

ADT 760 Schnittstellenbefehlssatz (SCPI)



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Appendix

1: SCPI List

Hinweis: Im System ist die Druckeinheit ein unabhängiger Parameter. Die Strom-/Spannungseinheit wird als Parameter zusammen mit ihrem numerischen Wert verwendet.

A1.1 IEEE488.2

S/N	Command	Description	Parameter	Return Value
1	*CLS	The command removes the following register: Standard event register; Query event register; Operational event register; Status byte register; Error queue.	-	-
2	*ESE <enable value>	Set the value of standard event enable register	<NRf>,0-255	-
3	*ESE?	Read the value of standard event enable register	-	<NR1>

S/N	Command	Description	Parameter	Return Value
4	*ESR?	Read the value of standard event register. On execution of the order, the value of standard event register will be reset.	-	<NR1>
5	*IDN?	In inquiring the apparatus marking, the return data shall be divided into 2 parts: a.Product series No; b.Software version No.	-	Product series No. and software Ver. No.
6	*OPC	After the equipment implements *OPC command, set the "operation complete" of standard event register at 1.	-	-
7	*OPC?	After *OPC? Order, return to 1.	-	1
8	*RST	Reset main program	-	-
9	*SRE <enable value>	Set the value of status byte enable register	<NRf>,0-255	-
10	*SRE?	Read the value of status byte enable register	-	<NR1>
11	*STB?	Read the value of status byte register	-	<NR1>
12	*WAI	Wait for completion of operation.	-	-

A1.2 Messung und Konfiguration

S/N	Command	Description	Parameter	Return Value
1	MEASure[:SCALar][:PRESsure<n>]?	Pressure measurement. n valuing 1~6. PRESsure1 means reading the pressure of pressure module under control (the value adjusted by air column under the currently set pressure type); PRESsure2 means reading the pressure of internal module (as original value); PRESsure3 means reading the pressure of external module (as original value); PRESsure4 means reading the pressure of positive pressure module (as original value); PRESsure5 means reading the pressure of negative pressure module (as original value); PRESsure6 means reading atmospheric pressure	-	Measurement value: name of unit
2	MEASure[:SCALar]:CURRent?	Current measurement. For multi-channel measurement, n=1~4. On receiving the command, the controller sets the measurement item as mA measurement, conduct measurement, and return to the measurement value. The current measurement has only one range (-30~30) mA, displaying the fixed bit width of 6.	-	Measurement value
3	MEASure[:SCALar]:VOLTage?	Voltage measurement		Measurement value
4	MEASure[:SCALar]:SWITCh:REGular?	Mechanical Switch status test	-	1 : Open ; 0 : Close.
5	MEASure[:SCALar]:SWITCh:PNP?	PNP Switch status test		1 : Open ; 0 : Close.

S/N	Command	Description	Parameter	Return Value
6	MEASure[:SCALar]:SWITch:NPN?	NPN Switch status test		1 : Open ; 0 : Close.
7	MEASure[:SCALar]:EIECTricity?	Read current measurement value.		Measurement value, unit.
8	SENSe:EIECTricity:FUNcTion "<function>"	Switch measurement type due to "<function>"	Measurement type: "CURRent" : current measurement ; "CURRent:SOURce" :current output "VOLTage" : voltage measurement within (-300~300)mV range ; "SWITch:REGular" : Switch tes; "SWITch:PNP" : PNP switch test; "SWITch:NPN" : NPN switch test.	-
9	SENSe:EIECTricity:FUNcTion?	Read measurement type	-	
10	SENSe:PRESSure<n>:MODE ABSolute GAUGE	Pressure type switching, n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B	ABSolute : Absolute pressure ; GAUGE : Gauge pressure ;	-
11	SENSe:PRESSure<n>:MODE?	Read pressure type, n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B	-	Pressure type
12	SENSe:PRESSure<n>:DIGit 4 5 6 7 MINimum MAXimum	Set pressure value display bit wide. 7 bit is only available for quartz pressure module. n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B	Bit wide: MIN stands for minimum bit wide; MAX stands for maximum bit wide ;	-

