

ADT773/783/793 SCPI Commands Set

1 Commands Instruction

SCPI means Standard Commands for Programmable Instruments, which defines a set of standard syntax and commands for controlling programmable instruments. It communicates with the instrument through ASCII string format. A command generally consists of a series of keywords, some of which also need have parameters. In the protocol, the command is specified in the following form: * IDN?. In use, it can be the full name or only abbreviations containing uppercase letters. Usually, instrument commands can be divided into controlling commands and query commands. The controlling commands donot have return values, its result can be checked by sending the command SYSTem: ERRor?. The query commands have returned value, and it is also ASCII string.

(1)Format

Each command includes two parts: **keyword** and **parameter**, different keywords are separated by a colon ':', followed by optional parameters. If there is a "?" after the command, it indicates it is query command. The keyword and the first parameter should be separated by a space.

For example:

Command **CHANnel1: BWLimit 20M**. The first keyword is CHANnel, and the second keyword is BWLimit. The keywords are separated by ":", with 20M being the parameter and separated from the keywords by space.

Query command **CHANnel1: BWLimit?** The question mark "?" indicates a query.

(2) About the symbol

The following symbols are not sent with the command.

a. Vertical line |

A vertical line is used to separate multiple parameters, and one of the parameters must be selected when using the command.

b. Square brackets []

The content in square brackets can be omitted.

c. Triangle brackets <>

The parameters in the triangle brackets must be replaced with a valid value.

(3) About the abbreviation

All commands are not case sensitive, you can use all uppercase or lowercase. But if you want to abbreviate, you must enter all uppercase letters in the command format.

For example: **CHANnel: Value?** Can it be abbreviated as **CHAN: Value?**

(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". In some serial communication software, select the option "send line break" means that the

software will automatically send the command terminator.

2 Commands instruction

2.1 IEEE488.2 common commands

NO.	Command	Explanation	Parameters	Returning values	Example
1	*CLS	This command eliminates the following registers; a. Standard event register b. Querying event register c. Operating event register d. Status byte register f. Error queue	-	-	*CLS
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	-	Device identification	Send:*IDN? Return: ADDITEL,,123456789,P25d&MPC V2.0.0.6
3	*RST	Main software reset	-	-	*RST

2.2 Pressure commands

NO.	Command	Explanation	Parameters	Returning values	Example
1.	PRESsure:MODule:UNIT? <ModuleID>	Read pressure module units	<ModuleID> number of the designated module (1 2 4 6)	Pressure unit of the module	Send: PRESsure:MODule:UNIT? 1

			1: control module 2: internal high range module 4: external module 6: barometric module		Return:MPa
2.	PRESsure:MODule:UNIT <ModuleID>,<UNIT>	Set pressure unit of the module	<ModuleID> number of the designated module (1 2 4 6) 1: control module 2: internal high range module 4: external module 6: barometric module <UNIT> Below are valid units: Pa hPa kPa MPa mbar bar psi mmH2O@4C cmH2O@20C inH2O@4C inH2O@20C kgf/cm2 torr ftH2O@4C inH2O@20C inHg@0C mmHg@0C The list also contains custom unit, read custom unit by sending command: PRESsure:MODule:UNIT:LIST?	None	PRESsure:MODule:UNIT 2,Pa
3.	PRESsure:MODule:UNIT:LIST ?	Read the current pressure unit list	None	the list of current pressure unit names, including the unit, availability status, and custom unit status, Pa&1&0, indicates that the unit is available and not a custom unit	Send: PRESsure:MODule:UNIT:LIST? Return: Pa&0&0,hPa&1&0,kPa&1&0,MPa &1&0,psi&1&0,User1&1&1,User2&

				USER1&0&1 indicates that the unit is not available and is a custom unit	1&1, User3&1&1, User4&1&1, User5&1&1
4.	PRESsure:MODule:RESolutio n? <ModuleID>	Read module resolution	<ModuleID> module number (1 2 4 6) 1: control module 2: internal high range module 3: internal low range module 4: external module 6: barometric module	Current resolution	Send: PRESsure:MODule:RESolutio n? 1 Return:5
5.	PRESsure:MODule:RESolutio n <ModuleID>, <Value>	Set module resolution	<ModuleID> module number (1 2 3 4 6) 1: control module 2: internal high range module 3: internal low range module 4: external module 6: barometric module <Value> Resolution to be set, valid value 5,6,7	None	PRESsure:MODule:RESolutio n 2,6
6.	PRESsure:MODule:ZERO <ModuleID>	Zero the module	<ModuleID> module number (1 2 4 6) 1: control module 2: internal high range module 4: external module 6: barometric module	None	PRESsure:MODule:ZERO 2
7.	PRESsure:MODule:ZERO:CA Ncel <ModuleID>	Cannel zero the module	<ModuleID> module number (1 2 4 6) 1: control module	None	PRESsure:MODule:CANCel:ZERO 5

