

6270A, 8270A, 8370A

Pressure Controller/Calibrator

Programmers Reference Guide

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Introduction

This document defines the remote interface commands for the Fluke Calibration 6270A, 8270A, or 8370A Pressure Controller/Calibrator (the Product or Instrument). These commands may be used by a computer connected through any of the remote interface ports to set settings, read measurement data, and control the operation of the instrument. Command syntax and names follow the IEEE-488.2 and SCPI standards.

Contact Fluke Calibration

To contact Fluke Calibration, call one of the following telephone numbers:

- Technical Support USA: 1-877-355-3225
- Calibration/Repair USA: 1-877-355-3225
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31-40-2675-200
- Japan: +81-3-6714-3114
- Singapore: +65-6799-5566
- China: +86-400-810-3435
- Brazil: +55-11-3759-7600
- Anywhere in the world: +1-425-446-6110

To see product information or download manuals and the latest manual supplements, visit Fluke Calibration's website at www.flukecal.com.

To register your product, visit <http://flukecal.com/register-product>.

Remote Operation Commands

The Instrument accepts commands for setting parameters, executing functions or responding with requested data. These commands are in the form of strings of ASCII- encoded characters.

Commands consist of a command header and, if necessary, parameter data. All commands must be terminated with either a carriage return (ASCII 0D hex or 13 decimal) or new line character (ASCII 0A hex or 10 decimal).

Command headers consist of one or more mnemonics separated by colons (:). Mnemonics may use letter characters, the underscore character (_), and numeric digits. Commands are not case sensitive. Mnemonics often have alternate forms. Most mnemonics have a long form that is more readable and a short form consisting of three or four characters that is more efficient.

Query commands are commands that request data in response. Query commands have a question mark (?) immediately following the command header. Responses to query commands are generated immediately and placed in the output buffer. Responses are then transmitted automatically to the PC.

Some commands require parameter data to specify values for one or more parameters. The command header is separated from the parameter data by a space (ASCII 20 hex or 32 decimal). Multiple parameters are separated by a comma (,).

System Status Diagram

Figure 1 shows the System Status Diagram.

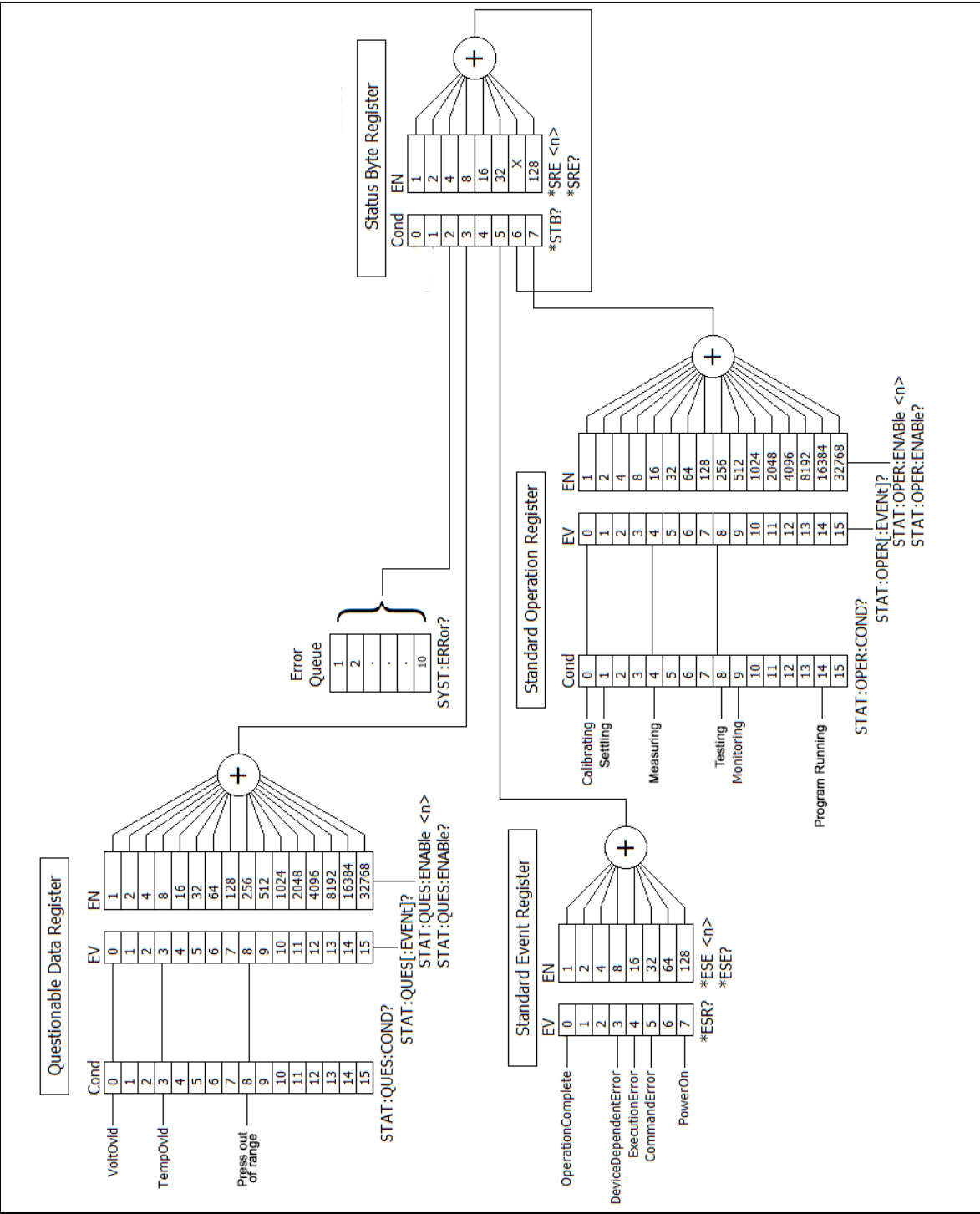


Figure 1. System Status Diagram

status.png

List of Commands

Table 1 lists the command set for the Product in alphabetical order.

Table 1. List of Commands

Command	Comment
*CLS	Clear all status registers and the error queue.
*ESE	Set the Standard Event Status Enable register.
*ESR?	Query and clear the Standard Event Status register.
*IDN?	Query the instrument identification.
*OPC	Set the operation complete bit of the Standard Event Enable Register when all pending operations are completed.
*OPC?	Return "1" when all pending operations are completed.
*OPT?	Returns information on currently fitted options.
*RST	Reset operating settings to default states.
*SRE?	Set the Service Request Enable register.
*STB?	Query the Status Byte Register.
*TST?	Perform an instrument self-test and return the results.
*WAI	Force the command parser to wait until all pending operations complete.

Table 1. List of Commands (cont.)

Command	Comment
[SOURce]:PRESsure:CLIMit	Control Limit
[SOURce]:PRESsure:SLEW	Maximum slew rate
[SOURce]:PRESsure:SLIMit	Static mode control limit
[SOURce]:PRESsure:STATic	Static or Dynamic control
[SOURce]:PRESsure:TOLerance	Control ready tolerance
[SOURce][:PRESsure]:TOLerance:RANGe	Control tolerance is a percent of range
[SOURce]:PRESsure[:LEVel][:IMMediate][:AMPLitude]	Setpoint
CALCulate:ATMosphere	Manual atmosphere value
CALCulate:ATMosphere:UNCertainty	Manual atmosphere uncertainty
CALCulate:LIMit:LOWer	Pressure low safety limit
CALCulate:LIMit:SLEW	(for compatibility only)
CALCulate:LIMit:UPPer	Pressure upper safety limit
CALCulate:LIMit:VENT	Pressure vent limit
CALCulate:TARE:STATE	Tare state
CALCulate:TARE:VALue	Amount of tare
CALCulate: UNCertainty:CONTRol	Additional control uncertainty
CALCulate: UNCertainty:PERCent	Additional percent of reading uncertainty
CALCulate: UNCertainty:PRESsure	Additional pressure uncertainty
CALibration:MODE	Calibration mode
CALibration[:PRESsure]:CALibration:POINts	Number of expected adjustment points
CALibration[:PRESsure]:CALibration:VALue	Expected adjustment points
CALibration[:PRESsure]:DATA:POINts	Number of calibration coefficients
CALibration[:PRESsure]:DATA:VALue	Calibration coefficients
CALibration[:PRESsure]:DATE	Last adjustment date
CALibration[:PRESsure]:SAVE	Save new adjustment coefficients
CALibration[:PRESsure]:VALue	Adjustment point
CALibration[:PRESsure]:ZERO:AUTO	Autozero
CALibration[:PRESsure]:ZERO:BARometer	Barometer selection
CALibration[:PRESsure]:ZERO:DATA	Manual zeroing
CALibration[:PRESsure]:ZERO:INITiate	Enter zeroing mode
CALibration[:PRESsure]:ZERO:MODule	Zeroing module
CALibration[:PRESsure]:ZERO:MODule:NAME?	Model number of zeroing module
CALibration[:PRESsure]:ZERO:MODule:SERial?	Serial number of zeroing module
CALibration[:PRESsure]:ZERO:RUN	Zero the instrument
CALibration[:PRESsure]:ZERO:STOP	Abort zero

Table 1. List of Commands (cont.)

Command	Comment
DISPlay:BRIGhtness	Display brightness
DISPlay:ENABle	Display enable
DISPlay:LANGuage	Display language
DISPlay:TEXT	(for compatibility only)
EMM:MODE<1 2 3>	MODE_DCV,MODE_DCI,MODE_SWI TCH (8270A and 8370A)
EMM:MODE?	MODE_DCV,MODE_DCI,MODE_SWI TCH (8270A and 8370A)
EMM:VERSion?	EMM firmware version (8270A and 8370A)
EMM:SN?	EMM serial number (8270A and 8370A)
HART:POLL:STATe <0 1>	Start/abort HART bus polling (8270A and 8370A)
HART:POLL:STATe?	Returns 1 when bus polling is in progress, return 2 when the bus polling is completed, otherwise returns 0. (8270A and 8370A)
HART:RESistor:STATe <0 1 >	Enable/disable 250 Ω HART resistor (8270A and 8370A)
HART:RESistor:STATe?	Returns 250 Ω HART resistor setting (8270A and 8370A)
HART:WRITe:STATe <0 1 >	Enable/disable write function (8270A and 8370A)
HART:WRITe:STATe?	Returns 1 when write function is enabled. (8270A and 8370A)
HART:UNIT:SYNC:STATe <0 1 >	Enable/disable pressure unit synchronization between UUT and mainframe. (8270A and 8370A)
HART:UNIT:SYNC:STATe?	Returns state of pressure unit synchronization (8270A and 8370A)
HART:CONNect:STATe?	Returns 1 when link is active, otherwise returns 0 (8270A and 8370A)
HART:DATA:PV?	Return PV_VALUE (8270A and 8370A)
HART:DATA:PV:UNIT <0 .. 255>	Set PV_UNIT (8270A and 8370A)
HART:DATA:PV:UNIT?	Returns code of PV_UNIT (8270A and 8370A)
HART:DATA:SV?	Returns SV_VALUE (8270A and 8370A)

Table 1. List of Commands (cont.)

Command	Comment
HART:DATA:SV:UNIT?	Returns code of SV_UNIT (8270A and 8370A)
HART:DATA:TV?	Returns TV_VALUE (8270A and 8370A)
HART:DATA:TV:UNIT?	Returns code of TV_UNIT (8270A and 8370A)
HART:DATA:QV?	Returns QV_VALUE (8270A and 8370A)
HART:DATA:QV:UNIT?	Returns code of QV_UNIT (8270A and 8370A)
HART:DATA:TAG <string>	Set Tag (8270A and 8370A)
HART:DATA:TAG?	Read Tag (8270A and 8370A)
HART:DATA:RANGE:UNIT?	Read unit code of LRV and URV (8270A and 8370A)
HART:DATA:RANGE:LOW <lr>	Set LRV (8270A and 8370A)
HART:DATA:RANGE:LOW?	Read LRV (8270A and 8370A)
HART:DATA:RANGE:HIGH <urv>	Set URV (8270A and 8370A)
HART:DATA:RANGE:HIGH?	Read URV (8270A and 8370A)
HART:DATA:TL:UNIT?	Read unit code of test limit (8270A and 8370A)
HART:DATA:TL:LOW?	Read LTL (8270A and 8370A)
HART:DATA:TL:HIGH?	Read UTL (8270A and 8370A)
HART:TRIM:DAL:STaTe <0 1 >	Enable/disable 4 mA fixed current mode (8270A and 8370A)
HART:TRIM:DAL:STaTe?	Read 4 mA fixed current mode (8270A and 8370A)
HART:TRIM:DAL <measured milliamp>	Trim 4 mA with real milliamp value (8270A and 8370A)
HART:TRIM:DAH:STaTe <0 1 >	Enable/disable 20 mA fixed current mode (8270A and 8370A)
HART:TRIM:DAH:STaTe?	Read 20 mA fixed current mode (8270A and 8370A)
HART:TRIM:DAH <measured milliamp>	Trim 20 mA with real milliamp value (8270A and 8370A)
HART:TRIM:RANGE:LOW	Set LRV with PV (8270A and 8370A)
HART:TRIM:RANGE:HIGH	Set URV with PV (8270A and 8370A)
HART:TRIM:ZERO	Set PV to zero (8270A and 8370A)
HART:DIAGnostic 1	Diagnostic the transmitter (8270A and 8370A)

Table 1. List of Commands (cont.)