S/N	Command	Description	Parameter	Return Value
13	SENSe:PRESSure<n>:DIGit? [MINimum MAXimum]	Set pressure value display bit wide. n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B	MINimum stands for minimum bit wide; MAXimum stands for maximum bit wide; Current set Ignore this parameter	Bit wide
14	SENSe:PRESSure<n>:RANGe:UPPer?	Read the upper limit of current pressure control module	-	Upper limit, unit
15	SENSe:PRESSure<n>:RANGe:LOWer?	Read the lower limit of current pressure control module	-	Lower limit, unit
16	SENSe:PRESSure<n>:ZERO	Zero pressure measurement value of current pressure control module. n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B	-	-
17	SENSe:EIECTricity:ZERO	Zero current electrical measurement value	-	-

S/N	Command	Description	Parameter	Return Value
18	SENSe:VOLTage[:DC]:RANGe? [MINimum MAXimum]	Read voltage measurement range	MINimum stands for minimum range ; MAXimum stands for maximum range ; All available ranges will be returned if ignore this parameter.	Lower limit, upper limit
19	SENSe:CURRent[:DC]:RANGe?	Read current measurement range	-	Lower limit, upper limit
20	SENSe<n>:ONLine?	Read pressure module status. n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B		1 : Online 0 : Offline
21	SENSe<n>:VERSionSW HW	Read pressure module version. n=1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B	SW : Software Version HW : Hardware Version	

A1.3 Ausgabe

S/N	Command	Description	Parameter	Return Value
1	[SOURce:]PRESsure<pressure_value>	Set targeted pressure value and output pressure.	Pressure value : <numeric_value> , unit is the current set unit of system	-
2	[SOURce:]PRESsure?	Read target pressure value	-	Target value, unit
3	[SOURce:]PRESsure:LIMit:UPPer?	Read pressure output upper limit	-	Upper limit, unit
4	[SOURce:]PRESsure:LIMit:LOWer?	Read pressure output lower limit	-	Lower limit, unit
5	[SOURce:]PRESsure:SLEW<value>	Set pressure control rate	Pressure control rate: <numeric_value> , unit is the current set unit of system	-
6	[SOURce:]PRESsure:SLEW? [LOWer UPPer]	Read pressure control rate	LOWer: Read lower limit UPPer: Read upper limit Read current pressure control rate if ignore this parameter	Pressure control rate, unit
7	[SOURce:]PRESsure:SLEW:TYPEMAX CUSTom	Set pressure control rate type	Max: Maximum rate Custom: Custom rate	-
8	[SOURce:]PRESsure:SLEW:TYPE?	Read pressure control rate type	-	Pressure control rate type
9	[SOURce:]PRESsure:TOLerance<value>	Set pressure stability	Pressure stability: <numeric_value> , %FS	-
10	[SOURce:]PRESsure:TOLerance?	Read pressure stability	-	Pressure stability

S/N	Command	Description	Parameter	Return Value
11	OUTPut[:PRESSure]:MODE CONTrol MEASure VENT	Set controller working type	CONTrol ; MEASure ; VENT.	-
12	OUTPut[:PRESSure]:MODE?	Read controller working type	-	controller working type
13	OUTPut[:PRESSure]:STABLE?	Read pressure stability status	-	1 : Stable ; 0 : Unstable
14	OUTPut:GPIO<n>[:STATus] <Boolean> LOW HIGH	Set IO port status , n=1~30 , stands for the IO port pin position. For example, GPIO2 stands for the second pin of IO port.	1 or HITH : High electrical level ; 0 or LOW : Low electrical level	-
15	OUTPut:GPIO<n>[:STATus]?	Read IO port status	-	1 : High electrical level ; 0 : low electrical level
16	OUTPut:24V[:STATe] 0 1 OFF ON	Set 24V power status	1 or ON 0 or OFF	OK, ERROR
17	OUTPut:24V[:STATe]?	Read 24V power status	-	24V power status
18	[OUTPut:]CURRent:SOURce<Value>[,<Mode>]	Current output	Value : current output value Mode : Output mode 0 : Original value 1 : End value Default is 1	
19	[OUTPut:]CURRent:SOURce?	Read current output value		

