ALDO5V_ERR:0		
		Alert state bit 7: AVDD_ERR:0		
		Alert state bit 8: DVCC_ERR:0		
		Alert state bit 9: ALDO1V8_ERR:0		
		Alert state bit 10: ADC_CONV_ERR:1		
		Alert state bit 11: ADC_SAT_ERR:0		
		Alert state bit 12: SPI_SCLK_CNT_ERR:0		
		Alert state bit 13: SPI_CRC_ERR:0		
		Alert state bit 14: CAL_MEM_ERR:0		
		Alert state bit 15: RESET OCCURED:0		

Returns the actual alert states for chip <CHIPNR>.
Each result bit stands for a different state:
Bit 0: VI_ERR_CURR_A: Status of channel A:Voltage or current error detected on Channel A. This bit is interpreted differently depending on which of the following IO function selected:
Voltage output: short-circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current output: open circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current input, loop powered: short-circuit error. A short to ground is detected
Current input, externally powered: short-circuit error. A current source >25 mA is detected
Bit 1: VI_ERR_CURR_B: Status of voltage input B. Same like VI_ERR_CURR_A
Bit 2: VI_ERR_CURR_C: Status of voltage input C. Same like VI_ERR_CURR_A
Bit 3: VI_ERR_CURR_D: Status of voltage input D. Same like VI_ERR_CURR_A
Bit 4: HI_TEMP_STATUS: If the die temperature is typically at or above 115°C, the HI_TEMP_STATUS bit is asserted
Bit 5: CHARGE_PUMP_STATUS: Charge pump error detected.
Bit 6: ALDO5V_STATUS: ALDO5V Power Supply Monitor Error. This bit is asserted when the ALDO5V pin falls below 4.05 V. Usually ~5V.
Bit 7: AVDD_STATUS: AVDD Power Supply Monitor Error. This bit is asserted when the AVDD pin falls below 9.26 V. Usually ~17V.
Bit 8: DVCC_STATUS: DVCC Power Supply Monitor Error. This bit is asserted when the DVCC pin falls below 1.93 V. Usually ~3.3V.
Bit 9: ALDO1V8_STATUS: ALDO1V8 Power Supply Monitor Error. This bit is asserted when the ALDO1V8 pin falls below 1.35 V. Usually ~1.8V.
Bit 10: ADC_CONV_ERR: ADC Conversion Error. ADC results may be outside the selected measurement range.
Bit 11: ADC_SAT_ERR: ADC Saturation Error. ADC may be outside the user selected measurement range.
Bit 12: SPI_SCLK_CNT_ERR: SPI SCLK count error detected. This bit is asserted if an SPI command is applied but 32 SCLKs are not provided.
Bit 13: SPI_CRC_ERR: SPI CRC error detected. This bit is asserted if an invalid CRC is received.
Bit 14: CAL_MEM_ERR: Calibration Memory Error. This flag asserts under the following two conditions: When a calibration memory CRC error or an uncorrectable error correcting code (ECC) error is detected on the calibration memory upload. It is not possible to clear this bit if there is a CRC error or uncorrectable ECC error. It is recommended to reset the device and check the supplies in this situation. When there is an attempted SPI access to a register before the calibration memory refresh is complete. Do not address the device until the calibration memory is refreshed. Writing 1 to this bit clears the flag, if the flag is asserted due to this condition.
Bit 15: RESET_OCCURRED: Reset occurred. This bit is asserted after a reset event, which asserts the ALERT pin after the reset. Write a 1 to this bit to clear the flag. Note that a mask bit is not provided for this bit.

CLEAR ALERT STATE	ASCII WRITE COMMAND	#CALERTS<CHIPNR>:<AlertState><CR> Result: #OK<CR>		ASCII	YES
	CHIPNR	1			
	Bit 0	1:RESET FLAG	0:VI_ERR_A		
	Bit 1	1:RESET FLAG	1:VI_ERR_B		
	Bit 2	1:RESET FLAG	2:VI_ERR_C		
	Bit 3	1:RESET FLAG	3:VI_ERR_D		
	Bit 4	1:RESET FLAG	4:HI_TEMP_ERR		
	Bit 5	1:RESET FLAG	5:CHARGE_PUMP_ERR		
	Bit 6	1:RESET FLAG	6:ALDO5V_ERR		
	Bit 7	1:RESET FLAG	7:AVDD_ERR		
	Bit 8	1:RESET FLAG	8:DVCC_ERR		
	Bit 9	1:RESET FLAG	9:ALDO1V8_ERR		
	Bit 10	1:RESET FLAG	10:ADC_CONV_ERR		
	Bit 11	1:RESET FLAG	11:ADC_SAT_ERR		
	Bit 12	1:RESET FLAG	12:SPI_SCLK_ERR		
	Bit 13	1:RESET FLAG	13:SPI_CRC_ERR		
	Bit 14	1:RESET FLAG	14:CAL_MEM_ERR		
	Bit 15	1:RESET FLAG	15:RESET_OCCURED		
	TX	#1,CALERTS1:65535<CR>			
	RX	N/A			
With this command you can reset individual alert bits in the alert status register					
CHIP TEMPERATURES					
GET CHIP TEMPERATURES	ASCII READ COMMAND	#GCHIPTEMPS<CR> Result: #GCHIPTEMPS:<Chip1TempDbl><CR>		ASCII	
	TX	#1,GCHIPTEMPS<CR>			
	RX	#1,GCHIPTEMPS:44.02,44.92<CR>			
		Actual temperature of CHIP1:44.02°C			
This command returns for every AIOX chip the actual chip temperature in °C					
GET CHIP TEMPERATURE	ASCII READ COMMAND	#GCHIPTEMP<CHIPNR><CR> Result: #GCHIPTEMP<CHIPNR>:<ChipxTempDbl><CR>		ASCII	
	CHIPNR	1			
	TX	#1,GCHIPTEMP1<CR>			
	RX	#1,GCHIPTEMP1:44.02<CR>			
		Actual temperature of CHIP1:44.02°C			
This command returns for AIOX chip <CHIPNR> the actual chip temperature in °C					
AVERAGE CHIP TEMPERATURES					
GET AVERAGE CHIP TEMPERATURES	ASCII READ COMMAND	#GAVGCHIPTEMPS<CR> Result: #GAVGCHIPTEMPS:<Chip1TempDbl><CR>		ASCII	

	TX	#1,GAVGCHIPTEMPS<CR>		
	RX	#1,GAVGCHIPTEMPS:44.03,44.95<CR>		
		Average temperature of CHIP1:44.03°C		
This command returns for every AIOX chip the average chip temperature in °C				
GET AVERAGE CHIP TEMPERATURE	ASCII READ COMMAND	#GAVGCHIPTEMP<CHIPNR><CR> Result: #GAVGCHIPTEMP<CHIPNR>:<ChipxTempDbl><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GAVGCHIPTEMP1<CR>		
	RX	#1,GAVGCHIPTEMP1:44.03<CR>		
		Average temperature of CHIP1:44.03°C		
This command returns for AIOX chip <CHIPNR> the average chip temperature in °C				
CHIP SUPPLY VOLTAGES				
GET SUPPLY VOLTAGES	ASCII READ COMMAND	#GVAVDDS<CR> Result: #GVAVDDS:<Chip1VAVDDDbl><CR>	ASCII	
	TX	#1,GVAVDDS<CR>		
	RX	#1,GVAVDDS:14.67,14.68<CR>		
		Actual supply voltage of CHIP1:14.67V		
This command returns for every AIOX chip the actual supply voltage in Volts. This must be >14.5V, if not, there is a severe wiring or other hardware issue!				
GET SUPPLY VOLTAGE	ASCII READ COMMAND	#GVAVDD<CHIPNR><CR> Result: #GVAVDD<CHIPNR>:<ChipxVAVDD><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GVAVDD1<CR>		
	RX	#1,GVAVDD1:14.67<CR>		
		Actual supply voltage of CHIP1:14.67V		
This command returns for AIOX chip <CHIPNR> the actual supply voltage in Volts. This must be >14.5V, if not, there is a severe wiring or other hardware issue!				
AVERAGE CHIP SUPPLY VOLTAGES				
GET AVERAGE SUPPLY VOLTAGES	ASCII READ COMMAND	#GAVGVAVDDS<CR> Result: #GAVGVAVDDS:<Chip1VAVDDDbl><CR>	ASCII	
	TX	#1,GAVGVAVDDS<CR>		
	RX	#1,GAVGVAVDDS:14.67,14.68<CR>		
		Average supply voltage of CHIP1:14.67V		
This command returns for every AIOX chip the average supply voltage in Volts. This must be >14.5V, if not, there is a severe wiring or other hardware issue!				
GET AVERAGE SUPPLY VOLTAGE	ASCII READ COMMAND	#GAVGVAVDD<CHIPNR><CR> Result: #GAVGVAVDD<CHIPNR>:<ChipxVAVDD><CR>	ASCII	
	CHIPNR	1		

