ADT282 Commands set- User Version

1 Commands Instruction

(1)Each command includes two parts: **mnemonic** and **parameter**. The **mnemonic** and **parameter** are separated by a space;

For example : MEASure[:SCALar]:CH? <value>，MEASure[:SCALar]:CH? is the mnemonic，<value> is the parameter to be input，and they need to be separated by a space. If use this command for acquiring the current measured value, just input MEASure:CH? PV

(2)About the mnemonic

- the [] in mnemonic is optional, can be omitted.

For example : MEASure[:SCALar]:AELectricity? It can be:**MEASure:SCALar:AELectricity?** Or **MEASure:AELectricity?**

- the (num1:num2) in mnemonic indicates range of number, it needs to be input with the actual number.

For example : SENSe:ELECtricity:TCCHannel(1:4)? if use this command for acquiring the configuration of the first TC channel, just input: SENSe:ELECtricity:TCCHannel1?

(3)About the parameter

Each parameter in this set is marked with**<>** (do not enter angle brackets when converting to actual instructions) and separated by commas.

(4) Terminator

The SCPI command must include a command terminator, which can be one of the follows (excluding double quotation marks): "\r\n", "\r", "\n" or "\0".

1.1 IEEE488.2 common commands

No	Commands	Description	Parameter	Returned value
1	*CLS	Clear the following registers: Standard event register; Query event register; Operation event register; Status byte register; Error queue.	-	-
2	*IDN?	Instrument identification query, return 2 parts of data: a. Product serial number; b. Software version; c. Sub-module type d. Name Sub-module type and name are supported in version later than 0.0.0.23.	-	Product serial number, Software version
3	*RST	Program reset	-	-

1.2 Measurement commands

No	Commands	Description	Parameter	Returned value
1.	MEASure:VALUE? [<UnquoStr>]	Read measured value of the channel	None: return the displayed channel value. ALL: return the displayed channel value and barometric value. CH1: return CHI measured value CH2: return CH2 measured value	Separated by semicolon; 0: measure item 1: measured value 2: unit ID TC

			TMDIFF: return the differential temperature measured value. EMHA：return the measured value of external module A. EMHB： return the measured value of external module B. ATM: return barometric measured value.	3：cold junction value 4：cold junction ID 5：origin value 6：origin value ID RTD 3：resistanve value 4：resistance unit ID ATM： 3：temperature value 4：temperature unit ID
2.	MEASure:FUNCtion?	Read all channel items	None	Separated by semicolon； 0：channel name 1：measure item
3.	MEASure:FUNCtion CH1|CH2,TC|RTD	Set measurement channel item	0：channel name CH1|CH2 1：measure item TC|RTD	None
4.	MEASure:RANGe? [CH1|CH2 |EMHA|EMHB|ATM]	Read channel range	None，return the ranges of displayed channel and ATM CH1: return CHI range CH2：return CH2 range TMDIFF: return the range of differential temperature channel EMHA：return the range of external module A EMHB：return the range of external moduleB ATM: return the range of ATM channel	

5.	MEASure:TCCOnfig? CH1|CH2	Read TC configuration	Channel name CH1|CH2	Auto CJC: Sensor type, temperature unit ID, resolution, CJC type Fixed CJC: Sensor type, temperature unit ID, resolution, CJC type, fixed value
6.	MEASure:TCCOnfig CH1| CH2,<UnquoStr>,<Numeric>,<Numeric>[,<Numeric>[,<Numeric>]]	Set TC configuration Note: available when selecting TC measure in calibrator mode	0 channel name CH1|CH2 1 sensor name, such as：K 2 unit ID 3 resolution Optional parameter: 4 CJC type(0 auto 1 fixed) 5 fixed CJC value	None
7.	MEASure:RTDConfig? CH1|CH2	Read RTD configuration	None	0: Sensor name 1: Temperature unit ID 2：resolution 0-0 |1-0.1| 2-0.01，|3-0.001
8.	MEASure:RTDConfig CH1| CH2,<UnquoStr>,<Numeric>,<Numeric>	Set RTD configuration	0“sensor name” 1 unit ID 2 resolution 0,1,2,3	None
9.	MEASure:ZERO CH1|CH2|EMHA|EMHB	Zero current channel	CH1-TM1 CH2-TM2 EMHA-external module A EMHB-external module B	None
10.	MEASure:CZERo CH1|CH2 |EMHA|EMHB	Cancel zero current channel	CH1-TM1 CH2-TM2 EMHA- external	None