			2: internal high range module 4: external module 6: barometric module		
8.	PRESsure:MODule:PTYPE? <ModuleID>	Read pressure module pressure type	<ModuleID> module number (1 2 4) 1: control module 2: internal high range module 4: external module	The pressure type of current module: G:gauge A:absolute D:differential	Read internal high range module pressure type Send: PRESsure:MODule:PTYPE? 2 Return:A
9.	PRESsure:MODule:RANGe? <ModuleID>	Read the module range	<ModuleID> module number (1 2 5 6) 1: control module 2: internal high range module 4: external module 6: barometric module	The range and unit of the current module, high and low range is separated by "~", unit is out of the "()". Multiple range is separated by ","	Read internal module range Send: PRESsure:MODule:RANGe? 2 Return:(0 ~ 25) MPa If the multiple ranges are: 0~70MPa 和 0 ~ 25MPa Send: PRESsure:MODule:RANGe? 2 Return:(0 ~ 70) MPa,(0 ~ 25) MPa
10.	PRESsure:RANGe:LIST?	Read the multiple range list, the range index is not start from 0	None	Get a list of current ranges, including index (the first digit represents modules <2 high range module, 3 low range module, 4 external module>, second digit represents module range numbers), ranges, and units. High and low ranges are separated by '~', and ranges are separated by '&'	Send:PRESsure:RANGe:LIST? Return:21,(0 ~ 70) MPa&22,(0 ~ 25) MPa

11.	PRESsure:RANGe:INDEX?	Read the range index of the controller	None	The index of the current range in the list: (the first digit represents modules <2 high range module, 3 low range module, 4 external module>, second digit represents module range numbers, it is not start from 0)	Send: PRESsure:RANGe:INDEX? Return:21
12.	PRESsure:RANGe:INDEX<INDEX>	Set the range index of the controller	<INDEX> The index to be set The value should be within the range list: the first digit represents modules <2 high range module, 3 low range module, 4 external module>, second digit represents module range numbers, it is not start from 0, needs get the data from the list	None	Set the current range of internal module as the range of index 0 in the list Send: PRESsure:RANGe:INDEX 21
13.	PRESsure:MODUle:MULTiRange? <ModuleID>	Read if the module has multiple range	<ModuleID> module number (1 2 4 6) 1: control module 2: internal high range module 4: external module 6: barometric module	0:single range 1:multiple range	Read if the internal module has multiple range Send: PRESsure::MODUle:MULTi:Range? 2 Return:1
14.	PRESsure:RANGe:MODE?	Read the current range mode	None	0>manual range 1:auto range	Send: PRESsure:RANGe:MODE? Return:0

15.	PRESsure:RANGe:MODE <Mode>	Set the current range mode	<Mode> 0:manual range 1:auto range		Set the range to manual Send: PRESsure:RANGe:MODE 0 Return:None
16.	PRESsure:MODUle:ONLine? <ModuleID>	Read pressure module online status	<ModuleID> module number (1 2 4 6) 1: control module 2: internal high range module 4: external module 6: barometric module	0: module is offline 1: module is online	Send: PRESsure:MODUle:ONLine? 2 Return:1
17.	PRESsure:MODUle:INFO? <ModuleID>	Read information of the pressure module, which is a comprehensive command. If the module has multiple ranges, the ranges are separated by '&'	<ModuleID> module number (1 2 3 4 6) 1: control module 2: internal high range module 3: internal low range module 4: external module 6: barometric module	Module information, separated by (.) <ID> serial number <Range>range <Type>pressure type G:gauge A:absolute D:differential <Version>version <Accuracy>accuracy	Read internal module information Send: PRESsure:MODUle:INFO? 2 Return:DPSE022480040,(0 ~ 25) MPa,G,DPS-EX V00.00.00.15,6 For multiple ranges module, ranges are separated by '&' Send: PRESsure:MODUle:INFO? 2 Return:DPSE022480040,(0 ~ 70) MPa&(0 ~ 25) MPa,G,DPS-EX V00.00.00.15,6
18.	PRESsure:MODUle:FILTer? <ModuleID>	Read module filter information	<ModuleID> module number (1 2 3 4) 1: control module 2: internal high range module 3: internal low range module	<Enable> 0:off, 1:on <FilterType> 0:first-order filter 1:average filter <Value>filter parameter: If FilterType is 0, this means the filter	Read control module's filter information Send: PRESsure:MODUle:FILTer? 1 Return:1,0,0.5

