

## ADT685 SCPI Commands Set

### 1 Commands Instruction

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

For example **PRESsure <Numeric>**, **PRESsure?** is the mnemonic, **<Numeric>** is the parameter to be input, and they need to be separated by a space. If the current pressure unit is kPa, enter **PRESsure:UNIT 1133**.

#### (2) About the parameter

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

The **|** in the parameter indicates that one of the left and right parameters can be selected, such as **PRESsure:UNIT <Numeric>|<UnquoStr>**, which means that you can use either the unit id or the unit name to set the pressure unit, such as: setting the current pressure unit kPa, you can enter **PRESsure:UNIT? 1133**, or enter **PRESsure:UNIT? KPA**.

#### (3) 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 error queue	-	-
2	*IDN?	Instrument identification query, return 2 parts of data: a. Product serial number; b. Software version;	-	Product serial number, Software version
3	*RST	Program reset	-	Return OK and then rest the program

## 1.2 Pressure commands

No	Commands	Description	Parameter	Returned value
1.	PRESSure? <Numeric>	Read current pressure value	Option: 0,1,2,3,4,255. When there is no parameter, it is the same as the parameter being 0.	0 or none: pressure value+unit Id, 1: pressure value+unit Name 2: pressure value+barometric pressure+unit Id 3: pressure value+barometric pressure+unit Name 4: pressure value+barometric pressure (default unit) 255: pressure value+barometric pressure +pressure unit Id+temperature+temperature unit id
2.	PRESSure:UNIT?	Read current pressure unit	option: 0, 1, 2 When there is no parameter, it is the same as the parameter being 0.	0 or none: pressure unit Id 1: pressure unit name 2: pressure unit Id, pressure unit name

3.	PRESSure:UNIT <Numeric> <UnquoStr>	set current pressure unit	option: D or unquoted unit name	refer to command attached list 1
4.	PRESSure:UNIT:NEXT	Switch the pressure unit upward or downward in the order of the pressure list	parameter: none or 1 ➤ 1 indicates to switch the pressure unit downward (or backward), when there is no parameter, it is the same as this ➤ -1 indicates to switch the pressure unit upward (or forward)	none
5.	PRESSure:PTYPE?	Read current pressure type	None	G: Gauge pressure A: Absolute pressure
6.	PRESSure:PTYPE G A	Set current pressure type	1 parameter G: Gauge pressure A: Absolute pressure	None
7.	PRESSure:ONLine?	Whether the pressure module is online?	None	0: offline 1: online
8.	PRESSure:RANGe?	Read pressure module's range	None, 0 or 1	None or 0: lower limit, upper limit, unit ID, pressure type(G/A/D); 1: lower limit, upper limit, unit name, pressure type(G/A/D)
9.	PRESSure:ZERO	pressure module zero	None	None
10.	PRESSure:RESolution?	Read pressure resolution	None	4 5 6

11.	PRESsure:RESolution <Numeric>	Set pressure resolution	4 or 5 or 6	None
12.	PRESsure:FILTer?	Read filter parameter	None or 0: read current filter information; 1: read all filter information.	Three returns format of read current filter information: No filter: 0 First-order filter: 1, first-order filter coefficient Average filter: 2, de-extreme value pairs, filter window size. When reading all filter information, return all of the following information in order, separated by comma. Filter type: no filter, first-order filter, average value filter first-order filter coefficient; average value filter window; average value filter de-extreme value pairs
13.	PRESsure:FILTer 0 1 2 [,<Numeric>,<Numeric>]	Set filter type	no filter: 0 first-order filter: 1, coefficient average value filter: 2, window size, de-extreme value pairs	None
14.	PRESsure:PEAK?	Read pressure peak value	None	Min, max, unit ID
15.	PRESsure:PEAK:RESEt	Reset pressure peak value	None	None
16.	PRESsure:TARE?	Read pressure tare function status	None	Tare function status (0= disable, 1=enable), tare value, unit ID

17.	PRESSure:TARE	Set pressure tare function status	<p>parameters are separated by English comma</p> <ul style="list-style-type: none"> <li>➤ Tare function status (0= disable, 1=enable)</li> <li>➤ Tare value, can be omitted(it means not to reset the tare)</li> <li>➤ Unit ID, can be omitted(it means choose the default unit)</li> </ul>	None
18.	PRESSure:ALARM?	Read alarm setting information	None	Alarm enable or not (0=disable, 1=enable), lower alarm limit, upper alarm limit, unit ID
19.	PRESSure:ALARM <Numeric>	Set alarm information	<p>Parameters are separated by comma</p> <ul style="list-style-type: none"> <li>➤ 1: Alarm enable or not (0=disable, 1=enable)</li> <li>➤ 2: lower alarm limit, can be omitted, but must together with 2 and 3</li> <li>➤ 3: upper alarm limit, can be omitted</li> <li>➤ 4: Unit ID, can be omitted(it means choose the default unit)</li> </ul>	None
20.	PRESSure:RATE?	Read pressure measure rate	None	<p>Return:</p> <ul style="list-style-type: none"> <li>➤ mode (measurement type)</li> <li>➤ time/ second</li> <li>➤ data number</li> </ul>
21.	PRESSure:RATE	Set pressure measure rate	<ul style="list-style-type: none"> <li>➤ 1: mode(measurement type: 1=normal power, 2=low power)</li> </ul>	