	TX	#1,GAVGVAVDD1<CR>		
	RX	#1,GAVGVAVDD1:14.67<CR>		
		Average supply voltage of CHIP1:14.67V		
This command returns for AIOX chip <CHIPNR> the average supply voltage in Volts. This must be >14.5V, if not, there is a severe wiring or other hardware issue!				
CHIP GROUND VOLTAGES				
GET GROUND VOLTAGES	ASCII READ COMMAND	#GVAGNDS<CR> Result: #GVAGNDS:<Chip1VAGNDDbl><CR>	ASCII	
	TX	#1,GVAGNDS<CR>		
	RX	#1,GVAGNDS:0.00,0.00<CR>		
		Actual ground voltage of CHIP1:0.00V		
This command returns for every AIOX chip the actual ground voltage in Volts. This must be 0, if not, there is a severe wiring or other hardware issue!				
GET GROUND VOLTAGE	ASCII READ COMMAND	#GVAGND<CHIPNR><CR> Result: #GVAGND<CHIPNR>:<ChipxVAGNDDbl><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GVAGND1<CR>		
	RX	#1,GVAGND1:0.00<CR>		
		Actual ground voltage of CHIP1:0.00V		
This command returns for AIOX chip <CHIPNR> the actual ground voltage in Volts. This must be 0, if not, there is a severe wiring or other hardware issue!				
AVERAGE CHIP GROUND VOLTAGES				
GET AVERAGE GROUND VOLTAGES	ASCII READ COMMAND	#GAVGVAGNDS<CR> Result: #GAVGVAGNDS:<Chip1VAGNDDbl><CR>	ASCII	
	TX	#1,GAVGVAGNDS<CR>		
	RX	#1,GAVGVAGNDS:0.00,0.00<CR>		
		Average ground voltage of CHIP1:0.00V		
This command returns for every AIOX chip the average ground voltage in Volts. This must be 0, if not, there is a severe wiring or other hardware issue!				
GET AVERAGE GROUND VOLTAGE	ASCII READ COMMAND	#GAVGVAGND<CHIPNR><CR> Result: #GAVGVAGND<CHIPNR>:<ChipxVAVGNDDbl><CR>	ASCII	
	CHIPNR	1		
	TX	#1,GAVGVAGND1<CR>		
	RX	#1,GAVGVAGND1:0.00<CR>		
		Average ground voltage of CHIP1:0.00V		
This command returns for AIOX chip <CHIPNR> the average ground voltage in Volts. This must be 0, if not, there is a severe wiring or other hardware issue!				

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
ASCII COMMANDS						
SET CONFIG OUTPUT VALUES	ASCII WRITE COMMAND	#SCFGOVS:<IO1CfgValDbl>,<IO2CfgValDbl>,<IO3CfgValDbl>,<IO4CfgValDbl><CR> Result: #OK<CR>			ASCII	YES
	IO1Value	,000				
	IO2Value	,000				
	IO3Value	,000				
	IO4Value	,000				
	TX	#1,SCFGOVS:0,0,0,0<CR>				
	RX	N/A				
This command sets for all outputs the standard value in Volt or in mA, which are used when the controller is restartet or performing a watchdog reset and the channel is used as voltage output or current output. For voltage outputs the range is 0 to 11,0V. For current outputs the range is 0 to 25mA.						
SET CONFIG OUTPUT VALUEx	ASCII WRITE COMMAND	#SCFGOV<IONR>:<IOxCfgValueDbl><CR> Result: #OK<CR>			ASCII	YES
	IONR	4				
	IOxCfgValue	,000				
	TX	#1,SCFGOV4:0<CR>				
	RX	N/A				
This command sets for one outputs the standard value in Volt or in mA, which is used when the controller is restartet and the channel is used as voltage output or current output. For voltage outputs the range is 0 to 11,0V. For current outputs the range is 0 to 25mA.						
GET CONFIG OUTPUT VALUES	ASCII READ COMMAND	#GCFGOVS<CR> Result: #GCFGOVS:<IOVolt1Dbl>,<IOVolt2Dbl>,...,<IOVolt4Dbl><CR>			ASCII	
	TX	#1,GCFGOVS<CR>				
	RX	#1,GCFGOVS:999.99,999.99,999.99,999.99,999.99,999.99,999.99,999.99<CR>				
		Actual config value on IO1:999.99V or mA				
		Actual config value on IO2:999.99V or mA				
		Actual config value on IO3:999.99V or mA				
		Actual config value on IO4:999.99V or mA				
This command shows for all channels the current saved startup values for use as voltage or current outputs For voltage outputs the range is 0 to 11,0V. For current outputs the range is 0 to 25mA. All IOs with a different usage type will return 999.99.						
GET CONFIG OUTPUT VALUE	ASCII READ COMMAND	#GCFGOV<IONR><CR> Result: #GCFGOV<IONR>:<IOxValueDbl><CR>			ASCII	

	IONR	4		
	TX	#1,GCFGOV4<CR>		
	RX	#1,GCFGOV8:999.99<CR>		
		Actual config value on IO4:999.99V or mA		
This command shows for one channel the current saved startup value for use as voltage or current output. For voltage outputs the range is 0 to 11,0V. For current outputs the range is 0 to 25mA. All IOs with a different usage type will return 999.99.				
RESET 16AIOXCPU	ASCII WRITE COMMAND	#R16AIOXCPU<CR> Result: #OK<CR>	ASCII	NO
	TX	#1,R16AIOXCPU<CR>		
	RX	N/A		
This command restarts the internal CPU of the 16AIOX addon print. All channels will be resetted & initialized completely				