			4: external module	coefficient, range is 0-1; If FilterType is 1, this means the sampling time, range is 1-20(s);	
19.	PRESsure:MODUle:FILTER <ModuleID>,<Enable>,<FilterType>,<Value>	Set module filter information	<ModuleID> module number (1 2 3 4) 1: control module 2: internal high range module 3: internal low range module 4: external module <Enable> 0:off, 1:on <FilterType> 0:first-order filter 1:average filter <Value>filter parameter: If FilterType is 0, this means the filter coefficient, range is 0-1; If FilterType is 1, this means the sampling time, range is 1-20(s)		Send: PRESsure:MODUle:FILTER 1,1,0,0.5 Return: none
20.	PRESsure:MODUle:VALUes?	Read pressure value of all the modules. When the controller is not connected to the barometric module or external module, this bit is empty, as shown in the following example		ADT793 <PML>,<Unit>&<PMH>,<Unit>&<PctI>,<Unit>&<Pin>,<Unit>&<Acc>,<Unit>&<Baro>,<Unit>&<ExtPM>,<Unit> <PML> internal low range pressure <PMH> internal high range pressure <PctI> PctI pressure <Pin> pump source pressure <Acc> accumulator pressure <Baro> barometric module pressure	Send: PRESsure:MODUle:VALUes? Return: 0.86974597,MPa&13326.722,MPa &0.0018362,MPa&3.075833,MPa & 2.065,MPa&100.132,MPa&-0.054,MPa If external module is not connected, the value for the

				<ExtPM> external module pressure ADT773/783 <PML>,<Unit>&<PMH>,<Unit>&<S1>,<Unit>&<S2>,<Unit>&<Baro>,<Unit>&<ExtPM>,<Unit> <PML> internal low range pressure <PMH> internal high range pressure <S1> pressure supply pressure <S2> vacuum supply pressure <Baro> barometric pressure <ExtPM> external module pressure	external module will be empty(behind the last ",") For barometric module, it is same.
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2.3 Pressure measurement

NO.	Command	Explanation	Parameters	Returning values	Example
1.	PRESsure:MODule:MEASure ? <ModuleID>	Read the measured value of the pressure module	<ModuleID> module number (1 2 3 4 6) 1: selected module 2: internal high range module 3: internal low range module 4: external module 6: barometric module	Measured value and unit, separated by ","	Read the measured value of internal module Send: PRESsure:MODule:MEASure? 2 Return:0.566, MPa

2.4 Pressure output

NO.	Command	Explanation	Parameters	Returning values	Example
1.	PRESsure?	Read the current output pressure		Pressure value and unit	Send:PRESsure? Return:0.0003,MPa

2.	PRESsure:MODUle:CONTRol?	Read current pressure module controlling status		The controlling status, one of the following three: VENT MEASURE CONTROL	Send: PRESsure:MODUle:CONTRol? Return:VENT
3.	PRESsure:MODUle:CONTRol <STATE>	Set current pressure module controlling status	<STATE>: The controlling status, one of the following three: VENT MEASURE CONTROL		Set the status to control Send: PRESsure:MODUle:CONTRol CONTROL Return:None
4.	PRESsure:MODE?	Read pressure module controlling status	None	The controlling status, one of the following three: VENT MEASURE CONTROL	Send: PRESsure:MODE? Return:VENT
5.	PRESsure:MODE <STATE>	Set pressure module controlling status	<STATE>: The controlling status, one of the following three: VENT 0 MEASURE 1 CONTROL 2	None	Set the status of current module to Control Send: PRESsure:MODE CONTROL Return: none Set the status of current module to Measure Send: PRESsure:MODE 1 Return: none
6.	PRESsure:TARGeT:RANGe?	Read the range of target value		Low limit, high limit, unit format:<LOW>,<HIGH>,<UNIT>	Send: PRESsure:TARGeT:RANGe? Return:0,73.5,MPa

7.	PRESsure:TARGet?	Read the target value		Target value and unit	Send: PRESsure:TARGet? Return: 0.10000, MPa
8.	PRESsure:TARGet <Value>	Set the target value, note that the value should within the range	<Value>target value		Set the target pressure at 100 Send: PRESsure:TARGet 100 Return: None
9.	PRESsure:RANGe?	Read the current range		The range index (first digit is the module number: 2 internal high range, 3 internal low range, 4 external module; second digit is range number starts from 1) and range	Send: PRESsure:RANGe? Return: 21, (0 – 25) MPa
10.	PRESsure:MODUle?	Read the current control module		1: no control module 2: internal high range 3: internal low range 4: external module	Send: PRESsure:MODUle? Return: 2
11.	PRESsure:MODUle <ModuleID>	Set the control module	<ModuleID> module ID(2 3 4) 2: internal high range 3: internal low range 4: external module		Send: PRESsure:MODUle 2 Return: None
12.	PRESsure:Vent?	Read the vent pressure		Vent pressure	Send: PRESsure:Vent? Return: 0.1, MPa
13.	PRESsure:Vent <Value>	Set the vent pressure	<Value> vent value to be set		Send: PRESsure:Vent 0.2 Return: None
14.	PRESsure:PLIMit:ENABLE?	Read the status of setpoint limit		Status of setpoint limit 0: disable 1: enable	Send: PRESsure:PLIMit:ENABLE Return: 0