Command	Comment
HART:DATA:MESSAge?	Read the message (8270A and 8370A)
HART:DATA:MESSAge <string>	Write the message (8270A and 8370A)
HART:DATA:DESCription?	Read the description (8270A and 8370A)
HART:DATA:DESCription <string>	Write the description (Only support the hart version is 6.0 or greater (8270A and 8370A)
HART:POLL:ADDReSS?	Read the poll address (8270A and 8370A)
HART:POLL:ADDReSS <value>	Write the poll address (0~63) (8270A and 8370A)
INSTRument:FUNCTion ?	Read system work mode (8270A and 8370A)
INSTRument:FUNCTion<n>	Write system work mode (8270A and 8370A)
LOOP:STATe <0 1 >	Enable/disable loop power (8270A and 8370A)
LOOP:STATe?	Read loop power status (8270A and 8370A)
MEASure:ATMosphere	
MEASure:VAL?	Triggers a new milliamp or voltage measurement and return the reading (8270A and 8370A)
DISPlay:VERSion?	UI version
MEASure:SWITCh	Pressure switch input
MEASure:TEMPerature	Temperature sensors
MEASure[:PRESSure]	Pressure sensors
MEASure[:PRESSure]:SLEW	Pressure slew rate
OUTPut:SOLenoid	External solenoid drivers
OUTPut:CPS	CPS option
OUTPut:ISOLation	Isolation valve option
OUTPut:STATe	Control mode
OUTPut:SOLenoid:PRESSure	Operate external solenoid by pressure reading
OUTPut:SOLenoid:STATe	External solenoid drivers
OUTPut[:PRESSure]:MODE	Control mode

Table 1. List of Commands (cont.)

Command	Comment
SENSe:ATMosphere:MODUle	Atmospheric module
SENSe[:PRESSure]:FILTer	Pressure reading filter
SENSe[:PRESSure]:MODE	Absolute or Gauge
SENSe[:PRESSure]:MODUle	Module selection
SENSe[:PRESSure]:MODUle:LOWer	Module range low
SENSe[:PRESSure]:MODUle:NAME	Module model name
SENSe[:PRESSure]:MODUle:SERial	Module serial number
SENSe[:PRESSure]:MODUle:UNCertainty:ADD	Module uncertainty combination
SENSe[:PRESSure]:MODUle:UNCertainty:RELative	Module relative uncertainty
SENSe[:PRESSure]:MODUle:UNCertainty:THReshold	Module threshold uncertainty
SENSe[:PRESSure]:MODUle:UNCertainty:ZERO	Module zero uncertainty
SENSe[:PRESSure]:MODUle:UPPer	Module range upper
SENSe[:PRESSure]:MODUle:VERSion	Module version
SENSe[:PRESSure]:RANGe:LOWer	Instrument range low
SENSe[:PRESSure]:RANGe:MODUle	Module range
SENSe[:PRESSure]:RANGe[:UPPer]	Instrument range upper
SENSe[:PRESSure]:REFerence:MEDium	Head height medium
SENSe[:PRESSure]:REFerence[:HEIGHt]	Head height
SENSe[:PRESSure]:REFerence[:HEIGHt]:UNCertainty	Head height uncertainty
SENSe[:PRESSure]:RESolution	Resolution of pressure display
SENSe[:PRESSure]:RESolution:AUTO	Auto-resolution
STATus:OPERation:CONDition	Query the Operation Status Condition Register
STATus:OPERation:ENABle	Set the Operation Status Enable Register
STATus:OPERation[:EVENT]	Query and clear the Operation Status Event Register
STATus:PRESet	Set status enable registers to disabled states
STATus:QUEStionable:CONDition	Query the Questionable Status Condition Register

Table 1. List of Commands (cont.)

Command	Comment
STATUS:QUESTIONABLE:ENABLE	Set the Questionable Status Enable Register
STATUS:QUESTIONABLE[:EVENT]	Query and clear the Questionable Status Event Register
SYSTEM:COMMUNICATE:GPIB[:SELF][:ADDRESS]	GPIB address
SYSTEM:COMMUNICATE:SERIAL:CONTROL:RTS	RS-232 RTS signal
SYSTEM:COMMUNICATE:SERIAL:INTERFACE	RS-232 interface type
SYSTEM:COMMUNICATE:SERIAL[:RECEIVE]:BAUD	RS-232 baud rate
SYSTEM:COMMUNICATE:SERIAL[:RECEIVE]:BITS	RS-232 data bits
SYSTEM:COMMUNICATE:SERIAL[:RECEIVE]:EOL	RS-232 end of line
SYSTEM:COMMUNICATE:SERIAL[:RECEIVE]:PACE	RS-232 handshake
SYSTEM:COMMUNICATE:SERIAL[:RECEIVE]:PARITY[:TYPE]	RS-232 parity
SYSTEM:COMMUNICATE:SERIAL[:RECEIVE]:SBITS	RS-232 stop bits
SYSTEM:COMMUNICATE:SERIAL[:TRANSMIT]:BAUD	RS-232 baud rate
SYSTEM:COMMUNICATE:SERIAL[:TRANSMIT]:BITS	RS-232 data bits
SYSTEM:COMMUNICATE:SERIAL[:TRANSMIT]:EOL	RS-232 end of line
SYSTEM:COMMUNICATE:SERIAL[:TRANSMIT]:PACE	RS-232 handshake
SYSTEM:COMMUNICATE:SERIAL[:TRANSMIT]:PARITY[:TYPE]	RS-232 parity
SYSTEM:COMMUNICATE:SERIAL[:TRANSMIT]:SBITS	RS-232 stop bits
SYSTEM:COMMUNICATE:SOCKET:ADDRESS	Ethernet IP address
SYSTEM:COMMUNICATE:SOCKET:DHCP	Ethernet DHCP enable
SYSTEM:COMMUNICATE:SOCKET:GATEWAY	Ethernet Gateway address
SYSTEM:COMMUNICATE:SOCKET:INTERFACE	Ethernet interface type
SYSTEM:COMMUNICATE:SOCKET:MAC	Ethernet MAC address
SYSTEM:COMMUNICATE:SOCKET:MASK	Ethernet subnet mask
SYSTEM:COMMUNICATE:SOCKET:NAME	Ethernet system name
SYSTEM:COMMUNICATE:SOCKET:PORT	Ethernet Port number
SYSTEM:COMMUNICATE:USB:EOL	USB end of line
SYSTEM:COMMUNICATE:USB:INTERFACE	USB interface type
SYSTEM:DATE	Set the date of the system clock
SYSTEM:DEFAULT	Reset to system default

Table 1. List of Commands (cont.)

Command	Comment
SYSTem:ERRor	Read and remove the next error in the error queue
SYSTem:KLOCK	Keyboard lock
SYSTem:LANGuage	Remote interface protocol emulation
SYSTem:PRESet	Status Preset
SYSTem:STACK	System stacking
SYSTem:TIME	Set the time of the system clock
SYSTem:VERSion	Query the SCPI version
TEST:ELECtronic	Electronic self-test
TEST:PNEumatic	Pneumatic self-test
TEST:STOP	Abort self-test
TEST:TUNE	Controller tune
UNIT:DEFine	User-defined units
UNIT:LENGth	Length units
UNIT:TEMPerature	Temperature units
UNIT[:PRESSure]	Pressure units

Alphabetical List of Serial Commands

Each command description provides the structure (long and short format), a description of the command purpose, a command example, an example of what the command returns (as applicable to query commands), and notes specific to the command. The bullet-points below apply to each group of commands:

- Numeric data, specified by the mnemonic, <num>, uses ASCII characters to represent numbers. Numbers may contain a plus or minus ('+' or '-') sign, decimal point ('.'), and exponent ('E' or 'e') with its sign. If a fractional component is received when only an integer is required, the number is rounded to the nearest integer without any resulting error message.
- Unrecognized commands or commands with incorrect syntax or invalid parameters generate error messages in the error queue.
- Upper case letters designate syntax that is required when issuing the command. Lower case letters are optional and may be omitted.
- < > indicates a required parameter.
- [] indicates optional parameters.
- () indicates a group of parameters that must be used together.
- ']' indicates alternate parameter values.
- <n> indicates a number is required.
- <boolean> indicates a Boolean value (0 or 1) is required. The mnemonics OFF and ON are also accepted for 0 and 1, respectively.
- <unit> indicates max unit string is required (maximum 3 letters). The character string must be enclosed in quotation marks.
- <range> indicates a range value is required.
- <name> indicates a character string is required. The character string must be enclosed in quotation marks.
- <year> indicates a four digit number is required.
- <month> indicates a one or two digit number is required.
- <day> indicates a one or two digit number is required.
- <hour> indicates a one or two digit number is required.
- <minute> indicates a one or two digit number is required.
- <second> indicates a one or two digit number is required.
- <psensor> indicates a pressure sensor index.
 - 1 Active Pressure
 - 3 System atmospheric pressure
 - 4 Test pressure of control module
 - 5 Pressure of module in slot 1
 - 6 Supply pressure of control module
 - 7 Exhaust pressure of control module
 - 14 Test pressure of control module in Auxiliary chassis 1
 - 15 Pressure of module in slot 2
 - 16 Supply pressure of control module in Auxiliary chassis 1
 - 17 Exhaust pressure of control module in Auxiliary chassis 1
 - 24 Test pressure of control module in Auxiliary chassis 1

- 25 Pressure of module in slot 3
- 26 Supply pressure of control module in Auxiliary chassis 2
- 27 Exhaust pressure of control module in Auxiliary chassis 2
- 35 Pressure of module in slot 4
- 45 Pressure of module in slot 5
- 55 Pressure of module in Auxiliary chassis 1, slot 1
- 65 Pressure of module in Auxiliary chassis 1, slot 2
- 75 Pressure of module in Auxiliary chassis 1, slot 3
- 85 Pressure of module in Auxiliary chassis 1, slot 4
- 95 Pressure of module in Auxiliary chassis 1, slot 5
- 105 Pressure of module in Auxiliary chassis 2, slot 1
- 115 Pressure of module in Auxiliary chassis 2, slot 2
- 125 Pressure of module in Auxiliary chassis 2, slot 3
- 135 Pressure of module in Auxiliary chassis 2, slot 4
- 145 Pressure of module in Auxiliary chassis 2, slot 5
- <tsensor> indicates a temperature sensor number.
 - 2 Sensor temperature of module in slot 1
 - 12 Sensor Temperature of module in slot 2
 - 22 Sensor Temperature of module in slot 3
 - 32 Sensor Temperature of module in slot 4
 - 42 Sensor Temperature of module in slot 5
 - 52 Sensor temperature of module in Auxiliary chassis 1, slot 1
 - 62 Sensor Temperature of module in Auxiliary chassis 1, slot 2
 - 72 Sensor Temperature of module in Auxiliary chassis 1, slot 3
 - 82 Sensor Temperature of module in Auxiliary chassis 1, slot 4
 - 92 Sensor Temperature of module in Auxiliary chassis 1, slot 5
 - 102 Sensor temperature of module in Auxiliary chassis 2, slot 1
 - 112 Sensor Temperature of module in Auxiliary chassis 2, slot 2
 - 122 Sensor Temperature of module in Auxiliary chassis 2, slot 3
 - 132 Sensor Temperature of module in Auxiliary chassis 2, slot 4
 - 142 Sensor Temperature of module in Auxiliary chassis 2, slot 5

***CLS**

Description: Clear the status registers and the error queue. Status event registers are reset to 0. The registers affected are the Operation Status Event register, Questionable Status Event register, and the Event Status Register. The *CLS command does not affect any of the associated condition or enable registers. It may indirectly affect the Status Byte Register. The error queue is also cleared of all logged errors.

Example: *CLS

Related Commands:

*ESR? SYSTem:ERRor?
STATus:OPERation:EVENT?
STATus:QUEStionable:EVENT?

***ESE <n>**

***ESE?**

Description: Set the Event Status Enable mask that determines which bits of the Event Status Register are reported in the Event Status Summary bit (bit5) of the Status Byte Register. <n> is the sum of the decimal values of the bits of the Event Status Register that will be reported in the Event Status Summary bit of the Status Byte Register. The Status Byte register is updated to reflect any change in the enable registers associated with the summary bits. Event Status Enable is set to 0 at power-on. *CLS and *RST does not affect Event Status Enable.

Example: *ESE?
Response: 255
Set Example: *ESE 60

Related Commands:

*ESR?
*STB?
*ESR?

