ADT680A/680P/601Ex 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 commands set is marked with<> (do not enter angle brackets when converting to actual commands) 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?	Device identification query, the returned data is divided into 4 parts: 1. manufacturer 2. model 3. product serial number 4. device ID and software version	-	1. manufacturer 2. model 3. product serial number 4. device ID and software version
3	*RST	Program reset	-	Return OK and reset

1.2 Pressure commands

No	Commands	Description	Parameter	Returned value
1.	PRESsure? <Numeric>	Read current pressure value	Option: 0, 1, 2. 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 + 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: ID or unquoted unit name	See Appendix 1
4.	PRESsure:UNIT:NEXT	Switch the pressure unit upward or downward in the order of the pressure list	Parameter: none or one parameter ➢ 1 indicates to switch the pressure unit downward (or	None

			backward), when there is no parameter, it is the same as this ➢ -1 indicates to switch the pressure unit upward (or forward)	
5.	PRESsure:PTYPe?	Read current pressure type	None	G: Gauge pressure A: Absolute pressure
7.	PRESsure:ONLine?	Read 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); 1: lower limit, upper limit, unit name, pressure type(G/A)
9.	PRESsure:ZERO	Pressure module zero	None	None
10.	PRESsure:RESolution?	Read pressure resolution	None	4|5
11.	PRESsure:RESolution <Numeric>	Set pressure resolution	4 or 5	None
12.	PRESsure:FILTer?	Read filter parameter	0 or none: read current filter information; 1: read all filter information.	Three return formats of read current filter information: No filter: 0 First-order filter: 1, first-order filter coefficient (0.05~1) Average filter: 2, filter window size (3~10) 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	1 or no parameter: read tare information	Tare status (0=disable, 1=enable), tare value, unit ID
17.	PRESsure:TARE	Set pressure tare function status	Parameters are separated by English comma ➢ Tare function status (0= disable, 1= enable) ➢ Tare value, can be omitted (it means not to reset the tare) ➢ Unit ID, can be omitted(it means choose the default unit)	None
21.	PRESsure:RATE?	Read pressure sampling rate	None	Return: ➢ mode (measurement type) ➢ time/ second

				➢ data number
22.	PRESsure:RATE	Set pressure sampling rate	➢ 1: mode (measurement type: 1=normal power, 2=low power) ➢ 2: time/ second; ➢ 3: data number;	
23.	PRESsure:UNITs?	Read pressure unit display list	➢ 0 or none= return unit ID list; ➢ 1= return unit name list	Two formats: 1. None or =0, return unit ID list, separated by comma. 2. =1, return unit name list, separated by comma
24.	PRESsure:CUNIts?	Read custom pressure unit display list	None	Return: The unit list is separated by comma, and the data in the custom unit are separated by semicolon. data in the custom unit : id;RefId;Coefficients; Name;DisplayName, as below: ➢ id: custom unit ID, must be negative integer [-32767, 0]; if the unit is in the custom unit list, then it should be the corresponding unit ID ➢ RefId: Reference unit for custom unit, generally is 1133, means kPa ➢ Coefficients: reference coefficients, Single-precision floating-point format ➢ Name: custom unit ID, internal use purpose ➢ DisplayName: Custom unit name (reserved)
25.	PRESsure:CUNIts	Set custom pressure unit	Two ways to set custom unit:	None

			1. When the unit coefficient is a negative integer, set it according to the data format returned by reading the custom pressure unit 2. Choose one of the custom unit in below list, the parameter behinds the unit is unit ID inH2O_20℃ unit id 1148 inH2O_60℉ unit id 2005 mmH2O_20C unit id 1151 mmH2O_15C unit id 2015 ftH2O_4℃unit id 1153 ftH2O_60℉unit id 2006	
26.	PRESsure:UNITList?	Read configurable pressure unit list	0 or none: return unit ID list; 1: return unit name ID list	0 or none: return unit ID list, separated by comma; 1: return unit name ID list, separated by comma
27.	PRESsure:UNITList	Set configurable pressure unit list	unit ID list, separated by comma	None
28.	PRESsure:DANGp?	Read overpressure records	None	Different records are separated by comma, each record has: pressure value date time
29.	PRESsure:ALLConfigUnits?	Read all configurable units	0 or none: return unit ID list; 1: return unit name ID list	0 or none: return unit ID list, separated by comma; 1: return unit name ID list, separated by comma
30.	PRESsure:CALWarnInfo?	Read calibration due information	None	1: calibration due reminder status 2: days prior to calibration due date 3: this calibration date