A1.4 Kalkulation

S/N	Command	Description	Parameter	Return Value
1	CALCulate[:PRESSure]:LIMit:LOWer<low>	Set pressure lower limit	Pressure lower limit, unit is the current set unit of system	-
2	CALCulate[:PRESSure]:LIMit:LOWer?	Read pressure lower limit	-	Pressure lower limit, unit
3	CALCulate[:PRESSure]:LIMit:UPPer<high>	Set pressure upper limit	Pressure upper limit, unit is the current set unit of system	-
4	CALCulate[:PRESSure]:LIMit:UPPer?	Read pressure upper limit	-	Pressure upper limit, unit
5	CALCulate[:PRESSure]:LIMit:STATe<Boolean> ON OFF	Set whether the output range limit is enabled	1 or ON : Enable 0 or OFF : Disable	-
6	CALCulate[:PRESSure]:LIMit:STATe?	Inquire whether the output range limit is enabled	-	1 : Enable 0 : Disable
7	CALCulate[:PRESSure]:LIMit:VENT<value>	Set venting pressure	Venting pressure: <numeric_value> , unit is the current set unit of system	-
8	CALCulate[:PRESSure]:LIMit:VENT?	Read venting pressure	-	Venting pressure, unit

A1.5 System

S/N	Command	Description	Parameter	Return Value
1	SYSTem:VERsion? [<module>]	Read module SCPI Ver No.. Default is the system SCPI version number	"APPLication" : Main program version "CONTroller:FIRMWare" : Controller firmware version "CONTroller:HARDware" : Controller hardware version "EIECTricity:FIRMWare" : Electrical measurement board firmware version "EIECTricity:HARDware" : Electrical measurement board hardware version	Version number
2	SYSTem:ERRor[:NEXT]?	Check next error item in the error queue, and delete the item from the queue. The error queue can store 50 pieces of error information. The last piece will be replaced by -350 "Queue overflow" in the case of over 50 pieces. System power off or *CLS order can remove error queue.	-	Error information
3	SYSTem:DATE?	Read system date	-	Year, month, day
4	SYSTem:TIME?	Read system time	-	Hour, minute, second
5	SYSTem:KLOCK<Boolean> ON OFF	Set screen lock	1 or ON: Lock screen ; 0 or OFF: Unlock screen	-
6	SYSTem:KLOCK ?	Read screen lock status	-	1 : Lock 0 : Unlock
7	SYSTem:MAINTenance:MODE<Boolean> ON OFF	Set system maintenance status	1 or ON: Maintenance start 0 or OFF: Maintenance stop	-

S/N	Command	Description	Parameter	Return Value
8	SYSTem:MAINtenance:STATe?	Read system maintenance status	-	Outlet pressure, positive, and negative pressure venting status InProgress : Being venting Completed : Complete venting Failed : Venting failed
9	SYSTem:COMMunicate:SOCKet:WLAN[:STATe] <Boolean> ON OFF	Set WIFI status NOTE : The serial port will be disabled if WiFi is on. During conversion time, communicate with controller through the Ethernet.	1 or ON : Turn on WIFI ; 0 or OFF : Turn off WIFI	-
10	SYSTem:COMMunicate:SOCKet:WLAN[:STATe]?	Read WIFI Status	-	1 : WIFI is on ; 0 : WIFI is off
11	SYSTem:COMMunicate:SOCKet:WLAN:ADDRess<IP address>	Set WIFI IP address	IP address : Without quotation marks, the format is <NR1>.<NR1>.<NR1>.<NR1>	-
12	SYSTem:COMMunicate:SOCKet:WLAN:ADDRess?	Read WIFI IP address	-	IP address
13	SYSTem:COMMunicate:SOCKet:WLAN:MASK <IP address>	Set subnet mask	IP address : Without quotation marks, the format is <NR1>.<NR1>.<NR1>.<NR1>	-
14	SYSTem:COMMunicate:SOCKet:WLAN:MASK?	Read subnet mask	-	IP address
15	SYSTem:COMMunicate:SOCKet:WLAN:GATeway <IPaddress>	Set WIFI gateway	IP address : Without quotation marks, the format is <NR1>.<NR1>.<NR1>.<NR1>	-
16	SYSTem:COMMunicate:SOCKet:WLAN: GATeway?	Read WIFI gateway	-	IP address
17	SYSTem:COMMunicate:SOCKet:WLAN:MAC?	Read WIFI MAC address	-	MAC address
18	SYSTem:COMMunicate:SOCKet:WLAN:DHCP[:STATe] <Boolean> OFF ON	Set WIFI DHCP status	1 or ON: DHCP on; 0 or OFF: DHCP off	-