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
AIOX IO TYPES						
IO TYPE1	3x40001 4x40001 I:40000	0,0x0000 B:00 00		13:RTDI[OHM]	UINT16 R/W	YES
		Actual IO type of AIOx:0:UU		CHOOSE NEW IO TYPE FROM LIST		
Current configured IO type for AIOXx =0: UNUSED =1: VOLTAGE INPUT[0-10V] =2: VOLTAGE INPUT[2-10V] =3: VOLTAGE OUTPUT[0-10V] =4: VOLTAGE OUTPUT[2-10V] =5: CURRENT INPUT LOOP POWERED[0-20mA] =6: CURRENT INPUT LOOP POWERED[4-20mA] =7: CURRENT INPUT EXTERNAL POWERED[0-20mA] =8: CURRENT INPUT EXTERNAL POWERED[4-20mA] =9: CURRENT OUTPUT[0-20mA] =10: CURRENT OUTPUT[4-20mA] =11: DIGITAL INPUT LOGIC 24V= =12: DIGITAL INPUT LOOP POWERED =13: RESISTANCE MEASUREMENT HINT: The last IO type is automatically stored in FRAM and will be used after a system restart.						
IO TYPE2	3x40002 4x40002 I:40001	0,0x0000 B:00 00		12:DI[24V;LP]	UINT16 R/W	YES
		Actual IO type of AIOx:0:UU		CHOOSE NEW IO TYPE FROM LIST		
IO TYPE3	3x40003 4x40003 I:40002	0,0x0000 B:00 00		1:VI[0-10V]	UINT16 R/W	NO
		Actual IO type of AIOx:0:UU		CHOOSE NEW IO TYPE FROM LIST		
IO TYPE4	3x40004 4x40004 I:40003	0,0x0000 B:00 00		1:VI[0-10V]	UINT16 R/W	NO
		Actual IO type of AIOx:0:UU		CHOOSE NEW IO TYPE FROM LIST		
AIOX:VOLTAGE INPUTS						
VOLTAGE INPUT1 IN VOLTS	3x40005 4x40005 I:40004	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
Current value of voltage input in x*100V, range 0-10V =65535,0xFFFF: The channel is not configured as voltage input						

VOLTAGE INPUT2 IN VOLTS	3x40006 4x40006 I:40005	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
VOLTAGE INPUT3 IN VOLTS	3x40007 4x40007 I:40006	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
VOLTAGE INPUT4 IN VOLTS	3x40008 4x40008 I:40007	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
AIOX:VOLTAGE INPUTS						
VOLTAGE INPUT1 IN PERCENT	3x40009 4x40009 I:40008	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
Current value of voltage input in x*100%, range 0-100% =65535,0xFFFF: The channel is not configured as voltage input						
VOLTAGE INPUT3 IN PERCENT	3x40010 4x40010 I:40009	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
VOLTAGE INPUT3 IN PERCENT	3x40011 4x40011 I:40010	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
VOLTAGE INPUT4 IN PERCENT	3x40012 4x40012 I:40011	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
AIOX:VOLTAGE OUTPUTS						
VOLTAGE OUTPUT1 IN VOLTS	3x40013 4x40013 I:40012	65535,0xFFFF B:FF FF	1100	11	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
Current value of voltage output in x*100V, range 0-11V =65535,0xFFFF: The channel is not configured as voltage output Writing a new value onto this register sets voltage output x to a new output value in Volt						
VOLTAGE OUTPUT2 IN VOLTS	3x40014 4x40014 I:40013	65535,0xFFFF B:FF FF	1100	11	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		

VOLTAGE OUTPUT3 IN VOLTS	3x40015 4x40015 I:40014	65535,0xFFFF B:FF FF	1100	11	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
VOLTAGE OUTPUT4 IN VOLTS	3x40016 4x40016 I:40015	65535,0xFFFF B:FF FF	1100	11	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
AIOX:VOLTAGE OUTPUTS						
VOLTAGE OUTPUT1 IN PERCENT	3x40017 4x40017 I:40016	65535,0xFFFF B:FF FF	11000	110	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
Current value of voltage output in x*100%, range 0-110% (100%=10V) =65535,0xFFFF: The channel is not configured as voltage output Writing a new value onto this register sets voltage output x to a new output value in percent						
VOLTAGE OUTPUT2 IN PERCENT	3x40018 4x40018 I:40017	65535,0xFFFF B:FF FF	5000	50	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
VOLTAGE OUTPUT3 IN PERCENT	3x40019 4x40019 I:40018	65535,0xFFFF B:FF FF	3000	30	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
VOLTAGE OUTPUT4 IN PERCENT	3x40020 4x40020 I:40019	65535,0xFFFF B:FF FF	7500	75	UINT16 R/W	NO
		Actual value of VOx:65535=N/V		ENTER NEW VALUE FOR VOx		
AIOX:VOLTAGE OUTPUTS						
VOLTAGE OUTPUT1 MEASURED CURRENT	3x40021 4x40021 I:40020	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of VOx:-32768=N/V				
Returns the measured output current in x*100mA on voltage output VOx, Range -25mA..+25mA =-32768,0x8000: The channel is not configured as voltage output						
VOLTAGE OUTPUT2 MEASURED CURRENT	3x40022 4x40022 I:40021	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of VOx:-32768=N/V				
VOLTAGE OUTPUT3 MEASURED CURRENT	3x40023 4x40023 I:40022	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of VOx:-32768=N/V				

VOLTAGE OUTPUT4 MEASURED CURRENT	3x40024 4x40024 I:40023	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of VOx:-32768=N/V				
AIOX:CURRENT INPUTS						
CURRENT INPUT1 IN MILLIAMPERE	3x40025 4x40025 I:40024	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of CIx:65535=N/V				
Current value of current input in x*100mA, range 0-25mA =65535,0xFFFF: The channel is not configured as current input						
CURRENT INPUT2 IN MILLIAMPERE	3x40026 4x40026 I:40025	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
CURRENT INPUT3 IN MILLIAMPERE	3x40027 4x40027 I:40026	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
CURRENT INPUT4 IN MILLIAMPERE	3x40028 4x40028 I:40027	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of VIx:65535=N/V				
AIOX:CURRENT INPUTS						
CURRENT INPUT1 IN PERCENT	3x40029 4x40029 I:40028	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of CIx:65535=N/V				
Current value of current input in x*100%, range 0-125% (100%=20mA) =65535,0xFFFF: The channel is not configured as current input						
CURRENT INPUT2 IN PERCENT	3x40030 4x40030 I:40029	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of CIx:65535=N/V				
CURRENT INPUT3 IN PERCENT	3x40031 4x40031 I:40030	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of CIx:65535=N/V				
CURRENT INPUT4 IN PERCENT	3x40032 4x40032 I:40031	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual value of CIx:65535=N/V				
AIOX:CURRENT OUTPUTS						

CURRENT OUTPUT1 IN MILIAMPERE	3x40033 4x40033 I:40032	65535,0xFFFF B:FF FF	500	5	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
Current value of current output in x*100mA, range 0-25mA =65535,0xFFFF: The channel is not configured as current output Writing a new value onto this register sets current output x to a new output value in Milliampere						
CURRENT OUTPUT2 IN MILIAMPERE	3x40034 4x40034 I:40033	65535,0xFFFF B:FF FF	500	5	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
CURRENT OUTPUT3 IN MILIAMPERE	3x40035 4x40035 I:40034	65535,0xFFFF B:FF FF	500	5	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
CURRENT OUTPUT4 IN MILIAMPERE	3x40036 4x40036 I:40035	65535,0xFFFF B:FF FF	500	5	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
AIOX:CURRENT OUTPUTS						
CURRENT OUTPUT1 IN PERCENT	3x40037 4x40037 I:40036	65535,0xFFFF B:FF FF	5000	50	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
Current value of current output in x*100%, range 0-125% (100%=20mA) =65535,0xFFFF: The channel is not configured as current output Writing a new value onto this register sets current output x to a new output value in percent						
CURRENT OUTPUT2 IN PERCENT	3x40038 4x40038 I:40037	65535,0xFFFF B:FF FF	5000	50	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
CURRENT OUTPUT3 IN PERCENT	3x40039 4x40039 I:40038	65535,0xFFFF B:FF FF	5000	50	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
CURRENT OUTPUT4 IN PERCENT	3x40040 4x40040 I:40039	65535,0xFFFF B:FF FF	5000	50	UINT16 R/W	NO
		Actual value of COx:65535=N/V		ENTER NEW VALUE FOR COx		
AIOX:CURRENT OUTPUTS						
CURRENT OUTPUT1 MEASURED VOLTS	3x40041 4x40041 I:40040	65535,0xFFFF B:FF FF			UINT16 R/O	