				4: next calibration date
31.	PRESsure:CALWarnInfo	Set calibration due information	1: calibration due reminder status 2: days prior to calibration due date 3: this calibration date 4: next calibration date	None
32.	PRESsure:CALInfo	Set calibration information	1: this calibration date 2: next calibration date	None

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 or no parameter- host version; PM- pressure module firmware version	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	1: brightness percentage (reserve) 2: auto backlight off(0~600)S, 0= never	None
11.	SYSTem:BACKlight?	Read the backlight status	None	0= off, 1= open
12.	SYSTem:BACKlight	Set the backlight on/off	➢ 0= off, 1= open	None
13.	SYSTem:AUTOpoweroff?	Read auto power off information	None	1: 0=disable, 1= enable 2: auto power off time (S)
14.	SYSTem:AUTOpoweroff	Set auto power off information	1: 0=disable, 1= enable 2: auto power off time (0~5*24*60*60)S	None
15.	SYSTem:BATTery:CAPacity?	Read current battery status	None	1: battery voltage(V) 2: battery power（full-4，3，2，1，0）
16.	SYSTem:HOME?	Read whether the current display interface is the main display	None	0= no 1= yes
17.	SYSTem:HOME	Set return to main display	None	None
18.	SYSTem:TEMPerature:UNIT?	Read system temperature unit	None	1：temperature unit ID 2：temperature unit name
19.	SYSTem:TEMPerature:UNIT	Set system temperature unit	Temperature ID or unit name, will be identified automatically	None
20.	SYSTem:RSCOmm?	Read serial communication parameter	None	1: address

				2: baud rate 3: data bit 4: stop bit 5：parity
21.	SYSTem:RSCOmm	Set serial communication parameter	Support set only the first few parameters 1: address (1~112) 2: baud rate: default 9600 3: data bit: default is 8 (7 or 8) 4: stop bit: default is 2 (1 or 2) 5: parity: default no check. 0: no check，1: odd check 2: even check	None
22.	SYSTem:BLUEtooth	Set Bluetooth on/ off	0= off 1= open	None
23.	SYSTem:BLEInfo?	Read the Bluetooth name and Mac address	None	1: Bluetooth name 2: MAC address
24.	SYSTem:BATTery:PERcent?	Read battery capacity percentage	None	Battery capacity percentage

1.4 Data management commands

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

		User password: 1234		
5.	DATalogger:FILE?	Get log file index	None	1：File start index 2：File end index 3: Maximum files amount
6.	DATalogger:FILEinfo? <index>	Read designated log file information	Designated file index	1: version 2: date (YYYYMMDD) 3: time (HHMMSS) 4: total log time 0=no limit 5: logging interval, unit：ms 6: size of a log item, unit: byte 7: pressure unit ID 8: string description of stored content information 9: starting file in the log folder 10: ending file in the log folder (not exist) 11: guid 12: temperature unit ID (if temperature is not logged, it is 0) 13: log file name 14: pressure type 15: file size 16: round-off digits 17: data offset address
7.	DATalogger:FILEsize? <index>	Read designated log file size	Designated file index	File size

8.	DATalogger:RUN	Start or Stop data log	0: stop data log 1: start data log	None
9.	DATalogger:RUN?	Read data log running status	None	0: stop 1: running
10.	DATalogger:INTErval	Set data log recording interval	Unit: seconds Range (0.1 ~9999 s) < 1 with a decimal. ≥ 1 without decimal.	None
11.	DATalogger:INTErval?	Read data log recording interval	None	Unit: second
12.	DATalogger:INFO?	Read information	None	1: logging interval 2: log type 3: occupied capacity 4: file start index 5: file end index 6: maximum file quantity
13.	DATalogger:LISTinfo? <startindex>,<endindex>	Read designated log file list information	1: file start index 2: file end index	File heads information is separated by semicolon
14.	DATalogger:FILeDATa?<index>,<address>,<length>	Read the data of designated length starting from designated position in designated file. It is recommended that the data length of each reading should not exceed 10240 bytes.	1: designated file index 2: position 3: length	base64 encoded string

15.	DATalogger:FILeName <UnquoStr>	Set the filename of current started log	File log (unquoted string)	None
16.	DATalogger:OVERride?	Read overwrite function status	None	0= disable 1= enable
17	DATalogger:OVERride	Set overwrite function status	0= disable 1= enable	None

Appendix 1: SCPI unit ID list

Unit ID	Unit
1133	kPa
1130	Pa
1132	MPa
1137	bar
1138	mbar
1141	psi
1145	kgf/cm^2
1147	inH2O@4°C
1150	mmH2O@4°C
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
		Command error	
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
		Execution error	
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