Description: Query the Event Status Register and clear the register. The Event Status Register reports various instrument events or changes when they occur. The return value is the sum of the decimal values of the asserted bits of the register. The register bits, their decimal values (in parentheses), and their definitions are as follows:

- Bit 0 (1): Operation Complete
- Bit 1 (2): [Not used]
- Bit 2 (4): [Not used]
- Bit 3 (8): Device Dependent Error
- Bit 4 (16): Execution Error
- Bit 5 (32): Command Error
- Bit 6 (64): [Not used]
- Bit 7 (128): Power On

Bits in the Event Status Register may affect the Event Status Summary bit (bit 5) of the Status Byte Register depending on the bits that are set in the Event Status Enable register. *CLS and *RST does not affect Event Status Enable.

Example: *ESR?

Response: 32

Related Commands:

*ESE

*STB?

*CLS

***IDN?**

Description: Query the product identification. The response contains the name of the manufacturer, model number, serial number, firmware version. The product information cannot be changed.

Example: *IDN?

Response: FLUKE, 6270A, 12345678, 1.00

***OPC**

Description: Set the Operation Complete bit of the Event Status Register when all pending command operations complete. All commands are sequential, so the Operation Complete bit is always set immediately when this command is received.

Example: *OPC

Related Commands:

*ESR?

STATus:OPERation:EVENT?

*OPC

*WAI

***OPC?**

Description: Return "1" when all pending command operations are complete. All commands are sequential, so this query always returns '1' immediately.

Example: *OPC?

Response: 1

Related Commands:

*OPC

STATus:OPERation[:EVENT]?

***OPT?**

Description: Query the instrument options. Currently this instrument has no options to report.

Example: *OPT?

Response: 0

Related Commands:

*IDN?

***RST**

Description: Sets channel instrument settings to default states. The reset command performs the following actions:

- Stop all running tasks and tests
- Stop controller and enter Measure mode if not already in Vent mode

Settings and memory not affected by *RST include data file memory, setup file memory, language, remote interface settings, time and date, password configuration, and instrument calibration. Reset also does not directly affect status registers or the error queue, nor does it affect status enable registers.

Example: *RST

Related Commands:

*CLS

***SRE <n>**

***SRE?**

Description: Set the Service Request Enable for the Status Byte register. The Service Request Enable determines which bits of the Status Byte register are reported in the Master Summary Status bit of the Status Byte register. <n> is the sum of the decimal values of the bits of the Status Byte register that will be reported in the Master Status Summary bit.

The Status Byte register is updated to reflect any change in the enable registers associated with the summary bits. Service Request Enable is set to 0 at power-on. *CLS and *RST does not affect Event Status Enable.

Example: *SRE?

Response: 32

Set Example: *SRE 32

Related Commands:

*STB?

***STB?**

Description: Query the Status Byte register. The Status Byte register reports various instrument conditions. The return value is the sum of the decimal values of the asserted bits of the register. The register bits, their decimal values (in parentheses), and their definitions are as follows:

- Bit 0 (1): [Not used]
- Bit 1 (2): [Not used]
- Bit 2 (4): Error Queue Summary
- Bit 3 (8): Questionable Status Summary
- Bit 4 (16): [Not used]
- Bit 5 (32): Event Status Summary
- Bit 6 (64): Master Status Summary
- Bit 7 (128): Operation Status Summary

Summary bits are set when any bit in the associated event register is set and the corresponding bit in the associated enable register is also set. The Questionable Status Summary bit is associated with the Questionable Status Event register and the Questionable Status Enable register. The Event Status Summary bit is associated with the Event Status Register and the Event Status Enable register. The Operation Status Summary bit is associated with the Operation Status Event register and the Operation Status Enable register. The Master Status Summary bit is set when any other bit in the Status Byte register is set while the corresponding bit in the Service Request Enable register is set. The Error Queue Summary bit is set if there are one or more errors in the error queue.

Reading the Status Byte register does not clear the register. The register always reports the associated status. *CLS does not clear the Status Byte register but may indirectly affect it through the associated status registers and queues. *RST does not affect the Status Byte register.

Example: *STB?

Response: 32

Related Commands:

*ESR? SYSTem:ERRor?
STATus:OPERation:EVENT?
STATus:QUESTionable:EVENT?
*SRE

***TST?**

Description: Do a self-test and return the results.

Example: *TST?

***WAI**

Example: *WAI

Description: Wait until all pending command operations complete before executing further commands. All commands are sequential, so this command has no effect. It is provided for IEEE-488.2 compliance.

Example: *WAI

Related Commands:

STATus:OPERation:EVENT?
*OPC?

ABORt

Description: Abort pressure control. Immediately vents pressure. The command ABORt 0 will reset the abort state and return to normal operation.

Example: ABORt

[SOURce][:PRESsure]:CLIMit

Description: Control limits set an upper and lower pressure limit around the Setpoint. These limits are only used with the Static Control mode.

Set Example: SOURce:PRESSure:CLIMit 0.1

Query Example: SOURce:PRESSure:CLIMit?

Response: +1.00000000E-01

[SOURce][:PRESsure]:SLEW <num>

Description: The maximum slew rate requested by the controller. The units are set by UNIT:PRES command. Range must be greater than zero. 10 times full scale per second will normally be unlimited.

Set Example: SOURce:PRESSure:SLEW 0.1234

Query Example: SOURce:PRESSure:SLEW?

Response: +1.23400000E-01

[SOURce][:PRESsure]:SLIMit

Description: Stability Limit is used only with Static Control mode. The limit defines the stability at which the measurement indicator shows Ready.

Set Example: SOURce:PRESSure:SLIMit 0.1

Query Example: SOURce:PRESSure:SLIMit?

Response: +1.00000000E-01

[SOURce][:PRESsure]:STATic

Description: Static Control sets the pressure slightly above the target pressure value and then turns off active pressure control.

Set Example: SOURce:PRESSure:STATic 1

Query Example: SOURce:PRESSure:STATic?

Response: 1

[SOURce][:PRESsure]:TOLerance <num>

Description: The tolerance is used to determine the Ready flag on the front panel and the Settling bit on the remote interface. Must be a positive value. If zero the Ready flag will never be displayed.

Set Example: SOURce:PRESSure:TOLerance 1.234

Query Example: SOURce:PRESSure:TOLerance?

Response: 1+1.23400000E+00

[SOURce][:PRESsure]:TOLerance:RANGe <Boolean>

Description: Enables or disables ready tolerance to percent of reading. When disabled ready tolerance is in pressure units.

Set Example: SOURCE:PRESSURE:TOLERANCE:RANGE ON

Query Example: SOURCE:PRESSURE:TOLERANCE:RANGE?

Response: 1

[SOURce][:PRESsure][:LEVel][:IMMediate][:AMPLitude] <num>

Description: Controls the setpoint of the pressure.

Set Example: :PRESsure:LEVel:IMMediate:AMPLitude 98.76

Query Example: :PRESsure:LEVel:IMMediate:AMPLitude?

Response: +9.87600000E+01

CALCulate:ATMosphere

Description: Manual entry of barometric value.

Set Example: CALCulate:ATMosphere 101.325

Query Example: CALCulate:ATMosphere?

Response: +1.01325000E+02

CALCulate:ATMosphere:UNCertainty <value>

Description: Sets the pressure uncertainty of the manual atmosphere entry.

Set Example: CALCULATE:ATMOSPHERE:UNCERTAINTY 0.001

Query Example: CALCULATE:ATMOSPHERE:UNCERTAINTY?

Response: +1.00000000E-03

CALCulate:LIMit:LOWer <num>

Description: This command will set the low limit pressure based on the units set in the last UNIT:PRES command.

Set Example: CALCULATE:LIMIT:LOWER 1.23

Query Example: CALCULATE:LIMIT:LOWER?

Response: +1.23000000E+00

CALCulate:LIMit:UPPer <num>

Description: This command will set the high limit pressure based on the units set in the last UNIT:PRES command. The high limit must be greater than the low limit.

Set Example: CALCULATE:LIMIT:UPPER 1.23

Query Example: CALCULATE:LIMIT:UPPER?

Response: +1.23000000E+00

CALCulate:LIMit:VENT <num>

Description: Can be disabled by setting to a pressure greater than the high limit.

Set Example: CALCulate:LIMit:VENT 1.23

Query Example: CALCulate:LIMit:VENT?

Response: +1.23000000E+00

CALCulate:TARE:STATE <boolean>

Description: Set Tare to On will use the current pressure as the tare amount; setting the tared pressure to zero. Only absolute mode sensors can be tared.

Set Example: CALCulate:TARE:STATE ON

Query Example: CALCulate:TARE:STATE?

Response: 1

CALCulate:TARE:VALue <num>

Description: If <num> is zero tare mode is turned off, otherwise tare mode is turned on. Query will return the current tare.

Set Example: CALCulate:TARE:VALue 1.23

Query Example: CALCulate:TARE:VALue?

Response: +1.2300000E+00

CALCulate:UNCertainty:CONTrol <boolean>

Description: Specifies if control uncertainty is included in calculated uncertainty.

Set Example: CALCulate: UNCertainty:CONTrol ON

Query Example: CALCulate: UNCertainty:CONTrol?

Response: 1

CALCulate:UNCertainty:PERCent <value>

Description: Sets the Additional Uncertainty Component 2 in percent of reading.

Set Example: CALCulate: UNCertainty:PERCent 0.002

Query Example: CALCulate: UNCertainty:PERCent?

Response: +2.0000000E-03

CALCulate:UNCertainty:PRESSure <value>

Description: Sets the Additional Uncertainty Component 1 in current pressure units.

Set Example: CALCulate: UNCertainty:PRESSure 0.02

Query Example: CALCulate: UNCertainty:PRESSure?

Response: +2.0000000E-02

CALibration:MODE <num>

Description: 0, 1, or Calibration access code.

Note

Calibration must be enabled before any CAL:PRES:VAL commands or CAL:PRES:DATA:VAL write commands. The <code> must match the calibration access code of the instrument. If the instrument does not have a calibration access code then any non-zero integer value will work. A <code> of zero will turn off the calibration enable. Query will return 1 if calibration is enabled.

Set Example: CALibration:MODE 1

Query Example: CALibration:MODE?

Response: 1

CALibration[:PRESSure<psensor>]:CALibration:POINTS?

Description: Number of points needed to calibrate the sensor. Does not include zero.

Set Example: Query Only

Query Example: CALibration:PRESSure15:CALibration:POINTS?

Response: 2

CALibration[:PRESSsure<psensor>]:CALibration:VALue<n>?

Description: Actual calibration point must be within 5% of full scale of the nominal. May be required to be closer based on calibration sequence.

Set Example: Query Only

Query Example: CALibration:PRESSsure15:CALibration:VALue2?

Response: +1.23000000E+00

CALibration[:PRESSsure<psensor>]:DATA:POINts<n> <num>

Description: Number of constant that define the calibration of the sensor.

Set Example: Query Only

Query Example: CALibration:PRESSsure:DATA:POINts?

Response: 12

CALibration[:PRESSsure<psensor>]:DATA:VALue <n> <num>

Description: Read or write sensor calibration constant. Calibration enable must be on to write (see CALibration:MODE).

Set Example: CALibration:PRESSsure5:DATA:VALue12 1.23

Query Example: CALibration:PRESSsure5:DATA:VALue12?

Response: C0,+0.00000000E+00

CALibration[:PRESSsure<psensor>]:DATE?

Description: Last calibration date and time is set by calibrating the instrument.

Note

To set the calibration date, the pressure sensor number (5, 15, 25, 35, or 45) must be included in the command. CAL:PRES5:DATE is acceptable. CAL:PRES:DATE is not. The calibration date is automatically updated when an adjustment is performed. This should only be used to set the date if the unit was calibrated but not adjusted.

Set Example: CALibration:PRESSsure5:DATE

Query Example: CALibration:PRESSsure:DATE?

Response: 2015,3,17

CALibration[:PRESSsure<psensor>]:SAVE

Description: Store calibration

Set Example: CALibration:PRESSsure5:SAVE

Query Example: Command Only

CALibration[:PRESSsure<psensor>]:VALue<num>

Description: Perform calibration point by entering value from standard. Read returns last written value for point.

Set Example: CALibration:PRESSsure:VALue12 1.23

Query Example: CALibration:PRESSsure:VALue12?

Response: +1.23000000E+00

CALibration[:PRESSsure]:ZERO:AUTO <boolean>

Description: Turns on or turns off auto zeroing for the instrument. Cannot be set for sensors individually.

Set Example: CALibration:PRESSsure:ZERO:AUTO ON

Query Example: CALibration:PRESSsure:ZERO:AUTO?

Response: 1

CALibration[:PRESSsure]:ZERO:BARometer <value>

Description: Sets the manual zeroing value and performs a manual zero. Reading will return the last value used.