		Actual measured output voltage COx:65535=N/V				
Current measured output voltage for current output x*100V, range 0-10V =65535,0xFFFF: The channel is not configured as current output						
CURRENT OUTPUT2 MEASURED VOLTS	3x40042 4x40042 I:40041	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured output voltage COx:65535=N/V				
CURRENT OUTPUT3 MEASURED VOLTS	3x40043 4x40043 I:40042	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured output voltage COx:65535=N/V				
CURRENT OUTPUT4 MEASURED VOLTS	3x40044 4x40044 I:40043	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured output voltage COx:65535=N/V				
AIOX:DIGITAL INPUTS						
DIGITAL INPUT1	3x40045 4x40045 I:40044	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual state of digital input DIx:65535=N/V				
Current measured state of digital input DIx =0: Digital input is OFF or loop is closed =1: Digital input is ON (+24V attached) or loop is open =65535,0xFFFF: The channel is not configured as digital input						
DIGITAL INPUT2	3x40046 4x40046 I:40045	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual state of digital input DIx:65535=N/V				
DIGITAL INPUT3	3x40047 4x40047 I:40046	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured output voltage COx:65535=N/V				
DIGITAL INPUT4	3x40048 4x40048 I:40047	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured output voltage COx:65535=N/V				
AIOX:DIGITAL INPUTS						
DIGITAL INPUT1 MEASURED CURRENT	3x40049 4x40049 I:40048	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of DIx:-32768=N/V				
Returns the measured output current in x*100mA on DIGITAL INPUT VOx, Range -25mA..+25mA =-32768,0x8000: The channel is not configured as DIGITAL INPUT						

DIGITAL INPUT2 MEASURED CURRENT	3x40050 4x40050 I:40049	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of DIx:-32768=N/V				
DIGITAL INPUT3 MEASURED CURRENT	3x40051 4x40051 I:40050	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of DIx:-32768=N/V				
DIGITAL INPUT4 MEASURED CURRENT	3x40052 4x40052 I:40051	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured output current of DIx:-32768=N/V				

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
AIOX:RTD INPUTS OHM*10						
RTD INPUT1 IN OHM*10	3x41001 4x41001 I:41000	65534,0xFFFE B:FF FE			UINT16 R/O	
		Actual measured ohm value of RTDIx:65534=OPEN				
Current measured RTD in Ohm*10 between 0 and 600000 =0..60000: Current measured resistance in Ohm*10 =65534,0xFFFE: The sensor or cabling is open (broken, not connected, or out of range) =65535,0xFFFF: The channel is not configured as RTD input						
RTD INPUT2 IN OHM*10	3x41002 4x41002 I:41001	65534,0xFFFE B:FF FE			UINT16 R/O	
		Actual measured ohm value of RTDIx:65534=OPEN				
RTD INPUT3 IN OHM*10	3x41003 4x41003 I:41002	65534,0xFFFE B:FF FE			UINT16 R/O	
		Actual measured ohm value of RTDIx:65534=OPEN				
RTD INPUT4 IN OHM*10	3x41004 4x41004 I:41003	65534,0xFFFE B:FF FE			UINT16 R/O	
		Actual measured ohm value of RTDIx:65534=OPEN				
AIOX:RTD INPUTS OHM*1						
RTD INPUT1 IN OHM	3x41005 4x41005 I:41004	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
Current measured RTD in Ohm*1 between 0 and 60000 =0..60000: Current measured resistance in Ohm*1 =65534,0xFFFE: The sensor or cabling is open (broken, not connected, or out of range) =65535,0xFFFF: The channel is not configured as RTD input						
RTD INPUT2 IN OHM	3x41006 4x41006 I:41005	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
RTD INPUT3 IN OHM	3x41007 4x41007 I:41006	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				

RTD INPUT4 IN OHM	3x41008 4x41008 I:41007	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
AIOX:RTD INPUTS OHM/10						
RTD INPUT1 IN OHM/10	3x41009 4x41009 I:41008	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
Current measured RTD in Ohm/10 between 0 and 60000 =0..60000: Current measured resistance in Ohm/10 =65534,0xFFFE: The sensor or cabling is open (broken, not connected, or out of range) =65535,0xFFFF: The channel is not configured as RTD input						
RTD INPUT2 IN OHM/10	3x41010 4x41010 I:41009	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
RTD INPUT3 IN OHM/10	3x41011 4x41011 I:41010	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
RTD INPUT4 IN OHM/10	3x41012 4x41012 I:41011	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured ohm value of RTDIx:65535=N/V				
AIOX:RTD INPUTS PT100 CELSIUS						
RTD INPUT1 AS PT100 IN CELSIUS	3x41013 4x41013 I:41012	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
Current measured RTD sensor value linearized as PT100 sensor in Celsius*100 in the range of -5000 to +13000 for -50.0 to +130.0 °C -32766,0x8002: Measured value is below -50°C -32767,0x8001: Measured value is above +130°C -32768,0x8000: The channel is not configured as RTD input						
RTD INPUT2 AS PT100 IN CELSIUS	3x41014 4x41014 I:41013	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
RTD INPUT3 AS PT100 IN CELSIUS	3x41015 4x41015 I:41014	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
RTD INPUT4 AS PT100 IN CELSIUS	3x41016 4x41016 I:41015	-32768,0x8000 B:80 00			SINT16 R/O	

		Actual measured PT100 temperature RTDIx:-32768=N/V				
AIOX:RTD INPUTS PT1000 CELSIUS						
RTD INPUT1 AS PT1000 IN CELSIUS	3x41017 4x41017 I:41016	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
Current measured RTD sensor value linearized as PT1000 sensor in Celsius*100 in the range of -5000 to +13000 for -50.0 to +130.0 °C -32766,0x8002: Measured value is below -50°C -32767,0x8001: Measured value is above +130°C -32768,0x8000: The channel is not configured as RTD input						
RTD INPUT2 AS PT1000 IN CELSIUS	3x41018 4x41018 I:41017	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
RTD INPUT3 AS PT1000 IN CELSIUS	3x41019 4x41019 I:41018	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
RTD INPUT4 AS PT1000 IN CELSIUS	3x41020 4x41020 I:41019	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
AIOX:RTD INPUTS NI1000-DIN43760 CELSIUS						
RTD INPUT1 AS NI1000-DIN43760 IN CELSIUS	3x41021 4x41021 I:41020	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
Current measured RTD sensor value linearized as NI1000-DIN43760 sensor in Celsius*100 in the range of -5000 to +13000 for -50.0 to +130.0 °C -32766,0x8002: Measured value is below -50°C -32767,0x8001: Measured value is above +130°C -32768,0x8000: The channel is not configured as RTD input						
RTD INPUT2 AS NI1000-DIN43760 IN CELSIUS	3x41022 4x41022 I:41021	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
RTD INPUT3 AS NI1000-DIN43760 IN CELSIUS	3x41023 4x41023 I:41022	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
RTD INPUT4 AS NI1000-DIN43760 IN CELSIUS	3x41024 4x41024 I:41023	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
AIOX:RTD INPUTS PT100 KELVIN						