			<ul style="list-style-type: none"> <li>➤ 2: time/ second (1~60);</li> <li>➤ 3: data number (1~500);</li> </ul>	
22.	PRESsure:UNITs?	Read pressure unit display list	<ul style="list-style-type: none"> <li>➤ 0 or none= return unit ID list; 1= return unit name list</li> </ul>	<p>Two formats:</p> <p>1. None or =0, return unit ID list, separated by comma.</p> <p>2. =1, return unit name list, separated by comma</p>
23.	PRESsure:CUNIts?	Read custom pressure unit display list	None	<p>Return: The unit list is separated by comma, and the data in the custom unit are separated by semicolon.</p> <p>data in the custom unit : id;RefId;Coefficients; Name;DisplayName, as below:</p> <ul style="list-style-type: none"> <li>➤ id: custom unit ID, must be negative integer [-32767, 0];</li> <li>➤ RefId: Reference unit for custom unit, generally is 1133, means kPa</li> <li>➤ Coefficients: reference coefficients, Single-precision floating-point format</li> <li>➤ Name: custom unit ID, internal use purpose</li> <li>➤ DisplayName: Custom unit name, must be the character supported by the device, or there will be incomplete display</li> </ul>
24.	PRESsure:CUNIts	Set custom pressure unit display list	<p>Custom unit type, up to 3 unit lists</p> <p>Format is the same as read custom pressure unit</p>	None

25.	PRESSure:ATMAI?	Read barometric pressure, unit is kPa	None	Original barometric value P0 Factory calibrated barometric value P1 Two-point calibrated barometric value P2 Single-point calibrated barometric value P3
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### 1.3 System commands

No	Commands	Description	Parameter	Returned value
1.	SYSTem:ERRor?	Read the execute error information	None	A message at the stack top of the error
2.	SYSTem:LOCK?	Read the screen lock status	None	0= unlock 1= lock
3.	SYSTem:LOCK	Set the screen lock status	0= unlock 1= lock	None
4.	SYSTem:VERSion?	Read the device version	APP= host version PM=pressure module firmware version BT = bluetooth version None= APP	Default: no parameter= return host version with parameter= return corresponding version
5.	SYSTem:DATE?	Read system date	None	Date (yyyy,MM,dd)
6.	SYSTem:DATE <Numeric>,<Numeric>,<Numeric>	Set system date	➤ 1: year ➤ 2: month ➤ 3: day	None
7.	SYSTem:TIME?	Read system time	None	Time (HH,mm,ss)
8.	SYSTem:TIME <Numeric>,<Numeric>,<Numeric>	Set system time	➤ 1: hour ➤ 2: minute ➤ 3: second	None

9.	SYSTem:BACKlight:INFO?	Read system backlight information	None	1: brightness percentage 2: auto backlight off time (s)
10.	SYSTem:BACKlight:INFO	Set system backlight information	<ul style="list-style-type: none"> <li>➤ 1: brightness percentage (0-100)</li> <li>➤ 2: auto backlight off(0~600)S, 0= never</li> </ul>	None
11.	SYSTem:BACKlight?	Read the backlight status	None	0= off, 1= open
12.	SYSTem:BACKlight	Set the backlight on/off	<ul style="list-style-type: none"> <li>➤ 0= off, 1= open</li> </ul>	None
13.	SYSTem:AUTOpoweroff?	Read auto power off information	None	return : <ul style="list-style-type: none"> <li>➤ Value 1: 0=disable, 1= enable</li> <li>➤ Value 2: auto power off time (S)</li> </ul>
14.	SYSTem:AUTOpoweroff	Set auto power off information	<ul style="list-style-type: none"> <li>➤ 1: 0=disable, 1= enable</li> <li>➤ 2: auto power off time (0~5*24*60*60)S</li> </ul>	None
15.	SYSTem:BATTery:CAPacity?	Read current battery status	None	Value 1: battery voltage(V) Value 2: battery power (full-4, 3, 2, 1, 0)
16.	SYSTem:HOME:SV?	Read sub-value area display in the main interface	None	1-ATM, 4-ALARM, 5-TARE
17.	SYSTem:HOME:SV	Set sub-value area display in the main interface	1-ATM, 4-ALARM, 5-TARE	None
18.	SYSTem:HOME:SV:ATM?	Show read ATM info on main or not on main interface	None	0= not show 1= show
19.	SYSTem:HOME:SV:ATM	Set read ATM info on main or not on main interface	0= not show 1= show	None