Set Example: CALibration:PRESSsure:ZERO:BAROMETER 101.325

Query Example: CALibration:PRESSsure:ZERO:BAROMETER?

Response: +1.01325000E+2

CALibration[:PRESSsure<psensor>]:ZERO:DATA <value>

Description: Sets the zOffset for the sensor.

Set Example: CALibration:PRESSsure15:ZERO:DATA 1.4

Query Example: CALibration:PRESSsure15:ZERO:DATA?

Response: +1.40000000E+00

CALibration[:PRESSsure<psensor>]:ZERO:INITiate

Description: Puts the instrument into zeroing mode putting zero pressure on the sensor.

Set Example: CALibration:PRESSsure:ZERO:INITiate

Query Example: CALibration:PRESSsure:ZERO:INITiate?

Response: <calstat>,<presstat>,<tempstat>,<refstat>

<calstat> Set to 1 if RUN command has been received. Range: 0 (RUN command has not been received), 1 (RUN command has been received).

<presstat> Status of pressure reading. Range: 0=Stable, <0=Out of Range, >0=Unstable

<tempstat>Status of sensor temperature. Range:=Stable, <0=Out of Range, >0=Unstable

<refstat> Status of reference. In absolute mode returns the status of the vacuum reading. If vacuum sensor is not installed or not in absolute mode this will always be 0 (Stable). Range: 0=Stable, <0=Out of Range, >0=Unstable

CALibration[:PRESSsure]:ZERO:MODule <slot>|MANual

Description: Selects the module used as the absolute zero reference and enables auto zeroing. A value of "MANUAL" disables auto zeroing.

Set Example: CALibration:PRESSsure:ZERO:MODULE 1

Query Example: CALibration:PRESSsure:ZERO:MODULE?

Response: 1

CALibration[:PRESSsure]:ZERO:MODule:NAME?

Description: Returns the model number of the absolute zeroing reference module.

Set Example: <none>

Query Example: CALibration:PRESSsure:ZERO:MODULE:NAME?

Response: PM600-A100K

CALibration[:PRESSure]:ZERO:MODule:SERIal?

Description: Returns the serial number of the absolute zeroing reference module.

Set Example: <none>

Query Example: CALibration:PRESSure:ZERO:MODULE:SERial?

Response: 12345678

CALibration[:PRESSure]:ZERO:RUN

Description: Sensor must be in zeroing mode (CAL:PRES:ZERO:INIT) and stable. Tells the sensor to perform zero adjustment.

Set Example: CALibration:PRESSure:ZERO:RUN

Query Example: Command only, no query

Response: none

CALibration[:PRESSure]:ZERO:STOP

Description: Exits zeroing mode and returns the sensor to measuring mode. No effect if sensor is not in zeroing mode.

Set Example: CALibration:PRESSure:ZERO:STOP

Query Example: Command only, no query

Response: none

DISPlay:BRIGhtness <num>

Description: Display brightness. 0 to 100.

Set Example: DISPlay:BRIGhtness 100

Query Example: DISPlay:BRIGhtness?

Response: 100

DISPlay:ENABle <Boolean>

Description: Set the Display to Off to change the front panel to the screen saver, only displaying the current pressure. Set the Display to On to restore the normal display to normal.

Set Example: DISPlay:ENABle OFF

Query Example: DISPlay:ENABle?

Response: 0

DISPlay:LANGuage <language>

Description: Set display language. Command accepts language names in UTF-8 or by numeric index.

Set Example: DISPlay:LANGuage ENGLISH

Query Example: DISPlay:LANGuage?

Response: English

DISPlay:UNCertainty <Boolean>

Description: Sets whether uncertainty is displayed on the front display.

Set Example: DISPLAY:UNCERTAINTY ON

Query Example: DISPLAY:UNCERTAINTY?

Response: 1

DISPlay:VERsion?

Description: Returns the version number of the GUI firmware.

Set Example: <none>

Query Example: DISPLAY:VERSION?

Response: 1.00

EMM:MODE 1|2|3

Description: Set EMM input mode to 1=DC Volts, 2=DC Current, or 3=Switch. (8270A with EMM only)

Set Example: EMM:MODE 1

Query Example: EMM:MODE?

Response: 1

EMM:SN?

Description: Read EMM serial number (8270A/8370A with EMM only)

Set Example: <none>

Query Example: EMM:SN?

Response: 11111111

EMM:VERsion?

Description: Read EMM firmware version (8270A/8370A with EMM only)

Set Example: <none>

Query Example: EMM:VERsion?

Response: 1.00

HART:CONNect:STATe?

Description: Returns 1 when HART connection is active, otherwise returns 0. (8270A with EMM only)

Set Example: <none>

Query Example: HART:CONNect:STATe?

Response: 1

HART:DATA:DESCription <string>

Description: HART description (8270A with EMM only)

Set Example: HART:DATA:DESCription "ABCDEF"

Query Example: HART:DATA:DESCription?

Response: ABCDEF

HART:DATA:MESSage <string>

Description: HART message (8270A/8370A with EMM only)

Set Example: HART:DATA:MESSage "ABCDEF"

Query Example: HART:DATA:MESSage?

Response: ABCDEF

HART:DATA:PV?

Description: Return HART PV value. (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:PV?

Response: +1.2300000E+00

HART:DATA:PV:UNIT <num>

Description: HART PV unit code (1 to 255). (8270A/8370A with EMM only)

Set Example: HART:DATA:PV:UNIT 1

Query Example: HART:DATA:PV:UNIT?

Response: 1

HART:DATA:QV?

Description: Return HART QV value. (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:QV?

Response: +1.2300000E+00

HART:DATA:QV:UNIT?

Description: return HART QV unit code (1 to 255). (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:QV:UNIT?

Response: 1

HART:DATA:SV?

Description: Return HART SV value. (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:SV?

Response: +1.2300000E+00

HART:DATA:SV:UNIT?

Description: return HART SV unit code (1 to 255). (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:SV:UNIT?

Response: 1

HART:DATA:TV?

Description: Return HART TV value. (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:TV?

Response: +1.2300000E+00

HART:DATA:TV:UNIT?

Description: return HART TV unit code (1 to 255). (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:TV:UNIT?

Response: 1

HART:DATA:RANGe:LOW <num>

Description: HART LRV value (8270A/8370A with EMM only)

Set Example: HART:DATA:RANGe:LOW 1.23

Query Example: HART:DATA:RANGe:LOW?

Response: +1.2300000E+00

HART:DATA:RANGe:HIGH <num>

Description: HART URV value (8270A/8370A with EMM only)

Set Example: HART:DATA:RANGe:HIGH 1.23

Query Example: HART:DATA:RANGe:HIGH?

Response: +1.2300000E+00

HART:DATA:RANGe:UNIT?

Description: return unit code of LRV and URV (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:RANGe:UNIT?

Response: 2

HART:DATA:TAG <string>

Description: HART tag string (8270A/8370A with EMM only)

Set Example: HART:DATA:TAG "ABCDEF"

Query Example: HART:DATA:TAG?

Response: ABCDEF

HART:DATA:TL:HIGH <num>

Description: HART UTL value (8270A/8370A with EMM only)

Set Example: HART:DATA:RANGe:HIGH 1.23

Query Example: HART:DATA:RANGe:HIGH?

Response: +1.2300000E+00

HART:DATA:TL:LOW <num>

Description: HART LTL value (8270A/8370A with EMM only)

Set Example: HART:DATA:RANGe:LOW 1.23

Query Example: HART:DATA:RANGe:LOW?

Response: +1.2300000E+00

HART:DATA:TL:UNIT?

Description: return unit code of Test Limit (8270A/8370A with EMM only)

Set Example: <none>

Query Example: HART:DATA:RANGe:UNIT?

Response: 2

HART:DIAGnostic

Description: HART self-diagnostic (8270A/8370A with EMM only)

Set Example: HART:DIAGnostic

Query Example: <none>

Response: <none>

HART:POLL:ADDRess <num>

Description: set HART poll address (8270A/8370A with EMM only)

Set Example: HART:POLL:ADDRess 1

Query Example: HART:POLL:ADDRess?

Response: 1

HART:POLL:STATe 0|1

Description: Enable/disable HART communication. Write values: 0=Disable HART, 1=Enable HART. Read values: 0=HART disabled, 1=HART polling, 2=HART polling done. (8270A/8370A with EMM only)

Set Example: HART:POLL:STATe 1

Query Example: HART:POLL:STATe?

Response: 1

HART:RESistor:STATe <boolean>

Description: Enable/disable 250 Ω HART resistor. (8270A/8370A with EMM only)

Set Example: HART:RESistor:STATe 1

Query Example: HART:RESistor:STATe?

Response: 1

HART:TRIM:DAL

Description: HART trim 4 mA (8270A/8370A with EMM only)

Set Example: HART:TRIM:DAL

Query Example: <none>

Response: <none>

HART:TRIM:DAL:STATe 0|1

Description: HART 4 mA fixed current mode (8270A/8370A with EMM only)

Set Example: HART:TRIM:DAL:STATe 1

Query Example: HART:TRIM:DAL:STATe?

Response: 1

HART:TRIM:DAH

Description: HART trim 20 mA (8270A/8370A with EMM only)

Set Example: HART:TRIM:DAH

Query Example: <none>

Response: <none>

HART:TRIM:DAH:STATe 0|1

Description: HART 20 mA fixed current mode (8270A/8370A with EMM only)

Set Example: HART:TRIM:DAH:STATe 1

Query Example: HART:TRIM:DAH:STATe?

Response: 1

HART:TRIM:RANGe:HIGH <num>

Description: HART set URV with PV (8270A/8370A with EMM only)

Set Example: HART:TRIM:RANGe:HIGH 1.23

Query Example: <none>

Response: <none>

HART:TRIM:RANGe:LOW <num>

Description: HART set LRV with PV (8270A/8370A with EMM only)

Set Example: HART:TRIM:RANGe:LOW 1.23

Query Example: <none>

Response: <none>

HART:TRIM:RANGe:ZERO

Description: HART set PV to zero (8270A/8370A with EMM only)

Set Example: HART:TRIM:RANGe:ZERO

Query Example: <none>

Response: <none>

HART:UNIT:SYNC:STATe <boolean>

Description: Enable/disable switching to the HART unit when connected.
(8270A/8370A with EMM only)

Set Example: HART:UNIT:SYNC:STATe 1

Query Example: HART:UNIT_SYNC:STATe?

Response: 1

HART:WRITe:STATe <boolean>

Description: Enable/disable HART writes. (8270A/8370A with EMM only)

Set Example: HART:WRITe:STATe 1

Query Example: HART:WRITe:STATe?

Response: 1

LOOP:STATe <boolean>

Description: enable/disable loop power (8270A/8370A with EMM only)

Set Example: LOOP:STATe 1

Query Example: LOOP:STATe?

Response: 1

INSTRument:FUNCTio<n> ?

Description: Switch the system work mode

<n> indicates the work mode

1-MODE_PRESSURE

2-MODE_ANALOG

3-MODE_HART

Set Example: INSTRument:FUNCTio 3

Query Example: INSTRument:FUNCTio?

Response: 3

MEASure:ATMosphere?

Description: Returns current atmospheric pressure reading in the measurement units specified by UNIT:PRESSure.

Set Example: Query only.

Query Example: MEASure:ATMosphere?

Response: +1.01325000E+02

MEASure:SWITCh?

Description: Reads state of pressure switch.

Set Example: <none>

Query Example: MEASURE:SWITCH?

Response: 1

MEASure:TEMPerature<tsensor>?

Description: Read temperature sensor in °C.

Set Example: Query Only

Query Example: MEASure:TEMPerature2?

Response: +2.50000000E+01

MEASure:VAL?

Description: Return milliamp or voltage measurement (8270A/8370A with EMM only).

Set Example: <none>

Query Example: MEASure:VAL?

Response: +1.2300000E+00

MEASure[:PRESSure]<psensor>?

Description: Current pressure reading.

Set Example: Query only

Query Example: MEASure:PRESSure?

Response: +9.80000000E+01

MEASure[:PRESSure]:SLEW

Description: Current slew rate in pressure units per minute.

Set Example: Query only.

Query Example: MEASure:PRESSure:SLEW?

Response: +4.23982000E+02

MEASure:PRESSure:UNCertainty?

Description: Read calculated pressure measurement uncertainty. Units are set by UNIT:PRESSURE.

Set Example: Query only.

Query Example: MEASure:PRESSure:UNCertainty?

Response: +1.12000000E-03

OUTPut:ABORt <Boolean>

Description: Enables or disable the control of the optional Abort valve on the 8270A.

Set Example: OUTPUT:ABORT ON

Query Example: OUTPUT:ABORT?

Response: 1

OUTPut:CPS <Boolean>

Description: Enables or disable the control of the CPS.

Set Example: OUTPUT:CPS ON

Query Example: OUTPUT:CPS?

Response: 1

OUTPut:ISOLation <Boolean>

Description: Enables or disable the control of the external isolation valve

Set Example: OUTPUT:ISOLATION ON

Query Example: OUTPUT:ISOLATION?