15.	PRESsure:PLIMit:ENABLE <Value>	Set the status of setpoint limit	<Value> 0: disable 1: enable		Send: PRESsure:PLIMit:ENABLE 1 Return: None
16.	PRESsure:PLIMit?	Read the setpoint limit range		Lower limit, upper limit and unit	Send: PRESsure:PLIMit? Return: 0.005,70,MPa
17.	PRESsure:PLIMit <Lv>,<Uv>	Set the setpoint limit range Valid only when the returned value of PRESsure:PLIMit:ENABLE?=1	<Lv> lower limit of the setpoint limit <Uv> upper limit of the setpoint limit		Set the setpoint limit range as 0.005,70 Send: PRESsure:PLIMit 0.005,70 Return: None
18.	PRESsure:TYPE?	Read the current pressure type		<Type> pressure type G:gauge A:absolute <EnableSwitch> switchable between gauge and absolute or not? 0: not support 1: support	Send: PRESsure:TYPE? Return: G,0
19.	PRESsure:TYPE <Type>	Set the current pressure type. If it doesn't support switch pressure type, it will return an error.	<Type> G: gauge A: absolute		Set pressure type as absolute: Send: PRESsure:TYPE A Return: None
20.	PRESsure:STEP?	Read manual step value		Step value	Send: PRESsure:STEP? Return: 0.5
21.	PRESsure:STEP <Value>	Set manual step value	<Value>step value to be set		Set step value as 0.5 Send: PRESsure:STEP 0.5 Return: None
22.	PRESsure:STEP:UP	Perform upward step			Send: PRESsure:STEP:UP

					Return: None
23.	PRESsure:STEP:DOWN	Perform downward step			Send: PRESsure:STEP:DOWN Return: None
24.	PRESsure:CONTRol:INFO?	Read current control information		The control information, items are separated by (,.) <Value> real time pressure value <Target> target value <Unit> unit <Range> range <Type> pressure type G: gauge A: absolute D: differential <IsStable> stabilized or not 0: not stabilized 1: stabilized <State> control status VENT MEASURE CONTROL <ExtendInfo> extend ports information one byte data length, indicates 8 IO statuses, as below: bit7~0: CPS, DRV1, DRV2, DO1, DO2, DO3, DC24, Switch	Send: PRESsure:CONTRol:INFO? Return: 0.0267, 2.0, MPa, (0 ~ 25) MPa, G, 0, MEASURE, 30

25.	PRESsure:CONTRol:MODE?	Read control mode		Control mode 0: fast 1: standard 2: custom	Send: PRESsure:CONTRol:MODE? Return: 0
26.	PRESsure:CONTRol:MODE <Value>	Set control mode	<Value> 0: fast 1: standard 2: custom		Send: PRESsure:CONTRol:MODE 1 Return: None
27.	PRESsure:CONTRol:SLEWrate ?	Read control slew rate		<type> ,<value>,<unit> <type>: slew rate type; 0=unlimited 1=limited <value>: slew rate value; When the type is 0 without limit, the value is MAX, and when the slew rate is 1, the limit value will be returned <unit>: Unit of slew rate	1 read slew rate, no limit Send: PRESsure:CONTRol:SLEWrate? Return: 0,MAX,MPa 2 Read slew rate, the limit value is 5MPa Send: PRESsure:CONTRol:SLEWrate? Return:1,5,MPa
28.	PRESsure:CONTRol:SLEWrate :MAX	Set slew rate as unlimited, only available when control mode is custom			Send: PRESsure:CONTRol:SLEWrate:MA X Return: None
29.	PRESsure:CONTRol:SLEWrate :LIMIT <Value>	Set a slew rate value, the unit is current pressure unit, only available when control mode is custom	<Value>: slew rate value		Send: PRESsure:CONTRol:SLEWrate:LI Mit 5 Return: None
30.	PRESsure:CONTRol:STABILITY?	Read stability setting		<type>,<value>,<unit>,<valuePerc ent>,<unitPercent>,<second>	Send: PRESsure:CONTRol:STABILITY?

				<type>:stability setting, 0 percentage, 1 stability value <value>: when type=0, it is percentage; when type=1, it is stability value <unit>: when type=0, it is %FS, when type=1, it is stability value <valuePercent>:percentage value <unitPercent>: percentage value unit <second> stability time	Return: 0,0,kPa,0.003,%FS,2
31.	PRESsure:CONTRol:STABility <type>,<value>,<second>	Set stability, only available when control mode is custom	<type>:stability setting, 0 percentage, 1 stability value <value>: when type=0, it is percentage; when type=1, it is stability value <second> stability time		PRESsure:CONTRol:STABility 0,0.05,30
32.	PRESsure:CONTRol:HEIGHt:C ORRection?	Read head correction information	<Enable> 0:off, 1:on <UnitType> 0:imperial 1:metric <Height>head correction, metric unit (cm), imperial unit (in) <Density>media density, metric unit (kg/m ³), imperial unit (lb/ft ³) <Gravity>gravity acceleration metric unit (m/s ²), imperial unit (ft/s ²) <Temp>temperature, unit is C		Send: PRESsure:MODule:HEIGHt:CORRection? Return:0,1,10,1.293,9.8,25