RTD INPUT1 AS PT100 IN KELVIN	3x41025 4x41025 I:41024	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT100 temperature RTDIx:65535=655,35°K				
Current measured RTD sensor value linearized as PT100 sensor in Kelvin*100 in the range of 22315 to 40315 for 223.15 to 403.15 °K 65533,0xFFFD: Measured value is below 223,15°K 65534,0xFFFE: Measured value is above 403,15°K 65535,0xFFFF: The channel is not configured as RTD input						
RTD INPUT2 AS PT100 IN KELVIN	3x41026 4x41026 I:41025	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT100 temperature RTDIx:65535=655,35°K				
RTD INPUT3 AS PT100 IN KELVIN	3x41027 4x41027 I:41026	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT100 temperature RTDIx:65535=655,35°K				
RTD INPUT4 AS PT100 IN KELVIN	3x41028 4x41028 I:41027	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT100 temperature RTDIx:65535=655,35°K				
AIOX:RTD INPUTS PT1000 KELVIN						
RTD INPUT1 AS PT1000 IN KELVIN	3x41029 4x41029 I:41028	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT1000 temperature RTDIx:65535=655,35°K				
Current measured RTD sensor value linearized as PT1000 sensor in Kelvin*100 in the range of 22315 to 40315 for 223.15 to 403.15 °K 65533,0xFFFD: Measured value is below 223,15°K 65534,0xFFFE: Measured value is above 403,15°K 65535,0xFFFF: The channel is not configured as RTD input						
RTD INPUT2 AS PT1000 IN KELVIN	3x41030 4x41030 I:41029	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT1000 temperature RTDIx:65535=655,35°K				
RTD INPUT3 AS PT1000 IN KELVIN	3x41031 4x41031 I:41030	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT1000 temperature RTDIx:65535=655,35°K				
RTD INPUT4 AS PT1000 IN KELVIN	3x41032 4x41032 I:41031	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured PT1000 temperature RTDIx:65535=655,35°K				
AIOX:RTD INPUTS NI1000-DIN43760 KELVIN						
RTD INPUT1 AS NI1000-DIN43760 IN KELVIN	3x41033 4x41033 I:41032	65535,0xFFFF B:FF FF			UINT16 R/O	

		Actual measured NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
Current measured RTD sensor value linearized as NI1000-DIN43760 sensor in Kelvin*100 in the range of 22315 to 40315 for 223.15 to 403.15 °K 65533,0xFFFD: Measured value is below 223,15°K 65534,0xFFFE: Measured value is above 403,15°K 65535,0xFFFF: The channel is not configured as RTD input						
RTD INPUT2 AS NI1000-DIN43760 IN KELVIN	3x41034 4x41034 I:41033	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
RTD INPUT3 AS NI1000-DIN43760 IN KELVIN	3x41035 4x41035 I:41034	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
RTD INPUT4 AS NI1000-DIN43760 IN KELVIN	3x41036 4x41036 I:41035	65535,0xFFFF B:FF FF			UINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
AIOX:RTD INPUTS PT100 FAHRENHEIT						
RTD INPUT1 AS PT100 IN FAHRENHEIT	3x41037 4x41037 I:41036	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
Current measured RTD sensor value linearized as PT100 sensor in Fahrenheit*100 in the range of -5800 to +26600 for -58.0 to +266.0 °F -32766,0x8002: Measured value is below -58°C -32767,0x8001: Measured value is above +266°C -32768,0x8000: The channel is not configured as RTD input						
RTD INPUT2 AS PT100 IN FAHRENHEIT	3x41038 4x41038 I:41037	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
RTD INPUT3 AS PT100 IN FAHRENHEIT	3x41039 4x41039 I:41038	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
RTD INPUT4 AS PT100 IN FAHRENHEIT	3x41040 4x41040 I:41039	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT100 temperature RTDIx:-32768=N/V				
AIOX:RTD INPUTS PT1000 FAHRENHEIT						
RTD INPUT1 AS PT1000 IN FAHRENHEIT	3x41041 4x41041 I:41040	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				

Current measured RTD sensor value linearized as PT1000 sensor in Fahrenheit*100 in the range of -5800 to +26600 for -58.0 to +266.0 °F -32766,0x8002: Measured value is below -58°C -32767,0x8001: Measured value is above +266°C -32768,0x8000: The channel is not configured as RTD input						
RTD INPUT2 AS PT1000 IN FAHRENHEIT	3x41042 4x41042 I:41041	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
RTD INPUT3 AS PT1000 IN FAHRENHEIT	3x41043 4x41043 I:41042	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
RTD INPUT4 AS PT1000 IN FAHRENHEIT	3x41044 4x41044 I:41043	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured PT1000 temperature RTDIx:-32768=N/V				
AIOX:RTD INPUTS NI1000-DIN43760 FAHRENHEIT						
RTD INPUT1 AS NI1000-DIN43760 IN FAHRENHEIT	3x41045 4x41045 I:41044	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
Current measured RTD sensor value linearized as NI1000-DIN43760 sensor in Fahrenheit*100 in the range of -5800 to +26600 for -58.0 to +266.0 °F -32766,0x8002: Measured value is below -58°C -32767,0x8001: Measured value is above +266°C -32768,0x8000: The channel is not configured as RTD input						
RTD INPUT2 AS NI1000-DIN43760 IN FAHRENHEIT	3x41046 4x41046 I:41045	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
RTD INPUT3 AS NI1000-DIN43760 IN FAHRENHEIT	3x41047 4x41047 I:41046	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				
RTD INPUT4 AS NI1000-DIN43760 IN FAHRENHEIT	3x41048 4x41048 I:41047	-32768,0x8000 B:80 00			SINT16 R/O	
		Actual measured NI1000-DIN43760 temperature RTDIx:-32768=N/V				

AIOX:RTD INPUTS OHM*100						
RTD INPUT1 IN OHM*100	3x41501 4x41501 I:41500	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
Current measured RTD in Ohm*100 =0xFFFFFFFF: The channel is not configured as RTD input						

RTD INPUT2 IN OHM*100	3x41503 4x41503 I:41502	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
RTD INPUT3 IN OHM*100	3x41505 4x41505 I:41504	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
RTD INPUT4 IN OHM*100	3x41507 4x41507 I:41506	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
AIOX:RTD INPUTS OHM*100						
RTD INPUT1 IN OHM*100	3x41509 4x41509 I:41508	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
Current measured RTD in Ohm*100 =0xFFFFFFFF: The channel is not configured as RTD input						
RTD INPUT2 IN OHM*100	3x41511 4x41511 I:41510	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
RTD INPUT3 IN OHM*100	3x41513 4x41513 I:41512	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Actual measured ohm value of RTDIx:-1=N/V				
RTD INPUT4 IN OHM*100	3x41515 4x41515 I:41514	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Actual measured ohm value of RTDIx:-1=N/V				

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
AIOX:AVERAGE RTD INPUTS OHM*10						
AVERAGE RTD INPUT1 IN OHM*10	3x42001 4x42001 I:42000	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
Measured average RTD in Ohm*10 between 0 and 600000 =0..60000: Measured average resistance in Ohm*10 =65534,0xFFFE: The sensor or cabling is open (broken, not connected, or out of range) =65535,0xFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 IN OHM*10	3x42002 4x42002 I:42001	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AVERAGE RTD INPUT3 IN OHM*10	3x42003 4x42003 I:42002	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AVERAGE RTD INPUT4 IN OHM*10	3x42004 4x42004 I:42003	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AIOX:AVERAGE RTD INPUTS OHM*1						
AVERAGE RTD INPUT1 IN OHM	3x42005 4x42005 I:42004	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
Measured average RTD in Ohm*1 between 0 and 60000 =0..60000: Measured average resistance in Ohm*1 =65534,0xFFFE: The sensor or cabling is open (broken, not connected, or out of range) =65535,0xFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 IN OHM	3x42006 4x42006 I:42005	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AVERAGE RTD INPUT3 IN OHM	3x42007 4x42007 I:42006	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				