Response: 1

OUTPut:SISolation OFF|DRV1|DRV2|DRV3|DRV4

Description: Enables or disable the control of the optional Supply Isolation valve on the 8270A.

Set Example: OUTPUT:SISOLATION DRV1

Query Example: OUTPUT:SISOLATION?

Response: DRV1

OUTPut:SOLenoid<n> <boolean>

Description: Sets state of external 24 V drivers. <n> is 1 to 4.

Set Example: OUTPut:SOLenoid2 ON

Query Example: OUTPut:SOLenoid2?

Response: 1

OUTPut:SOLenoid<n>:DCYCLE <value>

Description: Sets the low power duty cycle of external 24 V drivers on the 8270A. <n> is 1 to 4. <value> is 0 A to 100. A value of 0 uses the default duty cycle.

Set Example: OUTPUT:SOL2:DCYCLE 40

Query Example: OUTPUT:SOL2:DCYCLE?

Response: +4.00000000E+01

OUTPut:SOLenoid<n>:PRESSure <lower>,<upper>[,<grouped>]

Description: Sets a range of setpoints to turn on an external 24 V driver. The driver will be enabled when the absolute setpoint is between the <lower> and <upper> pressures and disabled when the setpoint is outside the range. <n> is the external driver (1 to 4). If the optional parameter <grouped> is set to 1 for multiple drivers then only one of them is turned on at a time.

Set Example: OUTPUT:SOLENOID:PRESSURE 100,200

Query Example: OUTPUT:SOLENOID:PRESSURE?

Response: +1.00000000E+02,+2.00000000E+02,0

OUTPut:SOLenoid:STATe <state>

Description: Sets the state of all external 24 V drivers as a single number. Value is the sum of the binary values of each driver (Driver 1 = 1, Driver 2 = 2, Driver 3 = 4, Driver 4 = 8). A value of 13 would turn on drivers 1, 3, and 4 (13 = 1 + 4 + 8). Drivers assigned to the CPS and Isolation valve are not affected by this command.

Set Example: OUTPUT:SOLENOID:STATE 13

Query Example: OUTPUT:SOLENOID:STATE?

Response: 13

OUTPut:STATe <Boolean>

Description: 1 or ON will enter Control mode, 0 or OFF will enter Measure mode.

Set Example: OUTPut:PRESSure:STATe ON

Query Example: OUTPut:PRESSure:STATe?

Response: 1

OUTPut[:PRESSure]:MODE <modename>

Description: Sets the mode of the instrument.

Set Example: OUTPut:PRESSure:MODE MEASURE

Query Example: OUTPut:PRESSure:MODE?

Response: MEASURE

<modename>

MEASure Measuring pressure but not changing.

CONTrol Actively controlling pressure to setpoint.

VENT Controlling pressure to atmosphere and venting.

SENSe:ATMosphere:MODule <n>

Description: Select Barometer module. Module must be capable of measuring the reference port pressure. The value MANUAL uses the value set by CALC:ATM.

Set Example: SENSe:ATMosphere:MODule 4

Query Example: SENSe:ATMosphere:MODule?

Response: 4

SENSe[:PRESSure]:FILTer <value>

Description: Sets the pressure filter value.

Set Example: SENSe:PRESSure:FILTer 20

Query Example: SENSe:PRESSure:FILTer?

Response: 20

SENSe[:PRESSure]:MODE ABSolute | GAUGE

Description: Sets the instrument pressure mode to ABSOLUTE or GAUGE

Set Example: SENSe:PRESSure:MODE GAUGE

Query Example: SENSe:PRESSure:MODE?

Response: GAUGE

SENSe[:PRESSure]:MODule<n>

Description: Select module slot for pressure reading. The value AUTO does automatic selection and the value FAST does fast automatic selection.

Set Example: SENSe:PRESSure:MODule 3

Query Example: SENSe:PRESSure:MODule?

Response: 3

SENSe[:PRESSure<psensor>]:MODule:LOWer?

Description: Returns the lower range limit of the requested module.

Set Example: <none>

Query Example: SENSe:PRESSure:MODULE:LOWER?

Response: -5.00000000+00

SENSe[:PRESSure]:MODUle<n>:NAME

Description: Read model number of module in slot <n>.

Set Example: Query only.

Query Example: SENSe:PRESSure:MODUle4:NAME?

Response: PM200-A100K

SENSe[:PRESSure]:MODUle<n>:SERial

Description: Read serial number of module in slot <n>.

Set Example: Query only.

Query Example: SENSe:PRESSure:MODUle3:SERial?

Response: 123456

SENSe[:PRESSure]:MODUle<n>:UNCertainty:ADD<boolean>

Description: Set uncertainty combination method of module in slot <n>. ON or 1 will set the method to additive. OFF or 0 will set the method to greater of.

Set Example: SENSe:PRESSure:MODUle2:UNCertainty:ADD ON

Query Example: SENSe:PRESSure:MODUle2:UNCertainty:ADD?

Response: 1

SENSe[:PRESSure]:MODUle<n>:UNCertainty:RELative <n>

Description: Set relative uncertainty of module in slot <n>. Relative uncertainty has units of % of reading.

Set Example: SENSe:PRESSure:MODUle5:UNCertainty:RELative 0.01

Query Example: SENSe:PRESSure:MODUle5:UNCertainty:RELative?

Response: +1.00000000E-02

SENSe[:PRESSure]:MODUle<n>:UNCertainty:THReshold <n>

Description: Set threshold uncertainty of module in slot <n>. Threshold uncertainty is in current pressure units.

Set Example: SENSe:PRESSure:MODUle:UNCertainty:THReshold 0.02

Query Example: SENSe:PRESSure:MODUle:UNCertainty:THReshold?

Response: +2.00000000E-02

SENSe[:PRESSure]:MODUle<n>:UNCertainty:ZERO <n>

Description: Set zero stability of module in slot <n>. Zero stability is in current pressure units.

Set Example: SENSe:PRESSure:MODUle4:UNCertainty:ZERO 0.03

Query Example: SENSe:PRESSure:MODUle4:UNCertainty:ZERO?

Response: +3.00000000E-02

SENSe[:PRESSure<psensor>]:MODUle:UPPer?

Description: Returns the upper range limit of the requested module.

Set Example: <none>

Query Example: SENSE:PRESSURE:MODULE:UPPER?

Response: +3.00000000E+03

SENSe[:PRESSure]:MODUle<n>:VERSIon

Description: Read firmware version of module in slot <n>.

Set Example: Query only.

Query Example: SENSe:PRESSure:MODUle3:VERSIon?

Response: 1.00

SENSe[:PRESSure]:RANGe:LOWer?

Description: Sensor lowest calibrated pressure of current range.

Set Example: Query Only

Query Example: SENSe:PRESSure:RANGe:LOWer?

Response: -1.23400000E+01

SENSe[:PRESSure]:RANGe:MODUle?

Description: Returns the active module slot. Zero is returned if no module is active.

Set Example: <none>

Query Example: SENSE:PRESSURE:RANGE:MODULE?

Response: 4

SENSe[:PRESSure]:RANGe[:UPPer] <n>

Description: Sensor highest calibrated pressure of current range. Setting a value attempts to switch to the lowest range that is greater than the value given.

Set Example: SENSe:PRESSure:RANGe:UPPer 1234

Query Example: SENSe:PRESSure:RANGe:UPPer?

Response: +1.23400000E+03

SENSe[:PRESSure]:REFerence:MEDIum <med>

Description: Sets the pressure medium used to calculate head correction.

Set Example: SENSe:PRESSure:REFerence:MEDIum AIR

Query Example: SENSe:PRESSure:REFerence:MEDIum?

Response: AIR

<med>

AIR Gas medium is dry air.

N2 Gas medium is nitrogen.

SENSe[:PRESSure]:REFerence[:HEIGHt] <num>

Description: Height difference between standard and Device Under Test (DUT). Positive values signify the DUT is below the standard. Negative values signify the DUT is above the standard. Units are set by UNIT:LENGTH.

Set Example: SENSe:PRESSure:REFerence:HEIGHt 1.234

Query Example: SENSe:PRESSure:REFerence:HEIGHt?

Response: 1.234

SENSe[:PRESSure]:REFerence[:HEIGHt]:UNCertainty <n>

Description: Uncertainty in the measurement of head height. Units are set by UNIT:LENGTH.

Set Example: SENSe:PRESSure:REFerence:HEIGHt:UNCertainty 0.1

Query Example: SENSe:PRESSure:REFerence:HEIGHt:UNCertainty?

Response: +1.00000000E-01

SENSe[:PRESSure]:RESolution <num>

Description: Resolution of front panel pressure display. 0.1 is one decimal, 0.01 is two decimals... Numbers 1 or greater set to zero decimals.

Set Example: SENSE:PRESSure:RESolution 0.01

Query Example: SENSE:PRESSure:RESolution?

Response: +1.00000000E-02

SENSe[:PRESSure]:RESolution:AUTO

Description: Returns front display to default resolution.

Set Example: SENSE:PRESSure[:RESolution]:AUTO ONCE

Query Example: Set command only, no query

Response: N/A

[SOURCE][:PRESSure]:SLEW:FAST <Boolean>

Description: Switches control mode between Dynamic-A and Dynamic-B on the 8270A.

Set Example: PRESSURE:SLEW:FAST ON

Query Example: PRESSURE:SLEW:FAST?

Response: 1

STATus:OPERation:CONDition?

Description: Query the Operation Status Condition register. The Operation Status Condition register reflects various states of operation. The return value is the sum of the decimal values of the asserted bits of the register. The defined bits, their decimal values (in parentheses), and their meanings are as follows:

- Bit 0 (1): A calibration operation is in progress.
- Bit 1 (2) Pressure is still slewing.
- Bit 4 (16): A measurement is in progress.
- Bit 8 (256): An automated test is in progress.
- Bit 9 (512): Monitor is active.
- Bit 14 (16384) A user-defined program is running.

*RST resets the measurement system and returns it to the idle state, and the Operation Status Condition register is updated to reflect the new state

Set Example: Query only.

Query Example: STAT:OPER:COND?

Response: 16

STATus:OPERation:ENABle <num>

Description: Set the Operation Status Enable register. The Operation Status Enable register determines which bits of the Operation Status Event register are reported in the Operation Status Summary bit of the Status Byte register. <n> is the sum of the decimal values of the bits of the Operation Status Event register that will be reported in the Status Byte register.

The Status Byte register is updated to reflect any change in the enable registers associated with the summary bits. Operation Status Enable is set to 0 at power-on. *CLS does not affect Operation Status Enable. *RST does not affect Operation Status Enable.

Set Example: STAT:OPER:ENAB 1024

Query Example: STAT:OPER:ENAB?

Response: 1024

STATus:OPERation[:EVENT] <num>

Description: Query and clear the Operation Status Event register. The return value is the sum of the decimal values of the asserted bits of the register. See STATUS:OPERATION:CONDITION register for definition of bits.

An asserted bit of the Operation Status Event register will assert the Operation Status Summary bit (Bit 7) of the Status Byte register if the corresponding bit of the Operation Status Enable register is set. *CLS clears all the bits in the Operation Status Event register. *RST does not directly affect the Operation Status Event register.

Set Example: Query only

Query Example: STAT:OPER?

Response: 16

Description: Set status enable registers to disabled states. The Alarm Status Enable, Questionable Status Enable, and Operation Status Enable registers are all set to 0. The Status Byte register is updated to reflect any changes in the enable registers associated with the summary bits. The Event Status Enable and Service Request Enable registers are not affected.

Set Example: STAT:PRES

Query Example: Command only, no Query

STATus:QUEStionable:CONDition

Description: Query the Questionable Status Condition register. The Questionable Status Condition register reports out-of-range or failed measurements. The return value is the sum of the decimal values of the asserted bits of the register. The defined bits, their decimal values (in parentheses), and their meanings are as follows:

- Bit 0 (1): A voltage reading is out-of-range.
- Bit 3 (8): A temperature reading is out-of-range.
- Bit 8 (256): A pressure reading is out-of-range.

*RST clears the measurement system and the Questionable Status Condition register is updated with the bits cleared.

Set Example: Query Only

Query Example: STAT:QUES:COND?

Response: 256

STATus:QUEStionable:ENABle <num>

Description: Set the Questionable Status Enable register. The Questionable Status Enable register determines which bits of the Questionable Status Event register are reported in the Questionable Status Summary bit of the Status Byte register. <n> is the sum of the decimal values of the bits of the Questionable Status Event register that will be reported in the Status Byte register.

The Status Byte register is updated to reflect any change in the enable registers associated with the summary bits. Questionable Status Enable is set to 0 at power-on. *CLS does not affect Questionable Status Enable. *RST does not affect Questionable Status Enable.

Set Example: STAT:QUES:ENAB 256

Query Example: STAT:QUES:ENAB?

Response: 256

STATus:QUEStionable[:EVENT] ?