20.	SYSTem:HOME?	Read whether the current display interface is the main interface	None	0= no 1= yes
21.	SYSTem:HOME	Set to main interface	None	None
22.	SYSTem:TEMPerature:UNIT?	Read system temperature unit	None	Value 1: temperature unit ID Value 2: temperature unit name
23.	SYSTem:TEMPerature:UNIT	Set system temperature unit	Temperature ID or unit name, will be identified automatically	None
24.	SYSTem:RSCOm?	Read communication parameter (232 or 485)	None	Value 1: address Value 2: baud rate Value 3: data bit Value 4: stop bit Value 5: parity
25.	SYSTem:RSCOm	Set communication parameter (232 or 485)	set only the first few parameters is ok Value 1: address Value 2: baud rate Value 3: data bit Value 4: stop bit Value 5: parity (default no check)	None
26.	SYSTem:BLUETOOTH	Set Bluetooth on/ off	0= off 1= open	None
27.	SYSTem:SWITChoutput	Set switch signal output	1: 1=first channel; 2= second channel; 3=first/second channel open/close at the same time;	None

			2: 0=low level ; 1=high level	
28.	SYSTem:BLEInfo?	Query the Bluetooth name and Mac address	None	Value 1:name Value 2: mac address
29.	SYSTem:BATTery:PERcent?	Query the percentage of battery capacity	None	The percentage of battery capacity
30.	SYSTem:LOCKmode?	Read the LOCK mode enable status	None	0= disabled, 1= enabled
31.	SYSTem:LOCKmode 0 1	Set the LOCK mode enable status	0= disabled, 1= enabled	None

#### 1.4 Data management commands

No	Commands	Description	Parameter	Returned value
1.	DATalogger:TYPE?	Read the log type	None	0: log pressure 1: log pressure+temperature 2: log pressure+barometric pressure 3: log pressure+ barometric pressure+temperature
2.	DATalogger:TYPE <item>	Set the log type	0: log pressure 1: log pressure+temperature 2: log pressure+barometric pressure 3: log pressure+ barometric pressure+temperature	None
3.	DATalogger:SPACE?	Read occupied data log space	None	Value 1: occupied percentage
4.	DATalogger:SPACE<UnquoStr>	Clear data log User password: 123456	password (Unquoted string)	None

5.	DATalogger:FILE?	Get log file index	None	Value 1: File start index Value 2: File end index Value 3: Maximum files amount
6.	DATalogger:FILEinfo? <index>	Get designated log file information	Designated file index	Value 1: version Value 2: date (YYYYMMDD) Value 3: time (HHMMSS) Value 4: total log time 0=no limit Value 5: interval unit: ms Value 6: size of a log item, unit: byte Value 7: pressure unit ID Value 8: String description of stored content information Value 9: starting file in the log folder Value 10: ending file in the lod folder (not exist) Value 11:guid
7.	DATalogger:FILEsize?<index>	Get designated log file size	Designated file index	File size
8.	DATalogger:DATA?<index>,<address>,<length>	Get the length of data from the specified position in the designated log file	1: Designated file index 2: location 3: read the length	Base64 encoded string
9.	DATalogger:RUN	Start or Stop datalogger	0: stop datalogger 1:start datalogger (Commands need to be executed on the REC interface)	None
10.	DATalogger:RUN?	Querying datalogger Running Status	None	0: stop 1:running

11.	DATalogger:INTERval	Set datalogger recording interval	Unit:seconds Range(0.1 ~9999 s) Less than 1 with a decimal. greater than or equal to 1 without decimal.	None
12.	DATalogger:INTERval?	Query datalogger recording interval	None	Unit:seconds
13.	DATalogger:SHOW	Into REC page	None	None

#### Appendix 1: SCPI unit ID list

Unit Id	Unit
1133	kPa
1130	Pa
1132	MPa
1136	hPa
1137	bar
1138	mbar
1141	psi
1145	kgf/cm <sup>2</sup>
1147	inH <sub>2</sub> O@4°C

1148	inH <sub>2</sub> O@68°F
1150	mmH <sub>2</sub> O@4°C
1151	mmH <sub>2</sub> O@20°C
1153	ftH <sub>2</sub> O@4°C
1154	ftH <sub>2</sub> O@68°F
1156	inHg@0°C
1158	mmHg@0°C
1001	°C
1002	°F

## Appendix 2: error definition

No	Error code	Error description	Definition
1	0	No error	No error
<b>Command error</b>			
2	120	Commandparameter error	Command parameter error
3	-108	Parameter not allowed	Too many parameters, or the command without parameters contains parameters
4	-109	Missing parameter	Parameter missed
5	-110	Command header error	Command header error
6	-114	Header suffix out of range	Command header suffix is out of range
7	-123	Numeric overflow	Number overflow, the absolute value of the number exponent is greater than 43
8	-151	Invalid string data	Invalid string, such as mismatched quotes
9	-171	Invalid expression	Invalid expressions, such as mismatched parentheses
<b>Execution error</b>			
10	-200	Execution error	Execution error
11	-221	Settings conflict	Settings conflict
12	-222	Data out of range	Parameter out of the command's range
13	-223	Too much data	Too much data beyond processing capacity
14	-224	Illegal parameter value	Illegal parameter value
15	-310	System error	System error
16	-311	Memory error	Memory error
17	-350	Queue overflow	Queue overflow
18	-360	Communication error	Communication error