			module A EMHB- external module B	
11.	MEASure:FILTer:ENABle? CH1|CH2|EMHA|EMHB	Read the filter status of current channel	CH1-TM1 CH2-TM2 EMHA- external module A EMHB- external module B	0 disable 1 enable
12.	MEASure:FILTer:ENABle CH1|CH2|EMHA|EMHB,0|1	Enable filter of current channel	CH1-TM1 CH2-TM2 EMHA- external module A EMHB- external module B, 0 disable 1 enable	None
13.	MEASure:FILTer? CH1|CH2|EMHA|EMHB	Read the current measure filter configuration	CH1-TM1 CH2-TM2 EMHA- external module A EMHB- external module B	0:filter type , 0|1 first-order or average 1:filter coefficient or sample quantity 2:de-extreme value pairs
14.	MEASure:FILTer CH1|CH2|EMHA|EMHB ,0|1,<Numeric>[,<Numeric>]	Set the current measure filter configuration	CH1-TM1 CH2-TM2 EMHA- external module A EMHB- external module B 0:filter type，0|1 first-order or average 1:filter coefficient or sample quantity 2:de-extreme value pairs	None
15.	CALibrator:MEASure:MINMax:ENABle? CH1|CH2|EMHA|EMHB	Read the statistic enable or not	CH1-TM1 CH2-TM2 EMHA- external module A EMHB- external module B	0 disable 1 enable
16.	MEASure:MINMax:ENABle CH1|CH2|EMHA|EMHB,0|1	Set the statistic enable or not	0 disable 1 enable	None
17.	MEASure:RANGe? CH1|CH2|EMHA|EMHB	Read the range information of current measurement item	Channel name	Range

1.3 System Commands

No	Commands	Description	Parameter	Returned value
1.	SYSTem:ERRor[:NEXT]?	Read command execution error information	None	Error message on stack top
2.	SYSTem:LOCK?	Query lock screen state	None	0 Non-lock screen

				1 Lock screen
3.	SYSTem:LOCK <Boolean>|ON|OFF	Set lock screen state	0|OFF Non-lock screen 1|ON Lock screen	None
4.	SYSTem:VERSion? [\"APPLication\"|\"BT:FIRMware\"|\"DTM:FIRMware\"|\"DTM:HARDware\"]	Read device version	Optional parameter: "APPLication"Main program version， "BT:FIRMware"Bluetooth version，" "DTM:FIRMware"DTM module firmware version "DTM:HARDware" DTM module hardware version	Without parameters return to the main program version by default. With parameters, returns the version of the corresponding parameters
5.	SYSTem:DATE?	Read system date	None	Date（yyyy,MM,dd）
6.	SYSTem:DATE <Numeric>,<Numeric>,<Numeric>	Set system date	Year、Month、Date	None
7.	SYSTem:TIME?	Read system time	None	Time（HH,mm,ss）
8.	SYSTem:TIME <Numeric>,<Numeric>,<Numeric>	Set system time	Hour、Minute、Second	None
9.	SYSTem:TIME:FORMat?	Read system time format	None	Two parameters separated by comma . Is it a 24-hour clock? Current time zone
10.	SYSTem:TIME:FORMat <Boolean>,<Numeric>	Read system time format	Two parameters separated by comma , Is it a 24-hour clock Timezone UTC value	None
11.	SYSTem:TBEEp?	Query key tone state	None	0 OFF 1 ON
12.	SYSTem:TBEEp <Boolean>|ON|OFF	Set key tone state	0|OFF	None