Description: Query and clear the Questionable Status Event register. The return value is the sum of the decimal values of the asserted bits of the register. See STATUS:QUESTIONABLE:CONDITION for defined bits.

An asserted bit of the Questionable Status Event register will assert the Questionable Status Summary bit (Bit 3) of the Status Byte register if the corresponding bit of the Questionable Status Enable register is set. *CLS clears all the bits in the Questionable Status Event register. *RST does not directly affect the Questionable Status Event register.

Set Example: Query Only

Query Example: STAT:QUES?

Response: 256

SYSTem:COMMUnicate:GPIB[:SELF][:ADDReSS] <n>

Description: Address on GPIB bus.

Set Example: SYSTem:COMMUnicate:GPIB 10

Query Example: SYSTem:COMMUnicate:GPIB?

Response: 10

SYSTem:COMMUnicate:SERial:CONTRol:RTS ON | IBFull

Description: RTS Control ON will set RTS to always on. IBFULL disables RTS when the receive buffer is full.

Set Example: SYSTem:COMMUnicate:SERial:CONTRol:RTS ON

Query Example: SYSTem:COMMUnicate:SERial:CONTRol:RTS?

Response: 1

SYSTem:COMMUnicate:SERial:INTerface <boolean>

Description: Set the Interface type for the serial port. 1 or ON will select computer (no echo). 0 or OFF will select terminal (echo).

Set Example: SYSTem:COMMUnicate:SERial:INTerface ON

Query Example: SYSTem:COMMUnicate:SERial:INTerface?

Response: 1

SYSTem:COMMunicate:SERial[:RECeive]:BAUD <n>

Description: Set the serial port baud rate. <baud> is the baud rate number in bits per second. Allowed values are 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200. The default is 9600.

Set Example: SYST:COMM:SER:BAUD 9600

Query Example: SYST:COMM:SER:REC:BAUD?

Response: 9600

SYSTem:COMMunicate:SERial[:RECeive]:BITS 7 | 8

Description: Set the number of data bits for the serial port to 7 or 8.

Set Example: SYSTem:COMMunicate:SERial:RECeive:BITS 8

Query Example: SYSTem:COMMunicate:SERial:RECeive:BITS?

Response: 8

SYSTem:COMMunicate:SERial[:RECeive]:EOL CRLF | CR | LF

Description: Sets the characters transmitted at end of line on the serial port.

Set Example: SYSTEM:COMMUNICATE:SERIAL:EOL CRLF

Query Example: SYSTEM:COMMUNICATE:SERIAL:EOL?

Response: CRLF

SYSTem:COMMunicate:SERial[:RECeive]:PACE XON | NONE

Description: Enable XON/XOFF protocol for serial interface.

Set Example: SYSTem:COMMunicate:SERial:RECeive:PACE XON

Query Example: SYSTem:COMMunicate:SERial:RECeive:PACE?

Response: XON

SYSTem:COMMunicate:SERial[:RECeive]:PARity[:TYPE] NONE | IGNORE | ODD | EVEN

Description: Sets parity for serial interface.

Set Example: SYSTem:COMMunicate:SERial:RECeive:PARity EVEN

Query Example: SYSTem:COMMunicate:SERial:RECeive:PARity?

Response: EVEN

SYSTem:COMMunicate:SERial[:RECeive]:SBITS 1 | 2

Description: Set number of stop bits for serial port.

Set Example: SYSTem:COMMunicate:SERial:RECeive:SBITS 1

Query Example: SYSTem:COMMunicate:SERial:RECeive:SBITS?

Response: 1

SYSTem:COMMunicate:SERial:TRANsmi:t:BAUD

Description: The 6270A does not support different settings for transmit and receive on the serial port. This command is equivalent to the SYSTem:COMMunicate:SERial:RECeive corresponding command.

SYSTem:COMMunicate:SERial:TRANsmi:t:BITS

Description: The 6270A does not support different settings for transmit and receive on the serial port. This command is equivalent to the SYSTem:COMMunicate:SERial:RECeive corresponding command.

SYSTem:COMMunicate:SERial:TRANsmit:EOL CRLF | CR | LF

Description: The 6270A does not support different settings for transmit and receive on the serial port. This command is equivalent to the SYSTem:COMMunicate:SERial:RECeive corresponding command.

SYSTem:COMMunicate:SERial:TRANsmit:PACE

Description: The 6270A does not support different settings for transmit and receive on the serial port. This command is equivalent to the SYSTem:COMMunicate:SERial:RECeive corresponding command.

SYSTem:COMMunicate:SERial:TRANsmit:PARity[:TYPE]

Description: The 6270A does not support different settings for transmit and receive on the serial port. This command is equivalent to the SYSTem:COMMunicate:SERial:RECeive corresponding command.

SYSTem:COMMunicate:SERial:TRANsmit:SBITs

Description: The 6270A does not support different settings for transmit and receive on the serial port. This command is equivalent to the SYSTem:COMMunicate:SERial:RECeive corresponding command.

SYSTem:COMMunicate:SOCKet:ADDRess <ipaddress>

Description: Set the IP address of the Ethernet interface. Setting the address has no effect if DHCP is on.

Set Example: SYSTem:COMMunicate:SOCKet:ADDRess 192.168.0.102

Query Example: SYSTem:COMMunicate:SOCKet:ADDRess?

Response: 192.168.0.102

SYSTem:COMMunicate:SOCKet:DHCP <Boolean>

Description: Enables or disables use of DHCP on the Ethernet port.

Set Example: SYSTem:COMMunicate:SOCKet:DHCP ON

Query Example: SYSTem:COMMunicate:SOCKet:DHCP?

Response: 1

SYSTem:COMMunicate:SOCKet:GATeway <ipaddress>

Description: Set the gateway address for the Ethernet port.

Set Example: SYSTem:COMMunicate:SOCKet:GATeway 192.168.0.1

Query Example: SYSTem:COMMunicate:SOCKet:GATeway?

Response: 192.168.0.1

SYSTem:COMMunicate:SOCKet:INTerface <boolean>

Description: Set the Interface type for the Ethernet port. 1 or ON selects computer (no echo). 0 or OFF will select terminal (echo).

Set Example: SYSTem:COMMunicate:SOCKet:INTerface ON

Query Example: SYSTem:COMMunicate:SOCKet:INTerface?

Response: 1

SYSTem:COMMunicate:SOCKet:MAC ?

Description: Query the LAN MAC address

Set Example: Query Only

Query Example: SYST:CONF:SOCK:MAC?

Response: 00:80:40:01:ff:fb

SYSTem:COMMunicate:SOCKet:MASK <ipmask>

Description: Set the Ethernet ip mask.

Set Example: SYSTem:COMMunicate:SOCKet:MASK 255.255.255.0

Query Example: SYSTem:COMMunicate:SOCKet:MASK?

Response: 255.255.255.0

SYSTem:COMMunicate:SOCKet:NAME <name>

Description: Set the Ethernet interface host name.

Set Example: SYSTem:COMMunicate:SOCKet:NAME PRES1

Query Example: SYSTem:COMMunicate:SOCKet:NAME?

Response: PRES1

SYSTem:COMMunicate:SOCKet:PORT <n>

Description: Set the port number.

Set Example: SYSTem:COMMunicate:SOCKet:PORT 3490

Query Example: SYSTem:COMMunicate:SOCKet:PORT?

Response: 3490

SYSTem:COMMunicate:USB:EOL CRLF | CR | LF

Description: Set the end of line characters for the USB emulated serial port.

Set Example: SYSTem:COMMunicate:USB:EOL CRLF

Query Example: SYSTem:COMMunicate:USB:EOL?

Response: CRLF

SYSTem:COMMunicate:USB:INTERface <boolean>

Description: Set the Interface type for the serial port. 1 or ON selects computer (no echo). 0 or OFF will select terminal (echo).

Set Example: SYSTem:COMMunicate:USB:INTERface ON

Query Example: SYSTem:COMMunicate:USB:INTERface?

Response: 1

SYSTem:COMMunicate:USB:SERial <Boolean>

Description: Enables the USB port to emulate a serial interface. When disabled the USB port emulates a flash drive.

Set Example: SYSTEM:COMMUNICATE:USB:SERIAL ON

Query Example: SYSTEM:COMMUNICATE:USB:SERIAL?

Response: 1

SYSTem:DATE <year>,<month>,<day>

Description: Set the clock date. <year> is the present four-digit year. <month> is the present month number, from 1 to 12. <day> is the present day within the month, from 1 to 31. *RST does not affect the clock date

Set Example: SYST:DATE 2015,05,07

Query Example: SYST:DATE

Response: 2015,05,07

SYSTem:DEFault ALL

Description: Sets chassis configuration to factory default. Does not reset any module parameters.

Set Example: SYSTEM:DEFAULT ALL

Query Example: <none>

Response: <n/a>

SYSTem:ERRor ?

Description: Read and remove the first error in the error queue. The response is an error number followed by a brief description in quotes, with the two parts separated by a comma. The earliest error logged is returned and removed from the error queue. If the error queue is empty, the response is 0, "No Error". If the error queue contains at least one error, the Error Queue Summary Bit (bit 2) of the Status Byte Register will be set.

If the error queue was overfilled, the most recent error in the error queue will be replaced by the error -350, "Queue overflow". The error queue can hold up to 10 errors. An error is logged in the error queue if a received command cannot be executed for any reason. Errors are categorized as one of the following types: command error, execution error, device-specific error, or query error.

Command errors report syntax errors or unrecognized commands. An error of this type will cause the Command Error Bit (bit 5) of the Standard Event Status Register to be set.

Execution errors report failures to execute recognized commands. The form of the command is not acceptable, parameters are incorrect or invalid, or the command is not valid in the present state of the instrument or its settings. An error of this type will cause the Execution Error Bit (bit 4) of the Standard Event Register to be set.

Device-specific errors report problems indirectly caused by commands or that are due to abnormal operation of the instrument. An error of this type will cause the Device Dependent Error Bit (bit 3) of the Standard Event Status Register to be set.

Query errors report communication bus errors during transmission of a response to a query command. An error of this type will cause the Query Error Bit (bit 2) of the Standard Event Status Register to be set.

Error bits in the Standard Event Status Register affect the Event Summary Bit (bit 5) of the Status Byte Register if the corresponding bits in the Event Status Enable register are set. Possible error responses can be found in the Operators Manual.

No response is available for query, or a response was not transmitted before a new command was received. *CLS clears the error queue. *RST does not clear the error queue.

Set Example: Query Only

Query Example: SYST:ERR?

Response: 0, "No error"

SYSTem:KLOCk <boolean>

Description: Lock or unlock the front panel keys. <boolean> can be 0 (unlocked), OFF, 1 (locked), or ON. The default is 0. *RST unlocks the front panel keys.

Set Example: SYST:KLOC OFF

Query Example: SYST:KLOC?

Response: 0

SYSTem:LANGuage <name>

Description: Set Interface Protocol to Protocols available include SCPI (default), PACE6000, DPI515, DPI510, Ruska6000, CPC8000, CPC6000, CPC3000, PCS400, PPC4, PPC3, PPC2P, PPC2, PPC1.

Set Example: :SYSTem:LANGuage PPC3

Query Example: :SYSTem:LANGuage?

Response: PPC3

SYSTem:PRESet

Description: Stop all automated tests and return to Measure mode.

Set Example: SYSTem:PRESet

Query Example: Command only. No query.

Response: n/a

SYSTem:STACk OFF | MAIN | AUX1 | AUX2

Description: Sets the stacking state of an individual chassis. The state should be set before chassis are connected or after they have been separated.

Set Example: SYSTEM:STACK AUX1

Query Example: SYSTEM:STACK?

Response: AUX1

SYSTem:TIME <hour>, <minute>, <second>

Description: Set the clock time. <hour> is the present hour of the day, from 0 to 23. <minute> is the present minute, from 0 to 59. <second> is the present second, from 0 to 59. *RST does not affect the clock time.

Set Example: SYST:TIME 9,33,00

Query Example: SYST:TIME?

Response: 9,33,0

SYSTem:VERSion

Description: Query the SCPI version. The return value is '1999.0'

Set Example: Query Only

Query Example: SYST:VERS?

Response: 1999.0

TEST:PNEumatic

Description: Start Pneumatic Self-Test

Set Example: TEST:PNE

Query Example: TEST:PNE?

Response: 0

TEST:STOP

Description: Abort Pneumatic Self-Test

Set Example: TEST:STOP

Query Example: Command, no query version

Response: n/a

TEST:TUNE

Description: Start Controller tune. This command is not available on the 8270A.

Set Example: TEST:TUNE

Query Example: Command only. No query.

Response: n/a

TEST:TUNE:PRESet

Description: Reset the tuning of the PCM on the 8270A.

Set Example: TEST:TUNE:PRESET

Query Example: <none>

Response: <n/a>

UNIT:DEFine<n> <name>,<n>

Description: Define one of four user units. <n> is 1 to 4. Pressure in kPa is multiplied by <n> to give displayed pressure.