33.	PRESsure:CONTRol:HEIGHt:CORRection <Enable>,<UnitType>,<Height>,<Density>,<Gravity>,<Temp>	Set head correction information	<Enable> 0:off, 1:on <UnitType> 0:imperial 1:metric <Height>head correction, metric unit (cm), imperial unit (in) <Density>media density, metric unit (kg/m³), imperial unit (lb/ft³) <Gravity>gravity acceleration metric unit (m/s²), imperial unit (ft/s²) <Temp>temperature, unit is C		PRESsure:CONTRol:HEIGHt:CORRection 0,1,10,1.293,9.8,25
34.	PRESsure:CONTRol:TARE?	Read tare information		<Enable><Enable> 0:off, 1:on <Value> tare value	Read internal high range module tare value: Send: PRESsure:MODUle:TARE? Return:0,0
35.	PRESsure:CONTRol:TARE <Enable>,<Tare>	Set tare information of designated module	<Enable><Enable> 0:off, 1:on <Value> tare value to be set		PRESsure:MODUle:TARE 1,1
36.	PRESsure:SWITCh:TYPE?	Read pressure switch type		0: mechanical 1:NPN 2:PNP	PRESsure:SWITCh:TYPE?
37.	PRESsure:SWITCh:TYPE <value>	Set pressure switch type	0: mechanical 1:NPN 2:PNP		PRESsure:SWITCh:TYPE 1
38.	PRESsure:SWITCh:VALUe?	Read pressure switch action value		Close value, pressure unit & open value, pressure unit	Send: PRESsure:SWITCh:VALUe? Return: 20,MPa&18,MPa
39.	PRESsure:SWITCh:VALUe:RESEt	Reset pressure switch action value			PRESsure:SWITCh:VALUe:RESEt
40.	PRESsure:EXTEnd:INTERface:STATe?	Read extend interface status		CPS,DRV1,DRV2,DO1,DO2,DO3,DC24,Switch	Send: PRESsure:EXTEnd:INTERface:ST

				0 inactivated 1 activated	ATe? Return: 1,0,0,0,0,0,1,0
41.	PRESsure:EXTend:INTERface :MODE? <type>	Read extend interface output mode	<type> 0:CPS 1:DVR1 2:DVR2 3:DO1 4:DO2 5:DO3	<mode>&<mode1>,<mode2>,<mode3> Returns a list of current output mode and available output modes, current output mode and available output mode are separated by the "&" , and different available output modes are separated by a comma; List of output modes: 0>manual 1:CPS 2:vacuum pump 3:pressure pump 4:remote mode 5: status mode	Send: PRESsure:EXTend:INTERface:MODE? 0 Return: 1&0,1
42.	PRESsure:EXTend:INTERface :MODE <type>,<mode>	Set extend interface output mode	<type> 0:CPS 1:DVR1 2:DVR2 3:DO1 4:DO2 5:DO3 <mode> 0>manual 1:CPS		Set CPS manual output Send: PRESsure:EXTend:INTERface:MODE 0,0

			2:vacuum pump 3:pressure pump 4:remote mode 5: status mode		
43.	PRESsure:EXTEnd:INTERface :Remote <type>,<value>	Set extend interface remote mode in on or off	<type> 1:DVR1 2:DVR2 <value> 0:off 1:on		Set DVR1 remote mode status Send: PRESsure:EXTEnd:INTERface:Re mote 1,1
44.	PRESsure:AZERo?	Read auto zero status		0: off 1: on	Send: PRESsure:AZERo? Return: 1
45.	PRESsure:AZERo <value>	Set auto zero status	0: off 1: on		PRESsure:AZERo1
46.	PRESsure:ZERO:POINt:STRA tegy?	Read zero point control strategy		0 vent 1 control	Send: PRESsure:ZERO:POINt:STRAtegy ? Return: 1
47.	PRESsure:ZERO:POINt:STRA tegy <value>	Set zero point control strategy	<value>: 0 vent 1 control		PRESsure:ZERO:POINt:STRAtegy 1
48.	PRESsure:STABLE?	Read pressure stability status	None	0= not stable 1= stable	Send: PRESsure:STABLE? Return: 1
49.	PRESsure:FIXEd:ATM <value>	Set fixed ATM pressure value	<value> ATM value, (60~120) kPa.a	None	PRESsure:FIXEd:ATM 100

2.5 Interface

NO.	Command	Explanation	Parameters	Returning values	Example
1.	SYSTem:HOME	Return to home menu. When using this command, please make sure the unit is idle without running any task or test.			
2.	SYSTem:LOCK?	Read the screen lock status		0: unlocked 1: locked	Send:SYSTem:LOCK? Return: 1
3.	SYSTem:LOCK <State>	Set the screen lock status	<State> set screen lock or unlock 0: unlocked 1: locked		Set the screen as locked Send:SYSTem:LOCK 1 Return: None

