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## 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 <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
21.	PRESsure:RATE?	Read pressure sampling rate	None	Return: <ul style="list-style-type: none"> <li>➤ mode (measurement type)</li> <li>➤ time/ second</li> </ul>

				➤ data number
22.	PRESsure:RATE	Set pressure sampling rate	<ul style="list-style-type: none"> <li>➤ 1: mode (measurement type: 1=normal power, 2=low power)</li> <li>➤ 2: time/ second;</li> <li>➤ 3: data number;</li> </ul>	
23.	PRESsure:UNITs?	Read pressure unit display list	<ul style="list-style-type: none"> <li>➤ 0 or none= return unit ID list;</li> <li>➤ 1= return unit name list</li> </ul>	<p>Two formats:</p> <ol style="list-style-type: none"> <li>1. None or =0, return unit ID list, separated by comma.</li> <li>2. =1, return unit name list, separated by comma</li> </ol>
24.	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]; if the unit is in the custom unit list, then it should be the corresponding unit ID</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 (reserved)</li> </ul>
25.	PRESsure:CUNItS	Set custom pressure unit	Two ways to set custom unit:	None

			<p>1. When the unit coefficient is a negative integer, set it according to the data format returned by reading the custom pressure unit</p> <p>2. Choose one of the custom unit in below list, the parameter behinds the unit is unit ID</p> <p>inH2O_20°C unit id 1148  inH2O_60°F unit id 2005  mmH2O_20C unit id 1151  mmH2O_15C unit id 2015  ftH2O_4°Cunit id 1153  ftH2O_60°Funit id 2006</p>	
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	<ul style="list-style-type: none"> <li>➤ 1: hour</li> <li>➤ 2: minute</li> <li>➤ 3: second</li> </ul>	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	<ul style="list-style-type: none"> <li>➤ 0= off, 1= open</li> </ul>	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:RSCOm	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.	DATallogger:RUN	Start or Stop data log	0: stop data log 1: start data log	None
9.	DATallogger:RUN?	Read data log running status	None	0: stop 1: running
10.	DATallogger:INTERval	Set data log recording interval	Unit: seconds Range (0.1 ~9999 s) < 1 with a decimal. ≥ 1 without decimal.	None
11.	DATallogger:INTERval?	Read data log recording interval	None	Unit: second
12.	DATallogger: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.	DATallogger: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.	DATallogger: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 <UnqoStr>	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

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Appendix 1: SCPI unit ID list

Unit ID	Unit
1133	kPa
1130	Pa
1132	MPa
1137	bar
1138	mbar
1141	psi
1145	kgf/cm <sup>2</sup>
1147	inH <sub>2</sub> O@4°C
1150	mmH <sub>2</sub> O@4°C
1156	inHg@0°C
1158	mmHg@0°C
1001	°C
1002	°F

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**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