Set Example: UNIT:DEFine2 ksi,0.00068948

Query Example: UNIT:DEFine2?

Response: ksi,+6.89480000E-04

UNIT:LENGth{MM | IN}

Description: Set length units to mm or in.

Set Example: UNIT:LENGth mm

Query Example: UNIT:LENGth?

Response: mm

UNIT:TEMPerature CEL

Description: Set temperature units to Celsius. No other temperature units are supported.

Set Example: UNIT:TEMPerature CEL

Query Example: UNIT:TEMPerature?

Response: CEL

UNIT[:PRESsure] {KPA | BAR | PSI | KGF/CM2 | MMHG0C | CMHG0C | INHG0C | INHG60F | INH2O4C | CMH2O4C | INH2O20C | INH2O25C | FT | M | KNOT | KM/HR | MPA | PA | ATM | MBAR | HPA | MMH2O | INH2O60F | MTORR | TORR }

Description: Set the pressure unit. User-defined units may also be selected.

Set Example: UNIT:PRES BAR

Query Example: UNIT:PRES?

Response: BAR

Emulation Commands Sets

See the original equipment documentation for further information. Some commands may have limited functionality due to limitations of the 8270A.

Standby mode is not physically supported in these emulations as the 8270A does not have a test isolation valve.

The PMM in slot 5 is used as the primary sensor range for all emulations. Each description below has additional details about the relationship between PMM locations and emulation channel/range designations

If a PMM is to be used as a Barometer, it needs to be installed in Slot 1 and enabled on the front panel as an ATM reference.

Support for controllers that have a second controller channel/range is limited as the 8270A is a single physical controller and uses the PMM in slots 3 and 2 to emulate the second channel.

CPC8000, CPC6000, CPC3000, APC600

The PMM installed in Slot 5 is used for channel 'A' primary sensor.

The PMM installed in Slot 4 is used for channel 'A' secondary sensor.

The PMM installed in Slot 3 is used for channel 'B' primary sensor.

The PMM installed in Slot 2 is used for channel 'B' secondary sensor.

The PMM installed in Slot 1 is used for channel 'A' or 'B' tertiary sensor.

Turndowns are not available for any sensor.

Supported commands:

Command	Argument(s)	Function/Response	CPC8000	CPC6000	CPC3000	APC600
?		Returns data in the current output format.	X	X	X	X
Address	<address>	Sets the GPIB Address.	X	X	X	X
Address?		Returns the GPIB Address within 1 to 31.	X	X	X	X
A?		Returns the A channel pressure reading.		X	X	X
AR?		Returns the A channel rate in units/sec.		X	X	X
ARS?		Returns the A channel rate stable flag.		X	X	X
AS?		Returns the A channel stable flag.		X	X	X
Autozero		Re-zero all ranges that can measure the vented pressure.	X	X		X
Autozero?	<state>,<time>,0,0	Returns autozero	X	X		X

Command	Argument(s)	Function/Response	CPC8000	CPC6000	CPC3000	APC600
Autozeroabort		Aborts an executing autozero.	X	X		X
Baro?		Returns reading from barometric sensor.	X	X	X	X
Cerr		Clears the error queue.	X	X		X
Chan	<chan>	Sets the active channel 'A' or 'B' on the instrument.		X		X
Chan?		Returns which channel is active.		X		X
Control		Instrument placed in Control mode.	X	X	X	X
Control?		Gets current control mode state.	X	X	X	X
Error?		Returns a description of an error.	X	X	X	X
Errorno?		Returns CPC6000 error code and text (comma delimited).	X	X	X	X
Height	<inchs>	Sets the head pressure height in inches.	X	X		X
Height?		Returns the head pressure height in inches.	X	X		X
ID?		Returns the instrument identity.	X	X	X	X
Keylock	<state>	Sets the front panel lock status.	X	X	X	X
Keylock?		Returns the front panel lock status.	X	X	X	X

Command	Argument(s)	Function/Response	CPC8000	CPC6000	CPC3000	APC600
Listrange?		Returns the minimum and maximum ranges of the primary, secondary, tertiary and Barometer.	X	X	X	X
LowerLimit	<limit>	Sets the lower control limit for the active channel.	X	X	X	X
LowerLimit?		Returns the lower control limit for the active channel.	X	X	X	X
Measure		Instrument placed in Measure mode.	X	X	X	X
Measure?		Gets current measure mode state.	X	X	X	X
Mode	<state>	Sets the operation mode of the active channel. Note that Standby is the same as measure in the emulation.	X	X	X	X
Mode?		Returns the operation mode of the active channel.	X	X	X	X
Outform	<format>	Sets the output format.	X	X	X	X
Outform?		Returns the current output format.	X	X	X	X
Ptype	<mode>	Sets the instrument pressure reference type.	X	X	X	X
Ptype?		Returns "Absolute" or "Gauge" for the reference type.	X	X	X	X

Command	Argument(s)	Function/Response	CPC8000	CPC6000	CPC3000	APC600
RangeMax?		Returns the maximum range of the active transducer in the current units.	X	X	X	X
RangeMin?		Returns the minimum range of the active in the current units.	X	X	X	X
Rate?		Returns the rate reading of the instrument in current units/second.	X	X	X	X
Resolution	<res>	Sets the number of significant digits.	X	X	X	X
Resolution?		Returns the number of significant digits.	X	X	X	X
Sensor	<range>	Sets the active sensor range (Primary, Secondary or tertiary).	X	X	X	X
Sensor?		Returns the active sensor as above.	X	X	X	X
Setpt	<setpoint>	Sets the control setpoint for the active channel.	X	X	X	X
Setpt?		Returns the control setpoint of the active channel in current units.	X	X	X	X
Stable?		Returns YES if instrument is stable or NO.	X	X	X	X
Units	<unit>	Sets the instrument engineering units.	X	X	X	X

Command	Argument(s)	Function/Response	CPC8000	CPC6000	CPC3000	APC600
Units?		Returns the instrument units in a text string.	X	X	X	X
UpperLimit	<limit>	Sets the upper control limit for the active channel.	X	X	X	X
UpperLimit?		Returns the upper control limit for the active channel.	X	X	X	X
Vent		Instrument placed in Vent mode.	X	X	X	X
Vent?		Returns YES if active channel is in Vent mode, No if otherwise.	X	X	X	X
Zero	<ref>	Sets active sensor zero to <ref>	X	X	X	X
Zero?		Returns zero offset value for active sensor	X	X	X	X

DPI510

The PMM installed in Slot 5 is used for range 1 ("R1").

The PMM installed in Slot 4 is used for range 2 ("R2").

Secondary addressing, dialog mode or daisy chaining is not supported.

Interrupt packets and preset setpoints are not supported.

Supported commands:

Command	Function	Notes
C0	Go to MEASURE mode.	
C1	Go to CONTROL mode.	
D0	Sends current pressure in response (format N0 or N1).	
D2	Sends front panel pressure in response (format N0 or N1).	Same as D0 for emulation.
D1	Sends current set-point in response (format N0 or N1).	
Fxx	Function 00,10,01,11	Implemented as a dummy command. Performs no actual operation.
I0	Disable Interrupts	Implemented as a dummy command. Performs no actual operation.
I1 - I7	Interrupt on specific events.	Implemented as a dummy command. Performs no actual operation.
J0 to J2	Set Pre-programmed rate.	All 3 rates are fixed at Current sensor FS/min.
M	Unlock keyboard.	
N0 to N4	Set response format.	
O1	Zero	
P<value>	Set pressure Set-point.	
R0	Unlock keyboard.	
R1 to R2	Lock keyboard.	
S0 to S3	Set pre-programmed units.	S0,S1 and S2 select bar, psi and kPa. S3 selects unit set by the Uxx command.
T0	Turn off Tare mode.	
T1	Turn on tare mode to value set to B (B must be set first).	
U1 to U23	Set S4 units (if S4 is selected this will change current units immediately).	Must set S3 for U command to take effect. Selected unit will not affect the front panel unit indication.
V<value>	Set slew rate.	
W<value>	Set In Limit wait time.	Implemented as a dummy command. Performs no actual operation.
/0 to /11	Set set-point as fraction of P value.	Implemented as a dummy command. Performs no actual operation.
*0 to *11	Set pre-programmed set-point.	Implemented as a dummy command. Performs no actual operation.
@0	Disable error reporting.	
@1	Enable error reporting.	

PCS400

The PMM installed in Slot 5 is used for range 1.

The PMM installed in Slot 4 is used for range 2.

Supported commands:

Command	Function	Notes
_PCS4 CTRL <Value>	Sets control value. Will take effect immediately if instrument is in control mode.	
_PCS4 CTRL?	Returns the current control point in current engineering units.	
_PCS4 CTRLMAX <value>	Sets maximum control value.	
_PCS4 CTRLMAX?	Returns current maximum control pressure.	
_PCS4 CTRLMIN <value>	Sets minimum control value.	
_PCS4 CTRLMIN?	Returns current minimum control pressure.	
_PCS4 ERR?	Returns the error number and description.	
_PCS4 FUNC CTRL <value <unitno> >	Instrument placed in control mode at the given target and unit.	
_PCS4 FUNC F1	Toggles between absolute and gauge modes if an internal barometric sensor is installed.	
_PCS4 FUNC MEAS <unitno>	Instrument placed in measure mode. Optionally change pressure units.	
_PCS4 FUNC STBY <unitno>	Instrument placed in standby mode. This is the same as measure mode in this emulation. Optionally change pressure units.	
_PCS4 FUNC VENT <unitno>	Instrument vent in <unitno> units. Optionally change pressure units.	
_PCS4 ID?	Returns "MENSOR,PCS 400,<serial#>,2.74"	
_PCS4 READING?	Returns active sensor pressure reading, with preceding 'E' if there is an error.	
_PCS4 STAT?	Returns mode and stability status, comma delimited.	Standby mode is not supported and is treated as "measure" mode.
_PCS4 UNIT <Unitno>	Sets the instrument to specified engineering unit number. Refer to the PCS400 manual for available units. Selected unit will not affect the front panel unit indication.	
_PCS4 UNIT?	Returns the current engineering unit number, unit text and type of transducer (A, G, D).	
_PCS4 XDUCER?	Returns the number of the currently active transducer or sets.	

PPC3, PPC4, PPCK, PPCK+ and PPCH-G

The PMM installed in Slot 5 is used for the PPC primary/IH sensor and the PMM installed in Slot 4 is used for the PPC secondary/IL sensor.

PPC1 and PPC2+ emulations are also supported, and are like the PPCK emulation.

Supported commands:

Command	Function	PPC4	PPC3	PPCK+	PPCK	PPCH-G
*CLS	Clear all status registers and the error queue.	X	X	X		X
*IDN?	Replies "FLUKE,PPC4,systemSn, HiSensorSn, LoSensorSn,Ver1.2.5.1,1.00a,1.00a" Example: "FLUKE,PPC4,123,100951,63041,Ver1.2.5.1,1.00a,1.00a"	X				
*IDN?	Replies "DH INSTRUMENTS INC, PPC3, systemSn, HiSensorSn, LoSensorSn,Ver1.04a-efgc" Example: "DH INSTRUMENTS INC, PPC3,123,100951,63041, Ver1.04a-efgc "		X			
*IDN?	Replies "DH INSTRUMENTS INC, PPCK+, systemSn-HiSensorSn, Ver1.02g-efgd " Example: "DH INSTRUMENTS INC, PPCK+, 123-100951, Ver1.02g-efgd"			X		
*IDN?	Replies "DH INSTRUMENTS INC, PPCH-G, systemSn, HiSensorSn, LoSensorSn Ver1.02g-efgd " Example: "DH INSTRUMENTS INC, PPCH-G, 123, 100951, 63041, Ver1.02g-efgd"					X
*RST	Reset operating settings to default states.	X	X	X		X
*STB	Read the status byte register	X	X	X		X
ARANGE	Set or read the measurement range and unit	X	X	X		X
AUTOZERO	Enable / disable autozero feature.	X	X	X	X	X
DRV	Set or read extern valve port status bitfield for all 8 drivers.	X	X	X	X	X
DRVn	Set or read extern valve port status for the specific driver (1 to 8).	X	X	X	X	X
ERR	Get last error(s).	X	X	X	X	X
HEAD	Set or read head height.	X	X	X	X	X
HS	Set or read hold limit pressure.	X	X	X	X	X
HS%	Set or read hold limit in %FS.	X	X	X	X	X