2.6 Communication

NO.	Command	Explanation	Parameters	Returning values	Example
1.	SYSTem:WLAN:StAtE?	Read WLAN status		0:off 1:on	Send: SYSTem:WLAN:StAtE? Return: 1
2.	SYSTem:WLAN:StAtE <State>	Set WLAN status	<State> 0:off 1:on		Set WLAN as off Send: SYSTem:WLAN:StAtE 0 Return: None
3.	SYSTem:WLAN:ADDRess?	Read WLAN IP address		WLAN IP address	Send: SYSTem:WLAN:ADDRess? Return: 192.168.61.127
4.	SYSTem:WLAN:ADDRess <IP>	Set WLAN IP address, available only when DHCP is off.	<IP> IP address		Send: SYSTem:WLAN:ADDRess 192.168.1.23

					Return: None
5.	SYSTem:WLAN:MASK?	Read WLAN IP subnet mask		WLAN IP subnet mask	Send: SYSTem:WLAN:MASK? Return: 255.255.254.0
6.	SYSTem:WLAN:MASK <Mask>	Set WLAN IP subnet mask, available only when DHCP is off	<State> WLAN IP subnet mask		
7.	SYSTem:WLAN:GATeway?	Read WLAN gateway address		WLAN gateway address	Send: SYSTem:WLAN:GATeway? Return: 192.168.60.1
8.	SYSTem:WLAN:GATeway <Gateway>	Set WLAN gateway address	<Gateway> WLAN gateway address		Send: SYSTem:WLAN:GATeway 192.168.60.1 Return: None
9.	SYSTem:WLAN:DHCP?	Read WLAN DHCP status		0:off 1:on	Send:SYSTem:WLAN:DHCP? Return: 1
10.	SYSTem:WLAN:DHCP <DHCP>	Set WLAN DHCP status	<DHCP> WLAN DHCP status 0:off 1:on		Send:SYSTem:WLAN:DHCP 0 Return: None
11.	SYSTem:WLAN:MAC?	Read WLAN MAC address		MAC address	Send:SYSTem:WLAN:MAC? Return:00:C1:40:76:10:99
12.	SYSTem:WLAN:SSID? [<ALL>]	Read WLAN SSID	<ALL> Optional: If use ALL, it returns all connectable hotspot names If no parameter: it returns the name of the hotspot that is currently	The WLAN SSID currently connected, or all connectable hotspot names	Send:SYSTem:WLAN:SSID? Return: ConST If wifi is not connected, adding the 'ALL' parameter and it will return the list of wifi hotspots, separated by ','. If

			connected When there is no connection, and does not return when connected		wifi is connected, the parameter will be ignored and the current connected wifi name will be returned. Send:SYSTem:WLAN:SSID? ALL Return: ConST,ESP_844851,CONSTRD,RD TEST,ESP_627851
13.	SYSTem:WLAN:CONNect <Name>,[<Pswd>]	Connect with hotspot	<Name> Hotspot name <Pswd> Hotspot password, optional, if no password or the hotspot was connected before, this parameter can be ignored.		Send: SYSTem:WLAN:CONNect ConST,123456789 Return: if no password or the hotspot was connected before, then: Send: SYSTem:WLAN:CONNect ConST Return: None
14.	SYSTem:WLAN:DISConnect	Disconnect with hotspot			
15.	SYSTem:ETHernet:ADDRess?	Read Ethernet IP address		Ethernet IP address	SYSTem:ETHernet:ADDRess?
16.	SYSTem:ETHernet:ADDRess <IP>	Set Ethernet IP address. If the IP address to be set is the IP address of the network currently connected to the SCPI, it will cause the SCPI to disconnect, and connecting again requires configuring a new IP address	<IP> IP address		Set Ethernet IP address as 192.168.1.23 Send: SYSTem:ETHernet:ADDRess 192.168.1.23 Return: None

17.	SYSTem:ETHeRnet:MASK?	Read Ethernet subnet mask	Ethernet subnet mask		Send: SYSTem:ETHeRnet:MASK? Return: 255.255.254.0
18.	SYSTem:ETHeRnet:MASK <Mask>	Set Ethernet subnet mask	<Mask> Ethernet subnet mask to be set		Send: SYSTem:ETHeRnet:MASK 255.255.254.0 Return: None
19.	SYSTem:ETHeRnet:GATeway?	Read Ethernet gateway address		Ethernet gateway address	Send: SYSTem:ETHeRnet:GATeway? Return: 192.168.40.1
20.	SYSTem:ETHeRnet:GATeway <Gateway>	Set Ethernet gateway address	<Gateway> Ethernet gateway address to be set		Send: SYSTem:ETHeRnet:GATeway 192.168.40.1 Return: None
21.	SYSTem:ETHeRnet:DHCP?	Read Ethernet DHCP status		0:off 1:on	
22.	SYSTem:ETHeRnet:DHCP <DHCP>	Set Ethernet DHCP status	< DHCP > 0:off 1:on		Send: SYSTem:ETHeRnet:DHCP 0 Return: None
23.	SYSTem:ETHeRnet:MAC?	Read Ethernet MAC address		Ethernet MAC address	Send: SYSTem:ETHeRnet:MAC? Return: 00:07:32:A9:ED:CF