AVERAGE RTD INPUT4 IN OHM	3x42008 4x42008 I:42007	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AIOX:AVERAGE RTD INPUTS OHM/10						
AVERAGE RTD INPUT1 IN OHM/10	3x42009 4x42009 I:42008	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
Measured average RTD in Ohm/10 between 0 and 60000 =0..60000: Measured average resistance in Ohm/10 =65534,0xFFFE: The sensor or cabling is open (broken, not connected, or out of range) =65535,0xFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 IN OHM/10	3x42010 4x42010 I:42009	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AVERAGE RTD INPUT3 IN OHM/10	3x42011 4x42011 I:42010	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AVERAGE RTD INPUT4 IN OHM/10	3x42012 4x42012 I:42011	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average ohm value of RTDIx:65535=N/V				
AIOX:AVERAGE RTD INPUTS PT100 CELSIUS						
AVERAGE RTD INPUT1 AS PT100 IN CELSIUS	3x42013 4x42013 I:42012	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
Calculated average value of RTD sensor value linearized as PT100 sensor in Celsius*100 in the range of -5000 to +13000 for -50.0 to +130.0 °C -32766,0x8002: Measured value is below -50°C -32767,0x8001: Measured value is above +130°C -32768,0x8000: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS PT100 IN CELSIUS	3x42014 4x42014 I:42013	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT3 AS PT100 IN CELSIUS	3x42015 4x42015 I:42014	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT4 AS PT100 IN CELSIUS	3x42016 4x42016 I:42015	-32768,0x8000 B:80 00			SINT16 R/O	

		Measured average PT100 temperature RTDIx:-32768=N/V				
AIOX:AVERAGE RTD INPUTS PT1000 CELSIUS						
AVERAGE RTD INPUT1 AS PT1000 IN CELSIUS	3x42017 4x42017 I:42016	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
Calculated average value of RTD sensor value linearized as PT1000 sensor in Celsius*100 in the range of -5000 to +13000 for -50.0 to +130.0 °C -32766,0x8002: Measured value is below -50°C -32767,0x8001: Measured value is above +130°C -32768,0x8000: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS PT1000 IN CELSIUS	3x42018 4x42018 I:42017	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT3 AS PT1000 IN CELSIUS	3x42019 4x42019 I:42018	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT4 AS PT1000 IN CELSIUS	3x42020 4x42020 I:42019	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
AIOX:AVERAGE RTD INPUTS NI1000-DIN43760 CELSIUS						
AVERAGE RTD INPUT1 AS NI1000-DIN43760 IN CELSIUS	3x42021 4x42021 I:42020	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
Calculated average value of RTD sensor value linearized as NI1000-DIN43760 sensor in Celsius*100 in the range of -5000 to +13000 for -50.0 to +130.0 °C -32766,0x8002: Measured value is below -50°C -32767,0x8001: Measured value is above +130°C -32768,0x8000: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS NI1000-DIN43760 IN CELSIUS	3x42022 4x42022 I:42021	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT3 AS NI1000-DIN43760 IN CELSIUS	3x42023 4x42023 I:42022	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT4 AS NI1000-DIN43760 IN CELSIUS	3x42024 4x42024 I:42023	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
AIOX:AVERAGE RTD INPUTS PT100 KELVIN						

AVERAGE RTD INPUT1 AS PT100 IN KELVIN	3x42025 4x42025 I:42024	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT100 temperature RTDIx:65535=655,35°K				
Average value of measured RTD sensor linearized as PT100 sensor in Kelvin*100 in the range of 22315 to 40315 for 223.15 to 403.15 °K 65533,0xFFFD: Measured value is below 223,15°K 65534,0xFFFE: Measured value is above 403,15°K 65535,0xFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS PT100 IN KELVIN	3x42026 4x42026 I:42025	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT100 temperature RTDIx:65535=655,35°K				
AVERAGE RTD INPUT3 AS PT100 IN KELVIN	3x42027 4x42027 I:42026	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT100 temperature RTDIx:65535=655,35°K				
AVERAGE RTD INPUT4 AS PT100 IN KELVIN	3x42028 4x42028 I:42027	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT100 temperature RTDIx:65535=655,35°K				
AIOX:AVERAGE RTD INPUTS PT1000 KELVIN						
AVERAGE RTD INPUT1 AS PT1000 IN KELVIN	3x42029 4x42029 I:42028	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT1000 temperature RTDIx:65535=655,35°K				
Average value of measured RTD sensor linearized as PT1000 sensor in Kelvin*100 in the range of 22315 to 40315 for 223.15 to 403.15 °K 65533,0xFFFD: Measured value is below 223,15°K 65534,0xFFFE: Measured value is above 403,15°K 65535,0xFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS PT1000 IN KELVIN	3x42030 4x42030 I:42029	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT1000 temperature RTDIx:65535=655,35°K				
AVERAGE RTD INPUT3 AS PT1000 IN KELVIN	3x42031 4x42031 I:42030	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT1000 temperature RTDIx:65535=655,35°K				
AVERAGE RTD INPUT4 AS PT1000 IN KELVIN	3x42032 4x42032 I:42031	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average PT1000 temperature RTDIx:65535=655,35°K				
AIOX:AVERAGE RTD INPUTS NI1000-DIN43760 KELVIN						
AVERAGE RTD INPUT1 AS NI1000-DIN43760 IN KELVIN	3x42033 4x42033 I:42032	65535,0xFFFF B:FF FF			UINT16 R/O	

		Measured average NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
Average value of measured RTD sensor linearized as NI1000-DIN43760 sensor in Kelvin*100 in the range of 22315 to 40315 for 223.15 to 403.15 °K 65533,0xFFFD: Measured value is below 223,15°K 65534,0xFFFE: Measured value is above 403,15°K 65535,0xFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS NI1000-DIN43760 IN KELVIN	3x42034 4x42034 I:42033	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
AVERAGE RTD INPUT3 AS NI1000-DIN43760 IN KELVIN	3x42035 4x42035 I:42034	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
AVERAGE RTD INPUT4 AS NI1000-DIN43760 IN KELVIN	3x42036 4x42036 I:42035	65535,0xFFFF B:FF FF			UINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:65535=655,35°K				
AIOX:AVERAGE RTD INPUTS PT100 FAHRENHEIT						
AVERAGE RTD INPUT1 AS PT100 IN FAHRENHEIT	3x42037 4x42037 I:42036	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
Average value of measured RTD sensor value linearized as PT100 sensor in Fahrenheit*100 in the range of -5800 to +26600 for -58.0 to +266.0 °F -32766,0x8002: Measured value is below -58°C -32767,0x8001: Measured value is above +266°C -32768,0x8000: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS PT100 IN FAHRENHEIT	3x42038 4x42038 I:42037	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT3 AS PT100 IN FAHRENHEIT	3x42039 4x42039 I:42038	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT4 AS PT100 IN FAHRENHEIT	3x42040 4x42040 I:42039	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT100 temperature RTDIx:-32768=N/V				
AIOX:AVERAGE RTD INPUTS PT1000 FAHRENHEIT						
AVERAGE RTD INPUT1 AS PT1000 IN FAHRENHEIT	3x42041 4x42041 I:42040	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				

Average value of measured RTD sensor value linearized as PT1000 sensor in Fahrenheit*100 in the range of -5800 to +26600 for -58.0 to +266.0 °F -32766,0x8002: Measured value is below -58°C -32767,0x8001: Measured value is above +266°C -32768,0x8000: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS PT1000 IN FAHRENHEIT	3x42042 4x42042 I:42041	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT3 AS PT1000 IN FAHRENHEIT	3x42043 4x42043 I:42042	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT4 AS PT1000 IN FAHRENHEIT	3x42044 4x42044 I:42043	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average PT1000 temperature RTDIx:-32768=N/V				
AIOX:AVERAGE RTD INPUTS NI1000-DIN43760 FAHRENHEIT						
AVERAGE RTD INPUT1 AS NI1000-DIN43760 IN FAHRENHEIT	3x42045 4x42045 I:42044	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
Average value of measured RTD sensor value linearized as NI1000-DIN43760 sensor in Fahrenheit*100 in the range of -5800 to +26600 for -58.0 to +266.0 °F -32766,0x8002: Measured value is below -58°C -32767,0x8001: Measured value is above +266°C -32768,0x8000: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 AS NI1000-DIN43760 IN FAHRENHEIT	3x42046 4x42046 I:42045	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT3 AS NI1000-DIN43760 IN FAHRENHEIT	3x42047 4x42047 I:42046	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				
AVERAGE RTD INPUT4 AS NI1000-DIN43760 IN FAHRENHEIT	3x42048 4x42048 I:42047	-32768,0x8000 B:80 00			SINT16 R/O	
		Measured average NI1000-DIN43760 temperature RTDIx:-32768=N/V				