			1|ON	
13.	SYSTem:PBEEp?	Query the state of the prompt tone	None	0 OFF 1 ON
14.	SYSTem:PBEEp <Boolean>|ON|OFF	Set the state of the prompt tone	0|OFF 1|ON	None
15.	SYSTem:ORBEep?	Query alarm tone state of out range	None	0 OFF 1 ON
16.	SYSTem:ORBEep <Boolean>|ON|OFF	Set alarm tone state of out range	0|OFF 1|ON	None
17.	SYSTem:STBEep?	Query stable prompt tone state	None	0 OFF 1 ON
18.	SYSTem:STBEep <Boolean>|ON|OFF	Set stable prompt tone state	0|OFF 1|ON	None
19.	SYSTem:VOLume?	Read volume percentage	None	Volume percentage
20.	SYSTem:VOLume <Numeric>	Set system volume	Volume percentage	None
21.	SYSTem:LANGuage?	Read current language type	None	Current
22.	SYSTem:LANGuage <UnquoStr>[,<Boolean>]	Set current lanauage	Parameter:language name zh-CN, Optional parameter: whether to restart the device, the default restart	None
23.	SYSTem:LANGuage:CONFig?	Read the list of currently supported languages	None	Language list
24.	SYSTem:LANGuage:CONFig <QuoteStr>	Set the list of currently supported languages	Language list（separated by commas）	None
25.	SYSTem:BLUEtooth:STATe?	Read Bluetooth state	None	0 OFF 1 ON
26.	SYSTem:BLUEtooth:STATe <Boolean>|ON|OFF	Set Bluetooth state	0|OFF	None

			1|ON	
27.	SYSTem:BLUEtooth:NAMe	Read Bluetooth name	None	Bluetooth name
28.	SYSTem:BLUEtooth:NAMe <UnquoStr>	Set Bluetooth name	Name（Without quotes）	None
29.	SYSTem:BRIGhtness? Percentage|Value	Read screen brightness	Percentage or value	Screen brightness
30.	SYSTem:BRIGhtness Percentage| Value,<Numeric>	Set screen brightness Brightness value range: Value:200-4096 Percentage :0-100 When the brightness value is greater than 4096 or 100, it is automatically set to the maximum brightness. When the brightness value is less than 0 or 200, it is automatically set to the minimum brightness.	Parameter 1: Percentage or value Parameter 2: Brightness value	None
31.	SYSTem:BATTery:ONLIne?	Read if the battery is online	None	1 : Battery online 0 : Battery offline
32.	SYSTem:BATTery:STATus?	Read current battery state	None	0: Battery communication is abnormal 1: Battery communication is normal
33.	SYSTem:BATTery:CAPacity?	Read current battery level	None	Current battery level，total battery power （Unit :mAh）
34.	SYSTem:BATTery:Backlight?	Check whether the backlight is on （backlight time is not equal to never）	None	0: auto backlight off close 1: auto backlight off open
35.	SYSTem:BATTery:Backlight 0|1	Open/off backlight，default 30s	0 close，1 open	None

36.	SYSTem:BATTery:BLOFf?	Query auto backlight off time	None	Return auto backlight off option， Represented time: 0-never, 1-30s, 2-1mins, 3-5mins, 4-15mins, 5-30mins.
37.	SYSTem:BATTery:BLOFf 0|1|2|3|4|5	Set auto backlight off time	Auto backlight off option 0|1|2|3|4|5 Represented time: 0-never, 1-30s, 2-1mins, 3-5mins, 4-15mins, 5-30mins.	None
38.	SYSTem:BATTery:ASLeep?	Query the auto-sleep time after turning off the backlight	None	Return auto-sleep option serial number:: Serial number represented time: 0-never, 1-1mins, 2-5mins, 3-15mins, 4-30mins
39.	SYSTem:BATTery:ASLeep 0|1|2|3|4	Set the automatic sleep time after turning	Auto-sleep option: 0|1|2|3|4	None

		off the backlight	represented time: 0-never, 1-1mins, 2-5mins, 3-15mins, 4-30mins	
40.	SYSTem:BATTery:POTime?	Query the automatic sleep time after turning off the backlight	None	Return auto power- off option serial number: Serial number represented time: 0-never, 1-5mins, 2-15mins, 3-30mins, 4-1h, 5-2h
41.	SYSTem:BATTery:POTime 0|1|2|3|4|5	Set the automatic shutdown time after device sleep	Auto power- off option serial number: Serial number represented time: 0-never, 1-5mins, 2-15mins, 3-30mins, 4-1h, 5-2h	None

1.4 Log commands

No	Commands	Description	Parameter	Returned value

1.	TRACe:CATalog?	Search for the file name of all logs	None	List of log file name
2.	TRACe#(-1)[:DATA]?	Read log data N=1~10，Trace1 is the latest，Trace10 is the oldest	None	Log data
3.	TRACe:STARt	Start logging	None	None
4.	TRACe:STOP	Stop logging	None	None
5.	TRACe:STATe?	Query the log status	None	RUNNING STOPPED