Command	Function	PPC4	PPC3	PPCK+	PPCK	PPCH-G
L2	Set GPIB command mode to “standard”.	X	X	X		X
L3	Set GPIB command mode to “enhanced”.	X	X	X		X
LOCAL	Go to local mode.	X	X	X	X	X
LL	Set or read the lower limit.	X	X	X	X	X
MODE	Set or read control mode.	X	X	X	X	X
MMODE	Set or read measurement reference.	X	X	X		X
MSGFMT	Set or get GPIB488 command mode. '0' for standard mode; '1' for enhanced mode.	X	X	X		X
PR	Get control ready status, pressure.	X	X	X	X	X
PRR	Get control ready status and pressure, rate, barometer, status and uncertainty when next measurement is ready.	X	X	X	X	X
PS	Set control target and start controlling.	X	X	X	X	X
QPRR	Get control ready status and pressure, rate, barometer, status and uncertainty of previous measurement.	X	X	X	X	X
RANGE	Set or get current active sensor range FS.	X	X	X	X	X
RANGEHI	Get the IH sensor range and limits (PMM in slot #5).	X	X	X	X	X
RANGELO	Get the IL sensor range and limits (PMM in slot #4).	X	X	X		X
RES	Set or get resolution in %FS.	X	X	X	X	X
REMOTE	Local lockout	X	X	X	X	X
RPT	Discover external sensors (dummy command).	X	X	X		X
RPT1	Get the IH sensor range (PMM in slot #5).	X	X	X		X
RPT2	Get the IL sensor range (PMM in slot #4).	X	X	X		X
RPT3	Get the X1H sensor range (PMM in slot #3).	X	X	X		X
RPT4	Get the X1L sensor range (PMM in slot #2).	X	X	X		X
RS	Set fixed rate and enable control mode to execute rate request.	X	X	X	X	X
SN	Get system serial number.	X	X	X	X	X
SR	Get control ready status.	X	X	X	X	X
SS	Set or get stability limit pressure.	X	X	X	X	X
SS%	Set or get stability limit in %FS.	X	X	X	X	X

Command	Function	PPC4	PPC3	PPCK+	PPCK	PPCH-G
STAT	Get Control status.	X	X	X	X	X
TP	Get current control set-point.	X	X	X	X	X
UL	Set or get current maximum pressure limit.	X	X	X	X	X
UNIT	Set or get current pressure unit; Defaults to "kPa" on power up.	X	X	X	X	X
VAC	Set or get vacuum reference port status.	X	X	X	X	X
VENT	Set or get vent status.	X	X	X	X	X
VER	Reply "FLUKE PPC4 us HiRange/LoRange Ver1.2.5.1" Example: "FLUKE PPC4 us A700K/G200K Ver1.2.5.1"	X				
VER	Reply "DH INSTRUMENTS, INC PPC3 us HiRange/LoRange Ver1.04a" Example: "DH INSTRUMENTS, INC PPC3 us A700K/G100K Ver1.04a"		X			
VER	Reply "DH INSTRUMENTS, INC PPCK+ Ver1.00m" Example: "DH INSTRUMENTS, INC PPCK+ Ver1.00m"			X		
VER	Reply "DH Instruments PPCK-Range Ver3.02c " Example: "DH Instruments PPCK-A0300 Ver3.02c "				X	
VER	Reply "DH INSTRUMENTS, INC PPCH-G us HiRange/LoRange Ver1.02g " Example: " DH INSTRUMENTS, INC PPCH-G us A70M/A10M Ver1.02g "					X

Pace6000

The PMM installed in Slot #5 is used for controller channel 1, while the PMM installed in Slot 4 is used for controller channel 2.

Support for channel 2 is limited as the 8270A is a single physical controller, and uses the PMM in slot 4 to emulate the second channel.

Supported commands:

Command	Function	Notes
*CLS	Clear all status registers and the error queue.	
*ESE	Set the Product Standard Event Status Enable register.	
*ESE?	Query the Standard Event Status Enable register.	
*ESR?	Query and clear the Product Standard Event Status register.	
*IDN?	Reply " *IDN GE Druck,PACE6000,serial#, DK0388 v02.01.01"	
*SRE	Set the Product Service Request Enable register.	
*STB?	Query the Product Status Byte Register.	
:GTL	Takes the instrument out of local lockout.	
:LLO	Local Lockout	
:LOC	Puts the instrument into local mode.	
:REM	Puts the instrument into remote.	
:CAL[:PRES]:ZERO:AUTO <state>	Starts or aborts (<i>value</i> = 1 or 0) a zero process. Gets zero status 1 or 0 (zeroing or not zeroing).	
:CAL[:PRES]:ZERO:AUTO:VAL <ref>	Zeros the absolute sensor to <ref>.	
:CAL[:PRES]:ZERO:TIME:STAT <state>	Enable or disable the automatic timed gauge zero.	
:INST:CAT	Gets a list of reference sensor range names for the controller.	
:INST:CAT:ALL	Gets a list of sensor range names for the controller.	
:INST:CONT:SENS?	Gets the range of the selected sensor.	
:INST:CONT:SENS:FULL?	Gets the full-scale value of the selected sensor.	
:INST:[LIM]	Gets the selected sensor limits.	
:INST:SENS?	Gets the range of the selected sensor.	
:INST:SENS:FULL?	Gets the full-scale value of the selected sensor.	
:INST:SN?	Gets the instrument serial number.	
:OUTP:ISOL[:STAT] <state>	Gets or sets test isolation valve status.	Inactive command as the 8270A does not have a test isolation valve.
:OUTP:LOG[:LEV] <state>	Gets or sets the external driver state.	

Command	Function	Notes
:OUTP[:PRES][STAT] <state>	Sets or gets the instrument mode (control or measure).	
:SENS[:PRES]?	Reads the sensor which has been selected by the RANGE command.	
:SENS[:PRES]:INL?	Gets the pressure and 0/1 if out/in ready limits.	
:SENS[:PRES]:SLEW?	Gets the slew rate of the input pressure.	
:SENS[:PRES]:BAR?	Gets the barometric pressure value.	
:SENS[:PRES]:RANG <range>	Gets or sets range name to use.	
:SENS[:PRES]:RES <res>	Gets or sets resolution from 4 to 7.	
:SENS[:PRES]:CORR:HEAD <gas>, <height>	Gets or sets head medium (AIR or NITrogen) and height in meters.	
:SENS[:PRES]:CORR:HEAD:STAT <state>	Gets or sets head state 0/1 for disabled or enabled.	Replies '0' if head height is '0' else '1' <state> arg is ignored
:SOUR[:PRES]:COMP	Gets the supply or vacuum pressures.	
:SOUR[:PRES]:INL <percent>	Gets or sets the in limit (ready) setting as a %FS.	
:SOUR[:PRES]:[LEV]:[IMM]:[AMPL] <setpoint>	Gets or sets the setpoint.	
:SOUR[:PRES]:[LEV]:[IMM]:[AMPL]: VENT <state>	Starts or aborts (state = 1 or 0) a vent process Gets vent status 2 if vent complete; 1 if venting; 0 if not vented or venting.	
:SOUR[:PRES]:RANG <rangenam>	Gets or sets active range. Example: SOUR:RANG "2bara" or SOUR:RANGE? "2bara"	Same as SENS:RANG command
:SOUR[:PRES]:SLEW <rate>	Gets or set max rate used (units/sec) when value rate is selected.	
:STAT:OPER:COND?	Gets the condition of the operation register.	Uses the 8270A register
:STAT:OPER:ENAB <register>	Gets or sets the event enable mask of the of the operation register.	Uses the 8270A register
:STAT:OPER:EVEN?	Gets the operation event register.	Uses the 8270A register
:STAT:QUES:COND?	Gets the condition of the questionable status register.	Uses the 8270A register
:STAT:QUES:ENAB?	Gets or sets the event enable mask of the of the questionable status register.	Uses the 8270A register
:STAT:QUES:[EVEN]?	Gets the questionable status event register.	Uses the 8270A register
:SYST:ERR?	Gets next error from the error queue.	
:SYST:DATE <d,m,y>	Gets or sets the date settings in year, month, and day.	

Command	Function	Notes
:SYST:TIME <h,m,s>	Gets or sets the time in hours, minutes, seconds.	
:SYST:COMM:SER:BAUD <baud>	Gets or sets RS232 interface baud rate.	
:SYST:COMM:SER:TYPE:PAR <parity>	Gets or sets RS232 interface parity (ODD EVEN NONE).	
:SYST:COMM:GPIB:SELF:ADDR <addr>	Gets or sets GPIB address (1-31).	
:SYST:VERS?	Get the SCPI version number.	
:UNIT[:PRES] <unit>	Get or set the pressure unit.	Does not affect the front panel units indication.
:UNIT[:PRES]:DEF <coef>,<text>	Get or set the user defined units.	

DPI515

The PMM installed in Slot 5 is used for controller range 1, while the PMM installed in Slot 4 is used for controller range 2.

Support for range 2 is limited as the 8270A is a single physical controller, and uses the PMM in slot 4 to emulate the second range.

Supported commands:

Command	Function	Notes
*CLS	Clear all status registers and the error queue.	
*ESE	Set the Product Standard Event Status Enable register.	
*ESE?	Query the Standard Event Status Enable register.	
*ESR?	Query and clear the Product Standard Event Status register.	
*IDN?	Reply " *IDN GE Druck,PACE6000,serial#, DK0388 v02.01.01"	
*SRE	Set the Product Service Request Enable register.	
*STB?	Query the Product Status Byte Register.	
:GTL	Takes the instrument out of local lockout.	
:LLO	Local Lockout	

Command	Function	Notes
:LOC	Puts the instrument into local mode.	
:REM	Puts the instrument into remote.	
:CAL[:PRES]:ZERO:AUTO <state>	Starts or aborts (<i>value</i> = 1 or 0) a zero process. Gets zero status 1 or 0 (zeroing or not zeroing).	
:CAL[:PRES]:ZERO:AUTO:VAL <ref>	Zeros the absolute sensor to <ref>.	
:CAL[:PRES]:ZERO:TIME:STAT <state>	Enable or disable the automatic timed gauge zero.	
:INST:CAT	Gets a list of reference sensor range names for the controller.	
:INST:[LIM]	Gets the selected sensor limits.	
:INST:SN?	Gets the instrument serial number.	
:OUTP:ISOL[:STAT] <state>	Gets or sets test isolation valve status.	Inactive command as the 8270A does not have a test isolation valve.
:OUTP:LOG[:LEV] <state>	Gets or sets the external driver state.	
:OUTP[:PRES][STAT] <state>	Sets or gets the instrument mode (control or measure).	
:SENS[:PRES]?	Reads the sensor which has been selected by the RANGE command.	
:SENS[:PRES]:BAR?	Gets the barometric pressure value.	
:SENS[:PRES]:RANG <range>	Gets or sets range name to use.	
:SENS[:PRES]:CORR:HEAD <gas>, <height>	Gets or sets head medium (AIR or NITrogen) and height in centimeters.	
:SENS[:PRES]:CORR:HEAD:STAT <state>	Gets or sets head state 0/1 for disabled or enabled.	Replies '0' if head height is '0' else '1' <state> arg is ignored.

Command	Function	Notes
:SOUR[:PRES]:INL <percent>	Gets or sets the in limit (ready) setting as a %FS.	
:SOUR[:PRES][:LEV][:IMM][:AMPL] <setpoint>	Gets or sets the setpoint.	
:SOUR[:PRES][:LEV][:IMM][:AMPL]: VENT <state>	Starts or aborts (state = 1 or 0) a vent process. Gets vent status 2 if vent complete; 1 if venting; 0 if not vented or venting.	
:SOUR[:PRES]:RANG <rangenam>	Gets or sets active range. Example: SOUR:RANG "2bara" or SOUR:RANGE? "2bara"	Same as SENS:RANG command
:SOUR[:PRES]:SLEW <rate>	Gets or set max rate used (units/sec) when value rate is selected.	Uses the 8270A register
:STAT:OPER:COND?	Gets the condition of the operation register.	Uses the 8270A register
:STAT:OPER:ENAB <register>	Gets or sets the event enable mask of the of the operation register.	Uses the 8270A register
:STAT:OPER:EVEN?	Gets the operation event register.	Uses the 8270A register
:STAT:QUES:COND?	Gets the condition of the questionable status register.	Uses the 8270A register
:STAT:QUES:ENAB?	Gets or sets the event enable mask of the of the questionable status register.	Uses the 8270A register
:STAT:QUES[:EVEN]?	Gets the questionable status event register.	Uses the 8270A register
:SYST:ERR?	Gets next error from the error queue.	
:SYST:DATE <d,m,y>	Gets or sets the date settings in year, month, and day.	
:SYST:TIME <h,m,s>	Gets or sets the time in hours, minutes, seconds.	
:SYST:COMM:SER:BAUD <baud>	Gets or sets RS232 interface baud rate.	
:SYST:COMM:SER:TYPE:PAR <parity>	Gets or sets RS232 interface parity (ODD EVEN NONE).	
:SYST:COMM:GPIB:SELF:ADDR <addr>	Gets or sets GPIB address (1-31).	
:SYST:VERS?	Get the SCPI version number.	
:UNIT[:PRES] <unit>	Get or set the pressure unit.	Does not affect the front panel units indication
:UNIT[:PRES]:DEF <coef>, <text>	Get or set the user defined units.	