AIOX:RTD INPUTS OHM*100						
AVERAGE RTD INPUT1 IN OHM*100	3x42501 4x42501 I:42500	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Measured average ohm value of RTDIx:-1=N/V				
Measured average RTD in Ohm*100 =0xFFFFFFFF: The channel is not configured as RTD input						

AVERAGE RTD INPUT2 IN OHM*100	3x42503 4x42503 I:42502	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Measured average ohm value of RTDIx:-1=N/V				
AVERAGE RTD INPUT3 IN OHM*100	3x42505 4x42505 I:42504	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Measured average ohm value of RTDIx:-1=N/V				
AVERAGE RTD INPUT4 IN OHM*100	3x42507 4x42507 I:42506	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32 R/O	
		Measured average ohm value of RTDIx:-1=N/V				
AIOX:AVERAGE RTD INPUTS OHM*100						
AVERAGE RTD INPUT1 IN OHM*100	3x42509 4x42509 I:42508	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Measured average ohm value of RTDIx:-1=N/V				
Measured average RTD in Ohm*100 =0xFFFFFFFF: The channel is not configured as RTD input						
AVERAGE RTD INPUT2 IN OHM*100	3x42511 4x42511 I:42510	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Measured average ohm value of RTDIx:-1=N/V				
AVERAGE RTD INPUT3 IN OHM*100	3x42513 4x42513 I:42512	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Measured average ohm value of RTDIx:-1=N/V				
AVERAGE RTD INPUT4 IN OHM*100	3x42515 4x42515 I:42514	4294967295,0xFFFFFFFF B:FF FF FF FF			UINT32R R/O	
		Measured average ohm value of RTDIx:-1=N/V				

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
AIOX CHIP TEMPERATURE						
TEMPERATURE CHIP 1 IN CELSIUS	3x43001 4x43001 I:43000	464,0x01D0 B:01 D0			UINT16 R/O	
		Actual measured temperature of CHIPx:46,4°C				
Current measured chip temperature for CHIPx in x*10 °C. Each CHIP supports 4 AIOX channels.						
AIOX CHIP TEMPERATURE						
AVERAGE TEMPERATURE CHIP 1 IN CELSIUS	3x43002 4x43002 I:43001	464,0x01D0 B:01 D0			UINT16 R/O	
		Measured average temperature of CHIPx:46,4°C				
Measured average chip temperature for CHIPx in x*10 °C. Each CHIP supports 4 AIOX channels.						
AIOX CHIP VOLTAGES						
Vavdd CHIP 1 IN VOLT	3x43003 4x43003 I:43002	146,0x0092 B:00 92			UINT16 R/O	
		Actual measured voltage Vavdd of CHIPx:14,6V				
Current measured voltage Vavdd for CHIPx in x*10 Volts. Each CHIP supports 4 AIOX channels. This must be >14.5V, if not, there is a severe wiring or other hardware issue!						
AIOX CHIP VOLTAGES						
AVERAGE Vavdd CHIP 1 IN VOLT	3x43004 4x43004 I:43003	146,0x0092 B:00 92			UINT16 R/O	
		Measured average voltage Vavdd of CHIPx:14,6V				
Current measured voltage Vavdd for CHIPx in x*10 Volts. Each CHIP supports 4 AIOX channels. This must be >14.5V, if not, there is a severe wiring or other hardware issue!						
AIOX CHIP VOLTAGES						
Vagnd CHIP 1 IN VOLT	3x43005 4x43005 I:43004	0,0x0000 B:00 00			UINT16 R/O	
		Actual measured voltage Vagnd of CHIPx:0,0V				
Current measured voltage Vagnd for CHIPx in x*10 Volts. Each CHIP supports 4 AIOX channels. This must be 0V, if not, there is a severe wiring or other hardware issue!						
AIOX CHIP VOLTAGES						
AVERAGE Vagnd CHIP 1 IN VOLT	3x43006 4x43006 I:43005	0,0x0000 B:00 00			UINT16 R/O	
		Measured average voltage Vagnd of CHIPx:0,0V				
Current measured voltage Vagnd for CHIPx in x*10 Volts. Each CHIP supports 4 AIOX channels. This must be 0V, if not, there is a severe wiring or other hardware issue!						

AIOX CHIP STATUS						
LIVE STATUS CHIP 1	3x43007 4x43007 I:43006	30720,0x7800 B:78 00			UINT16 R/O	
		Actual live status of CHIPx:7800				
Current live status for CHIPx. Each CHIP supports 4 AIOX channels. Each result bit stands for a different state: Bit 0: VI_ERR_CURR_A: Status of channel A:Voltage or current error detected on Channel A. This bit is interpreted differently depending on which of the following IO function selected: Voltage output: short-circuit error. The error condition is debounced for 2 ms before the status bit is set. Current output: open circuit error. The error condition is debounced for 2 ms before the status bit is set. Current input, loop powered: short-circuit error. A short to ground is detected Current input, externally powered: short-circuit error. A current source >25 mA is detected Bit 1: VI_ERR_CURR_B: Status of voltage input B. Same like VI_ERR_CURR_A Bit 2: VI_ERR_CURR_C: Status of voltage input C. Same like VI_ERR_CURR_A Bit 3: VI_ERR_CURR_D: Status of voltage input D. Same like VI_ERR_CURR_A Bit 4: HI_TEMP_STATUS: If the die temperature is typically at or above 115°C, the HI_TEMP_STATUS bit is asserted Bit 5: CHARGE_PUMP_STATUS: Charge pump error detected. Bit 6: ALDO5V_STATUS: ALDO5V Power Supply Monitor Error. This bit is asserted when the ALDO5V pin falls below 4.05 V. Usually ~5V. Bit 7: AVDD_STATUS: AVDD Power Supply Monitor Error. This bit is asserted when the AVDD pin falls below 9.26 V. Usually ~17V. Bit 8: DVCC_STATUS: DVCC Power Supply Monitor Error. This bit is asserted when the DVCC pin falls below 1.93 V. Usually ~3.3V. Bit 9: ALDO1V8_STATUS: ALDO1V8 Power Supply Monitor Error. This bit is asserted when the ALDO1V8 pin falls below 1.35 V. Usually ~1.8V. Bit 10-12: ADC_CH_CURR: Current converted channel of the ADC (0:A, 1:B, 2:C, 3:D, 4:Diagnostic 0, 5:Diagnostic 1, 6:Diagnostic 2, 7:Diagnostic 3) Bit 13: ADC_BUSY: ADC busy status bit. Bit 14: ADC_DATA_RDY:ADC data ready. The ADC_DATA_RDY bit asserts when a conversion cycle has completed. The bit stays asserted until a user writes 1 to clear the bit. In single conversion mode, the ADC_RDY pin follows the ADC_DATA_RDY bit and only deasserts when the ADC_DATA_RDY bit is cleared. In continuous conversion mode, the ADC_RDY pin returns high after 24 µs. Bit 15: RESERVED: Reserved						
AIOX CHIP STATUS						
ALERT STATUS CHIP 1	3x43008 4x43008 I:43007	33792,0x8400 B:84 00			UINT16 R/O	
		Actual alert status of CHIPx:8400				