Appendix 1: SCPI unit Id list

Unit Id	Unit
2000	Text unit
32767	Blank unit
1211	mA
1212	μA
1209	A
1240	V
1243	mV
1281	Ω
1284	kΩ
1283	MΩ
1000	K
1001	℃
1002	℉

1003	°R
999	°Re
1005	°
1342	%
1133	kPa
1130	Pa
1131	GPa
1132	MPa
1134	mPa
1135	µPa
1136	hPa
1137	bar
1138	mbar
1139	torr
1140	atm
1141	psi
1142	psia
1143	psig
1144	gf/cm^2
1145	kgf/cm^2
1147	inH2O@4°C
1148	inH2O@68°F
1150	mmH2O@4°C
1151	mmH2O@20°C
1153	ftH2O@4°C

1154	ftH2O@68°F
1156	inHg@0°C
1158	mmHg@0°C
2001	mtorr
2002	lb/ft^2
2003	tsi
2004	psf
2005	inH2O@60°F
2006	ftH2O@60°F
2007	cmH2O@4°C
2008	mH2O@4°C
2009	cmHg@0°C
2010	mHg@0°C
2011	kgf/m^2

Appendix 2: Error Definition

No	Error code	Description of error	Explanation
1	0	No error	No error
		Command error	
2	120	Commandparameter error	Command parameter error
3	-108	Parameter not allowed	Too many parameters，or command without parameters have parameters
4	-109	Missing parameter	Lack parameter
5	-110	Command header error	Command header error
6	-114	Header suffix out of range	Command suffix out of range
7	-123	Numeric overflow	Numeric overflow，the absolute value of the index of the number is greater than 43
8	-151	Invalid string data	Invalid string data，eg.quotation mark missmatch
9	-171	Invalid expression	Invalid expression eg.bracket mismatch
		Execution error	
10	-200	Execution error	Execution error
11	-221	Settings conflict	Settings conflict
12	-222	Data out of range	The parameter value exceeds the valid range of the command
13	-223	Too much data	Too much data to handle
14	-224	Illegal parameter value	Illegal parameter value
15	-230	Data corrupt or stale	Invalid data，or data is being read, no valid data yet
16	-240	Hardware error	Hardware error
17	-256	File name not found	File name not found
18	-282	Illegal program name	Illegal program name

No	Error code	Description of error	Explanation
19	220	Measure error	Measure error
20	221	Failed to set meaure function	Failed to set meaure function
21	222	Failed to read measure value	Failed to read measure value
22	223		
23	224		
24	240	Control error	Control error
25	241		
26	242		
27	243		
28	260	Calibration error	Calibration error
29	261	Calibration secured	The device is in calibration protection state and unable to perform calibration
30	262	Invalid calibration secure code	Invalid calibration secure code
31	263	Missing calibration value	This error occurs when the calibration value is set without setting the calibration point during current/voltage calibration
32	264	Missing calibration data	This error occurs when calibration points are set continuously without calibration values set
33	265	Failed to set calibration function	Failed to set calibration function
34	266	Calibration data is not enough	When saving the calibration data, this error occurs if the calibration data does not reach 3 points
35	271	Setion_name_not_found	Section name not found
36	272	Key_name_not_found	Keyname not found
37	291	Update secured	The device is in update protection state and cannot be update
38	292	Invalid update secure code	Invalid update secure code
39	293	Not found the service pack	Not found the update pack

No	Error code	Description of error	Explanation
40	294	The service pack unavailable	The update pack unavailable
41	295	AppUpdate not found	AppUpdate.exe not found
Equipment error			
42	-310	System error	System error
43	-311	Memory error	Memory error
44	-350	Queue overflow	Error queue overflow
45	-360	Communication error	Communication error
46	301	Internal module is not connected	Internal module is not connected
47	302	External module is not connected	External module is not connected
48	303	Supply module is not connected	Positive pressure module is not connected
49	304	Vacuum module is not connected	Negative pressure module is not connected
50	361	Open WLAN Failed	Open WIFI failed
51	362	Set WLAN address mode failed	Set WIFI address mode failed
52	363	Set WLAN address failed	Set WIFI address failed
53	364	Communication port to WIFI module is not open	Communication port to WIFI module is not open
54	365	WLANisnotconnected	WIFI is not connected