24.	SYSTem:RS232:Info?	Read RS232 communication information		The current RS232 parameters, separated by “,” <BaudRate>values can be 9600/19200/38400/57600/115200 <DataBits> 5/6/7/8 <StopBits> None, One,Two, OnePointFive <Parity>parity bit None Odd Even Mark	Send:SYSTem:RS232:Info? Return:9600,8,One,None
25.	SYSTem:RS232:Info <BaudRate>,<DataBits>,<StopBits>,<Parity>	Set RS232 communication information	<BaudRate>values can be 9600/19200/38400/57600/115200 <DataBits> 5/6/7/8 <StopBits> None, One,Two, OnePointFive <Parity>parity bit None, Odd, Even, Mark		Send:SYSTem:RS232:Info 115200,8,One,None Return:None

2.7 System Commands

No.	Command	Explanation	Parameters	Returning values	Example
1.	SYSTem:TIME?	Read system time	None	Hour, minute, second	Send: SYSTem:TIME? Return: 2023,1,30
2.	SYSTem:TIME <Hour>,<Minute>,<Second>	Set system time	<Hour> <Minute> <Second>	None	SYSTem:TIME 15,05,12

3.	SYSTem:DATE?	Read system date	None	Year, month, day	Send: SYSTem:DATE? Return: 2023,1,30
4.	SYSTem:DATE <Year>,<Month>,<Day>	Set system date	<Year> <Month> <Day>	None	SYSTem:DATE 2023,01,30
5.	SYSTem:TIME:FORMat?	Read system time format	None	<Format> 0: 12-hour clock 1: 24-hour clock	Send: SYSTem:TIME:FORMat? Return: 1
6.	SYSTem:TIME:FORMat <Format>	Set system time format	<Format> 0: 12-hour clock 1: 24-hour clock	None	SYSTem:TIME:FORMat 0
7.	SYSTem:DATE:FORMat?	Read system date format	None	1:yyyy/MM/dd 2:MM/dd/yyyy 3:dd/MM/yyyy	
8.	SYSTem:DATE:FORMat <Value>	Set system date format	<Value> 1:yyyy/MM/dd 2:MM/dd/yyyy 3:dd/MM/yyyy	None	SYSTem:DATE:FORMat 2
9.	SYSTem:DATE:SEParator?	Read date separator	None	"-" , "/" , "."	Send: SYSTem:DATE:SEParator? Return: /
10.	SYSTem:DATE:SEParator<Value>	Set date separator	<Value> 1:- 2:/ 3:.	None	SYSTem:DATE:SEParator 2
11.	SYSTem:VOLUME?	Read system volume percentage, 0-100	None	Volume percentage	

12.	SYSTem:VOLUME <Value>	Set system volume percentage, 0-100	<Value> 0-100	None	
13.	SYSTem:VOLUME:TOUCH?	Read the touch tone status	None	0: disabled 1: enabled	
14.	SYSTem:VOLUME:TOUCH <Value>	Set the touch tone status	0: disabled 1: enabled	None	
15.	SYSTem:VOLUME:PROMpt?	Read system prompt tone status	None	0: disabled 1: enabled	
16.	SYSTem:VOLUME:PROMpt <Value>	Set system prompt tone status	0: disabled 1: enabled	None	SYSTem:VOLUME:PROMpt 0
17.	SYSTem:VOLUME:OVERrang e?	Read system overrange tone status	None	0: disabled 1: enabled	
18.	SYSTem:VOLUME:OVERrang e <Value>	Set system overrange tone status	0: disabled 1: enabled	None	SYSTem:VOLUME:OVERRange 1
19.	SYSTem:BRIGHtness?	Read system brightness	None	Brightness value 10-100	
20.	SYSTem:BRIGHtness <Value>	Set system brightness	Brightness value 10-100	None	SYSTem:BRIGHtness 80
21.	SYSTem:VERsion? <module>	Read system version	<module> APPLication: host version CONTroller:FIRMware: controller firmware version; CONTroller:HARDware: controller hardware version; MODUle<Index>:FIRMware: pressure module firmware version <Index> =(2 3 4 6)	Version	Read host version: Send: SYSTem:VERsion? APPLication Return: V0.0.0.2

			2: internal high range module 3: internal low range module 4: external module 6: barometric module		
22.	SYSTem:LANGuage?	Read the current language type	None	zh-CN: Simplified Chinese zh-TW: traditional Chinese en-US: English	
23.	SYSTem:LANGuage <Language>	Set the current language	zh-CN: Simplified Chinese zh-TW: traditional Chinese en-US: English	None	SYSTem:LANGuage en-US
24.	PRESsure:MEDIum:NAME?	Read the pressure medium type	None	<Medium> 0: gas 1: water 2: oil	
25.	PRESsure:MEDIum:NAME <Medium>	Set the pressure medium type	<Medium> 0: gas 1: water 2: oil	None	PRESsure:MEDIum:NAME 0