S/N	Command	Description	Parameter	Return Value
19	SYSTem:COMMunicate:SOCKet:WLAN:DHCP[:STATe]?	Read WIFI DHCP status	-	1: DHCP on; 0: DHCP off
20	SYSTem:COMMunicate:SOCKet:WLAN:SSID? [ALL]	If this parameter is ALL, the search is performed, and returns all the search to the SSID name and encryption methods. If ignoring parameters, returns the current connection name and SSID encryption, no connection or not to return to the hot search""	-	{{ "ssid: encryption method" }}
21	SYSTem:COMMunicate:SOCKet:WLAN:CONNect <ssid>,encryptionMode[,<password>]	Connect to specific hot spot	1) ssid: Hot spot name, string with quotation marks ; 2) encryptionMode: encryption method , OPEN WPA WPA2 ; 3) password: password, string with quotation marks	-
22	SYSTem:COMMunicate:SOCKet:WLAN:CONNect?	Read WIFI connection status	-	Successfully, Initialization, SSIDNotFound SSIDNotConfigured, JoinFaile ScaningConfiguredSSID WaitingIPConfiguration ModuleJoinedListeningSockets
23	SYSTem:COMMunicate:SOCKet:WLAN:DISConnect	Disconnect WIFI	-	-
24	SYSTem:COMMunicate:SOCKet:WLAN:DBM?	Read WIFI DBM value	-	DBM value , uint is dBm

A1.6 Status

S/N	Command	Description	Parameter	Return Value
1	STATUS:OPERation:ENABLE<enable value>	Set operation status enable register	Enable value: <numeric_value>,0-65535	-
2	STATUS:OPERation:ENABLE?	Read operation status enable register	-	<enable value>:NR1
3	STATUS:OPERation[:EVENT]?	Read the value of operation status register. On execution of the command, the value of operation status register shall be reset.	-	<value>:NR1
4	STATUS:QUEStionable:ENABLE<enable value>	Set problem data enable register	Enable value : <numeric_value>,0-65535	-
5	STATUS:QUEStionable:ENABLE?	Read problem data enable register	-	<enable value>:NR1
6	STATUS:QUEStionable[:EVENT]?	Read the value of problem data incident Register. The value of the problem data enable register will be cleared after the command is executed.	-	<value>:NR1
7	STATUS:PRESet	Remove the value operation status enable register and problem data enable register	-	-

A1.7 Einheit

S/N	Command	Description	Parameter	Return Value
1	UNIT:PRESSure<n> <unit_name> <unit_ID>	Set pressure unit	Unit : Can be a unit name or unit ID, unit name is a string with quotes, unit ID is number.	-
2	UNIT:PRESSure<n>?	Read pressure unit	-	Unit name
3	UNIT:PRESSure<n>:ID?	Read system unit ID n= 1~3 1. Internal pressure module 2. External pressure module A 3. External pressure module B		Unit ID

A1.8 Datenspeicherung

S/N	Command	Description	Parameter	Return Value
1	DATALOGGER:COUNT?		Read the total number of data records	Result quantity
2	DATALOGGER:CATalog? <Index>,<count>	Index: Starting position count : Qty. (0-5)	Read data record brief information (GUID, record name, operator, notes, record time, sampling number, sampling interval)	ClassName , Base64 character data , CRC16 check code (Data obtained by anti serialization)
3	DATALOGGER:LOGGerinfo? <guid>	guid : Unique identifier for data records	Read a record information (the number of channels, channel information, etc.)	ClassName , Base64 character data , CRC16 check code (Data obtained by anti serialization)

S/N	Command	Description	Parameter	Return Value
4	DATALOGGER:DATA? <guid>,<start>,<length>	guid : Unique identifier for data records start : Relative starting position length : Length of information reading in one time (less than 750 bytes)	Read log data	data , Base64 character data , CRC16 check code (Data need to be converted into an array of byte, and then converted to float values for presentation)
5	DATALOGGER:DELeTe<guid>	guid : Unique identifier for data records	Delete record	
6	DATALOGGER:CLEAr		Clear all records	
7	DATALOGGER:SEARhcount ? <Condition>	Condition : Condition, strings with quotation marks Format : "Type,Param" Type: Searching method 0: Result name 1: operator 2: Note 3: Start and stop time Param: The parameters of the search method, separated by a comma. Muilt-condition searching are available. eg: DATALOGGER:SEARhcount? "0,test;1,sun;2,heihei;3,2000/01/28,2016/10/28"	Number of searching result which meets the condition	Result quantity
8	"DATALOGGER:SEARhinfo[:ECHO]? < Condition>,< Index>,< count>"	Conditon: Same as above Index: Starting position count : Qty. (0-5)	Read the brief information that satisfies the condition data record	ClassName , Base64 character data , CRC16 check code (Data obtained by anti serialization)