Current alert status for CHIPx. Each CHIP supports 4 AIOX channels.
Each result bit stands for a different state:
Bit 0: VI_ERR_CURR_A: Status of channel A:Voltage or current error detected on Channel A. This bit is interpreted differently depending on which of the following IO function selected:
Voltage output: short-circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current output: open circuit error. The error condition is debounced for 2 ms before the status bit is set.
Current input, loop powered: short-circuit error. A short to ground is detected
Current input, externally powered: short-circuit error. A current source >25 mA is detected
Bit 1: VI_ERR_CURR_B: Status of voltage input B. Same like VI_ERR_CURR_A
Bit 2: VI_ERR_CURR_C: Status of voltage input C. Same like VI_ERR_CURR_A
Bit 3: VI_ERR_CURR_D: Status of voltage input D. Same like VI_ERR_CURR_A
Bit 4: HI_TEMP_STATUS: If the die temperature is typically at or above 115°C, the HI_TEMP_STATUS bit is asserted
Bit 5: CHARGE_PUMP_STATUS: Charge pump error detected.
Bit 6: ALDO5V_STATUS: ALDO5V Power Supply Monitor Error. This bit is asserted when the ALDO5V pin falls below 4.05 V. Usually ~5V.
Bit 7: AVDD_STATUS: AVDD Power Supply Monitor Error. This bit is asserted when the AVDD pin falls below 9.26 V. Usually ~17V.
Bit 8: DVCC_STATUS: DVCC Power Supply Monitor Error. This bit is asserted when the DVCC pin falls below 1.93 V. Usually ~3.3V.
Bit 9: ALDO1V8_STATUS: ALDO1V8 Power Supply Monitor Error. This bit is asserted when the ALDO1V8 pin falls below 1.35 V. Usually ~1.8V.
Bit 10: ADC_CONV_ERR: ADC Conversion Error. ADC results may be outside the selected measurement range.
Bit 11: ADC_SAT_ERR: ADC Saturation Error. ADC may be outside the user selected measurement range.
Bit 12: SPI_SCLK_CNT_ERR: SPI SCLK count error detected. This bit is asserted if an SPI command is applied but 32 SCLKs are not provided.
Bit 13: SPI_CRC_ERR: SPI CRC error detected. This bit is asserted if an invalid CRC is received.
Bit 14: CAL_MEM_ERR: Calibration Memory Error. This flag asserts under the following two conditions: When a calibration memory CRC error or an uncorrectable error correcting code (ECC) error is detected on the calibration memory upload. It is not possible to clear this bit if there is a CRC error or uncorrectable ECC error. It is recommended to reset the device and check the supplies in this situation. When there is an attempted SPI access to a register before the calibration memory refresh is complete. Do not address the device until the calibration memory is refreshed. Writing 1 to this bit clears the flag, if the flag is asserted due to this condition.
Bit 15: RESET_OCCURRED: Reset occurred. This bit is asserted after a reset event, which asserts the ALERT pin after the reset. Write a 1 to this bit to clear the flag. Note that a mask bit is not provided for this bit.

AIOX SPI STATUS

SPI ERRORS CHIP 1	3x43009 4x43009 I:43008	0,0x0000 B:00 00			UINT16 R/O	
		Actual SPI error counter of CHIPx:0 error(s)				

Current SPI error counter for CHIPx. Each CHIP supports 4 AIOX channels.
This command shows the acutal SPI errors since power up for every chip

AIOX STATE MACHINES

STATE MACHINE CHIP 1	3x43010 4x43010 I:43009	12070,0x2F26 B:2F 26			UINT16 R/O	
		Actual state of CHIPx:12070				

This command shows the acutal state of the internal communication state machine for CHIPx

AIOX ONLINE

IS ONLINE CHIP 1	3x43011 4x43011 I:43010	1,0x0001 B:00 01			UINT16 R/O	
		Is CHIPx online:1=YES				

This command shows the acutal state of the internal communication state machine for CHIPx

AIOX CLEAR ALARM STATE

CLEAR ALERT STATES CHIP 1	3x43012 4x43012 I:43011	0,0x0000 B:00 00	65535		UINT16 R/W	YES
		0:VI_ERR_A		1:RESET FLAG		
		1:VI_ERR_B		1:RESET FLAG		

		2:VI_ERR_C		1:RESET FLAG		
		3:VI_ERR_D		1:RESET FLAG		
		4:HI_TEMP_ERR		1:RESET FLAG		
		5:CHARGE_PUMP_ERR		1:RESET FLAG		
		6:ALDO5V_ERR		1:RESET FLAG		
		7:AVDD_ERR		1:RESET FLAG		
		8:DVCC_ERR		1:RESET FLAG		
		9:ALDO1V8_ERR		1:RESET FLAG		
		10:ADC_CONV_ERR		1:RESET FLAG		
		11:ADC_SAT_ERR		1:RESET FLAG		
		12:SPI_SCLK_ERR		1:RESET FLAG		
		13:SPI_CRC_ERR		1:RESET FLAG		
		14:CAL_MEM_ERR		1:RESET FLAG		
		15:RESET_OCCURED		1:RESET FLAG		
With this command you can reset individual alert bits in the alert status register of CHIPx						
AIOX RESET STATE MACHINE						
RESET CHIP 1 STATE MACHINE	3x43013 4x43013 I:43012	0,0x0000 B:00 00	1	1:RESET STATE MACHINE	UINT16 R/W	YES
This command restarts the state machine for chip CHIPx . The affected chip will be resetted & initialized completely						

Register NAME Command NAME	MODBUS Register ASCII Command	Register VALUE ASCII Command	NEW REAL VALUE	NEW VALUE	DATA TYPE	DO WRITE
AIOX CONFIG OUTPUT VALUES						
CONFIG OUTPUT VALUE AIOX1	3x44001 4x44001 I:44000	65535,0xFFFF B:FF FF	100	1	UINT16 R/W	YES
		Actual config value for AIOx:N/A		ENTER NEW CONFIG VALUE FOR AIOx		
This command sets for all outputs the standard value in Volt*100 or in mA*100, which are used when the controller is restartet or a watchdog condition has occured and the channel is used as voltage output or current output. For voltage outputs the range is 0 to 1100 (0 to 11,0V). For current outputs the range is 0 to 2500 (0 to 25mA). All IOs with a different usage type will return 65535,0xFFFF.						
CONFIG OUTPUT VALUE AIOX2	3x44002 4x44002 I:44001	65535,0xFFFF B:FF FF	200	2	UINT16 R/W	YES
		Actual config value for AIOx:N/A		ENTER NEW CONFIG VALUE FOR AIOx		
CONFIG OUTPUT VALUE AIOX3	3x44003 4x44003 I:44002	65535,0xFFFF B:FF FF	300	3	UINT16 R/W	YES
		Actual config value for AIOx:N/A		ENTER NEW CONFIG VALUE FOR AIOx		
CONFIG OUTPUT VALUE AIOX4	3x44004 4x44004 I:44003	65535,0xFFFF B:FF FF	400	4	UINT16 R/W	YES
		Actual config value for AIOx:N/A		ENTER NEW CONFIG VALUE FOR AIOx		
INTER PROCESSOR COMMUNICATION						
AIOX IS ONLINE	3x50000 4x50000 I:49999	1,0x0001 B:00 01			UINT16 R/O	
		Actual communication status co-processor to AIOX processor:OK				
This command returns the actual state of the serial communication between the ARM co-processor and the additional processor for the AIOX. =1: Currently the communication is fine =0: There is a mayor problem/hardware fault between the two processors						