2.8 Electrical Commands

No.	Command	Explanation	Parameters	Returning values	Example
1.	MEASure:FUNCTION? [<ALL>]	Read the current electrical measurement channel	No value= current channel ALL= all available channels	1: 22mA 2: 22mA&24V 3: 10V 4: 1V	Send: MEASure:FUNCTION? Return: 2 Send: MEASure:FUNCTION? ALL Return: 1&2&3&4
2.	MEASure:FUNCTION <Switch>	Set the current electrical measurement channel	<Switch> 1: 22mA	None	Set the current channel to 10V Send: MEASure:FUNCTION 3

			2: 22mA&24V 3: 10V 4: 1V		
3.	MEASure:CONFig:RESOLution ? <Switch>	Read the resolution of designated electrical channel	<Switch> 1: 22mA 2: 22mA&24V 3: 10V 4: 1V	The resolution value	Read the resolution of 10V channel Send: MEASure:CONFig:RESOLution? 3 Return: 6
4.	MEASure:CONFig:RESOLution <Switch>,<digital>	Set the resolution of designated electrical channel	<Switch> 1: 22mA 2: 22mA&24V 3: 10V 4: 1V <digital>resolution: 5, 6, 7	None	Set the 10V channel resolution to 6 Send: MEASure:CONFig:RESOLution 3,6
5.	MEASure?	Read the measured value of current channel	None	The measured value of current channel	Send: MEASure? Return: 0.056
6.	MEASure:ZERO	Zero current channel	None	None	
7.	MEASure:ZERO:CANCel	Cancel zero the current channel	None	None	

Appendix 1: SCPI unit Id list

Unit Id	Unit
2000	Text unit
32767	Space unit
1211	mA
1212	μ A
1209	A
1240	V
1241	mV
1281	Ω
1284	k Ω
1283	M Ω
1000	K
1001	$^{\circ}$ C
1002	$^{\circ}$ F
1003	$^{\circ}$ 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	inH ₂ O@4°C
1148	inH ₂ O@68°F
1150	mmH ₂ O@4°C
1151	mmH ₂ O@20°C
1153	ftH ₂ O@4°C
1154	ftH ₂ O@68°F
1156	inHg@0°C
1158	mmHg@0°C
2001	mtorr
2002	lb/ft ²
2003	tsi
2004	psf

2005	inH ₂ O@60°F
2006	ftH ₂ O@60°F
2007	cmH ₂ O@4°C
2008	mH ₂ O@4°C
2009	cmHg@0°C
2010	mHg@0°C
2011	kgf/m ²

Appendix 2: Error definition

NO.	Error code	Error description	Explanation
1	0	No error	No error
Command error			
2	120	Commandparameter error	Command parameter error
3	-108	Parameter not allowed	Too many parameter or misuse parameter in commands which do not need the parameter
4	-109	Missing parameter	Missing parameter
5	-110	Command header error	Command header error
6	-114	Header suffix out of range	Header suffix out of range
7	-123	Numeric overflow	43 Numeric overflow, the abs of number's index is over 43
8	-151	Invalid string data	Invalid string data, such as unmatched quote
9	-171	Invalid expression	Invalid expression, such as unmatched brackets
Execution error			
10	-200	Execution error	Execution error
11	-221	Settings conflict	Settings conflict
12	-222	Data out of range	Parameter out of valid range
13	-223	Too much data	Too much data to be processed
14	-224	Illegal parameter value	Illegal parameter value
15	-230	Data corrupt or stale	The data is invalid, or the data is being read, and valid data has not been obtained
16	-240	Hardware error	Hardware error
17	-256	File name not found	File name not found
18	-282	Illegal program name	Illegal program name
19	220	Measure error	Measure error

NO.	Error code	Error description	Explanation
20	221	Failed to set measure function	Failed to set measure 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	Device is secured, cannot 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	Setion name not found
36	272	Key_name_not_found	Key name not found
37	291	Update secured	Update secured, cannot update the device
38	292	Invalid update secure code	Invalid update secure code
39	293	Not found the service pack	Not found the service pack
40	294	The service pack unavailable	The service pack unavailable
41	295	AppUpdate not found	AppUpdate.exe not found
Device related errors			

NO.	Error code	Error description	Explanation
42	-310	System error	System error
43	-311	Memory error	Memory error
44	-350	Queue overflow	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	Supply module is not connected
49	304	Vacuum module is not connected	Vacuum module is not connected
50	361	Open WLAN Failed	Open WLAN Failed
51	362	Set WLAN address mode failed	Set WLAN address mode failed
52	363	Set WLAN address failed	Set WLAN address failed
53	364	Communication port to WIFI module is not open	Communication port to WIFI module is not open
54	365	WLANisnotconnected	WLAN is not connected