A1.9 HART

S/N	Command	Description	Parameter	Return Value
1.	HART:SUPPLYMODE?		Read power supply type	0 : Internal ; 1 : External ;
2.	HART:SUPPLYMODE Int Ext 0 1	0 or Int : Internal ; 1 or Ext : External ;	Set power supply type (the electrical measurement will switch to HART measurement if power supply type is changed)	
3.	HART:SEARCHStart Stop Zero[,<Numeric>][,<Numeric>]	Start : Start searching ; Stop : Stop searching ; Zero : Only search where address is 0 NOTE: address range parameter can be added follow "Start" and "Stop", such as ",0,15"	HART search ;	
4.	HART:DEVICES?		Return to the searched device list (address and type)	
5.	HART:CONnect<address>	Address:	Connect to searched device	
6.	HART:ONLDEvice:PROcEss?			PV or 0 : Process variable ; AO or 1 : Digital current value ; % or 2 : Percentage of pressure range ; SV or 3 : Secondary variable ; TV or 4 : Tertiary variable ; FV or 5 : Quaternary variable ;
7.	HART:ONLDEvice:PROcEss PV AO % SV TV FV 0 1 2 3 4 5	PV AO % SV TV FV 0 1 2 3 4 5	Switching process variable	

S/N	Command	Description	Parameter	Return Value
8.	HART:ONLDEvice:PARAmeter? <name>	name: parameter name	Read parameter	
9.	HART:ONLDEvice:PARAmeter[:ECHO] <name>,< "value" > <value>	name: parameter name value: Value (with a quoted string, or number)	Set parameter	
10.	HART:ONLDEvice:INFO?	No or < parameter name > parameter name listed below: Tag Manufacturer Devicetype Deviceid writeprotect date message descriptor finalassemble preambles universalrev hardwarerev softwarerev devicerev	Return HART device information	Returns all device information values when no parameters are entered; Corresponding parameter values returns when the parameter name is specified;
11.	HART:ONLDEvice:SENSor?	No or < parameter name > parameter name listed below: sn unit lrl url minspan	Return sensor information	Returns all device information values when no parameters are entered; Corresponding parameter values returns when the parameter name is specified;
12.	HART:ONLDEvice:OUTput?	No or < parameter name > parameter name listed below: unit lrv urv damping	Return HART device output parameter value	Returns all device information values when no parameters are entered; Corresponding parameter values returns when the parameter

S/N	Command	Description	Parameter	Return Value
		transferFunction		name is specified;

Appendix 2: Einheiten

S/N	Unit Name	Unit Name in System	Unit ID in System
1	Pa	Pa	1130
2	kPa	kPa	1133
3	MPa	MPa	1132
4	hPa	hPa	1136
5	bar	bar	1137
6	mbar	mbar	1138
7	torr	torr	1139
8	atm	atm	1140
9	psi	psi	1141
10	gf/cm ²	GF	1144
11	kgf/cm ²	KGF	1145
12	inH ₂ O@4°C	INH2O	1147
13	inH ₂ O@68°F		1148
14	mmH ₂ O@4°C	H2O	1150
15	mmH ₂ O@20°C	mmH2O@20C	1151
16	ftH ₂ O@4°C	ftH2O@4°C	1153

S/N	Unit Name	Unit Name in System	Unit ID in System
17	ftH ₂ O@68°F	ftH2O@68°F	1154
18	inHg@0°C	inHg	1156
19	mmHg@0°C	Hg	1158
20	mtorr	mtorr	2001
21	lb/ft ²	lb/ft2	2002
22	tsi	tsi	2003
23	psf	psf	2004
24	inH ₂ O@60°F	inH2O@60°F	2005
25	ftH ₂ O@60°F	ftH2O@60°F	2006