# 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".



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### 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:<br>1. manufacturer<br>2. model<br>3. product serial number<br>4. device ID and software version | - | 1. manufacturer<br>2. model<br>3. product serial number<br>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.<br>When there is no parameter, it is the same as the parameter being 0. | 0 or none: pressure value + unit Id，<br>1: pressure value + unit Name<br>2:pressure value + unit Id + temperature + temperature unit ID |
| 2. | PRESsure:UNIT? | Read current pressure unit | Option: 0, 1, 2<br>When there is no parameter, it is the same as the parameter being 0. | 0 or none: pressure unit Id<br>1: pressure unit name<br>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<br>➢ 1 indicates to switch the pressure unit downward (or | None |



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| | | | backward), when there is no parameter, it is the same as this<br>➢ -1 indicates to switch the pressure unit upward (or forward) | |
| 5. | PRESsure:PTYPe? | Read current pressure type | None | G: Gauge pressure<br>A: Absolute pressure |
| 7. | PRESsure:ONLine? | Read whether the pressure module is online? | None | 0: offline<br>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);<br>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;<br>1: read all filter information. | Three return formats of read current filter information:<br>No filter: 0<br>First-order filter: 1, first-order filter coefficient (0.05~1)<br>Average filter: 2, filter window size (3~10)<br>When reading all filter information, return all of the following information in order, separated by |



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| | | | | comma.<br>Filter type: no filter, first-order filter, average value filter<br>first-order filter coefficient;<br>average value filter window;<br>average value filter de-extreme value pairs |
| 13. | PRESsure:FILTer 0\|1\|2 [,<Numeric>,<Numeric>] | Set filter type | No filter: 0<br>first-order filter: 1，coefficient<br>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<br>➢ Tare function status (0= disable, 1= enable)<br>➢ Tare value, can be omitted (it means not to reset the tare)<br>➢ Unit ID, can be omitted(it means choose the default unit) | None |
| 21. | PRESsure:RATE? | Read pressure sampling rate | None | Return:<br>➢ mode (measurement type)<br>➢ time/ second |



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| | | | | ➢ data number |
| 22. | PRESsure:RATE | Set pressure sampling rate | ➢ 1: mode (measurement type: 1=normal power, 2=low power)<br>➢ 2: time/ second;<br>➢ 3: data number; | |
| 23. | PRESsure:UNITs? | Read pressure unit display list | ➢ 0 or none= return unit ID list;<br>➢ 1= return unit name list | Two formats:<br>1. None or =0, return unit ID list, separated by comma.<br>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.<br>data in the custom unit : id;RefId;Coefficients; Name;DisplayName, as below:<br>➢ 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<br>➢ RefId: Reference unit for custom unit, generally is 1133, means kPa<br>➢ Coefficients: reference coefficients, Single-precision floating-point format<br>➢ Name: custom unit ID, internal use purpose<br>➢ DisplayName: Custom unit name (reserved) |
| 25. | PRESsure:CUNIts | Set custom pressure unit | Two ways to set custom unit: | None |



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| | | | 1. When the unit coefficient is a negative integer, set it according to the data format returned by reading the custom pressure unit<br>2. Choose one of the custom unit in below list, the parameter behinds the unit is unit ID<br>inH2O_20℃ unit id 1148<br>inH2O_60℉ unit id 2005<br>mmH2O_20C unit id 1151<br>mmH2O_15C unit id 2015<br>ftH2O_4℃unit id 1153<br>ftH2O_60℉unit id 2006 | |
| 26. | PRESsure:UNITList? | Read configurable pressure unit list | 0 or none: return unit ID list;<br>1: return unit name ID list | 0 or none: return unit ID list, separated by comma;<br>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;<br>1: return unit name ID list | 0 or none: return unit ID list, separated by comma;<br>1: return unit name ID list, separated by comma |
| 30. | PRESsure:CALWarnInfo? | Read calibration due information | None | 1: calibration due reminder status<br>2: days prior to calibration due date<br>3: this calibration date |



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| | | | | 4: next calibration date |
| 31. | PRESsure:CALWarnInfo | Set calibration due information | 1: calibration due reminder status<br>2: days prior to calibration due date<br>3: this calibration date<br>4: next calibration date | None |
| 32. | PRESsure:CALInfo | Set calibration information | 1: this calibration date<br>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<br>1= lock |
| 3. | SYSTem:LOCK | Set the screen lock status | 0= unlock<br>1= lock | None |
| 4. | SYSTem:VERSion? | Read the device version | APP or no parameter- host version;<br>PM- pressure module firmware version | No parameter= return host version<br>with parameter= return corresponding version |
| 5. | SYSTem:DATE? | Read system date | None | Date (yyyy,MM,dd) |
| 6. | SYSTem:DATE<br><Numeric>,<Numeric>,<Numeric> | Set system date | ➢ 1: year<br>➢ 2: month<br>➢ 3: day | None |
| 7. | SYSTem:TIME? | Read system time | None | Time (HH,mm,ss) |



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| 8. | SYSTem:TIME<br><Numeric>,<Numeric>,<Numeric> | Set system time | ➢ 1: hour<br>➢ 2: minute<br>➢ 3: second | None |
| 9. | SYSTem:BACKlight:INFO? | Read system backlight information | None | 1: brightness percentage<br>2: auto backlight off time (s) |
| 10. | SYSTem:BACKlight:INFO | Set system backlight information | 1: brightness percentage (reserve)<br>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<br>2: auto power off time (S) |
| 14. | SYSTem:AUTOpoweroff | Set auto power off information | 1: 0=disable, 1= enable<br>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)<br>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<br>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<br>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 |



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| | | | | 2: baud rate<br>3: data bit<br>4: stop bit<br>5：parity |
| 21. | SYSTem:RSCOmm | Set serial communication parameter | Support set only the first few parameters<br>1: address (1~112)<br>2: baud rate: default 9600<br>3: data bit: default is 8 (7 or 8)<br>4: stop bit: default is 2 (1 or 2)<br>5: parity: default no check. 0: no check，1: odd check 2: even check | None |
| 22. | SYSTem:BLUEtooth | Set Bluetooth on/ off | 0= off<br>1= open | None |
| 23. | SYSTem:BLEInfo? | Read the Bluetooth name and Mac address | None | 1: Bluetooth name<br>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<br>1: log pressure + temperature |
| 2. | DATalogger:TYPE <item> | Set data log type | 0: log pressure<br>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 |



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



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| 8. | DATalogger:RUN | Start or Stop data log | 0: stop data log<br>1: start data log | None |
| 9. | DATalogger:RUN? | Read data log running status | None | 0: stop<br>1: running |
| 10. | DATalogger:INTErval | Set data log recording interval | Unit: seconds<br>Range (0.1 ~9999 s)<br>< 1 with a decimal.<br>≥ 1 without decimal. | None |
| 11. | DATalogger:INTErval? | Read data log recording interval | None | Unit: second |
| 12. | DATalogger:INFO? | Read information | None | 1: logging interval<br>2: log type<br>3: occupied capacity<br>4: file start index<br>5: file end index<br>6: maximum file quantity |
| 13. | DATalogger:LISTinfo? <startindex>,<endindex> | Read designated log file list information | 1: file start index<br>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<br>2: position<br>3: length | base64 encoded string |



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| 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<br>1= enable |
| 17 | DATalogger:OVERride | Set overwrite function status | 0= disable<br>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 | $kgf/cm^2$ |
| 1147 | inH2O@4°C |
| 1150 | mmH2O@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 |
| | | **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 |



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