# List of Messages

SCPI command: Short form commands

Affected commands: Commands that are affected by a result of the *RST and *RCL commands are indicated as Yes.

R and W denote query command (R) and set command (W), respectively.

†: 1, 2, and 3 indicate SCPI standard command, command in review, and KIKUSUI original command, respectively.

## OUTPut subsystem

| SCPI Command | | Setting | | Default | Response | Affected Command | | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|---|---|
| Program Header | Parameter | | Unit | | | *RST | *RCL | | | |
| OUTP | | | | | | | | | | |
| :COUP | char | ACIDCIACDCI EACIEDC | | AC | char | Yes | Yes | Output mode | R/W | 3 |
| [:STAT] | bool | | | 0 | NR1 | | | Turn the output on/off | R/W | 1 |
| :PROT:CLE | | | | | | | | Clear the alarm/error | W | 1 |

## FETCh | MEASure subsystem

| SCPI Command Program Header | Parameter | Setting Unit | Default | Response | Affected Command | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|
| FETC[:SCAL] | | | | | | | | |
| :CURR | | | | | | | | |
| :AC | | A | | NR3 | | Measured value of AC current output[*1] | R | 1 |
| :DC | | A | | NR3 | | Measured value of DC current output[*1] | R | 1 |
| :AMPL:MAX | | A | | NR3 | | Peak measured value of current output[*1] | R | 3 |
| :HOLD | | A | | NR3 | | Peak hold value of AC current output[*1] | R | 3 |
| :CRES | | | | NR3 | | Measured value of current crest factor[*1] | R | 3 |
| :FREQ | | Hz | | NR3 | | Measured value of AC output frequency[*1] | R | 1 |
| :POW | | | | | | | | |
| :DC | | W | | NR3 | | Measured value of DC power[*1] | R | 1 |
| :AC | | W | | NR3 | | Measured value of AC power (active power)[*1] | R | 1 |
| :APP | | VA | | NR3 | | Measured value of AC power (apparent power)[*1] | R | 3 |
| :REAC | | VAR | | NR3 | | Measured value of AC power (reactive power)[*1] | R | 3 |
| :PFAC | | | | NR3 | | Power factor of AC power[*1] | R | 3 |
| :VOLT | | | | | | | | |
| :AC | | V | | NR3 | | Measured value of AC voltage output[*1] | R | 1 |
| :DC | | V | | NR3 | | Measured value of DC voltage output[*1] | R | 1 |
| MEAS[:SCAL] | | | | | | | | |
| :CURR | | | | | | | | |
| :AC | | A | | NR3 | | Measured value of AC current output[*2] | R | 1 |
| :DC | | A | | NR3 | | Measured value of DC current output[*2] | R | 1 |
| :AMPL:MAX | | A | | NR3 | | Peak measured value of current output[*2] | R | 3 |
| :HOLD | | A | | NR3 | | Peak hold value of AC current output[*2] | R | 3 |
| :CRES | | | | NR3 | | Measured value of current crest factor[*2] | R | 3 |
| :FREQ | | Hz | | NR3 | | Measured value of AC output frequency[*2] | R | 1 |
| :POW | | | | | | | | |
| :DC | | W | | NR3 | | Measured value of DC power[*2] | R | 1 |
| :AC | | W | | NR3 | | Measured value of AC power (active power)[*2] | R | 1 |
| :APP | | VA | | NR3 | | Measured value of AC power (apparent power)[*2] | R | 3 |
| :REAC | | VAR | | NR3 | | Measured value of AC power (reactive power)[*2] | R | 3 |
| :PFAC | | | | NR3 | | Power factor of AC power[*2] | R | 3 |
| :VOLT | | | | | | | | |
| :AC | | V | | NR3 | | Measured value of AC voltage output[*2] | R | 1 |
| :DC | | V | | NR3 | | Measured value of DC voltage output[*2] | R | 1 |

*1. Queries the measured data without starting the measurement operation.
*2. Queries the measured data after starting a new measurement operation.

## SENSe subsystem

| SCPI Command Program Header | Parameter | Setting | Unit | Default | Response | Affected Command *RST | *RCL | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|---|---|
| SENS | | | | | | | | | | |
| :AVER[:STAT] | bool | | | 0 | NR1 | | | Averaging period of the measured value | R/W | 3 |
| :HOLD | char | SHOR \| LONG | | SHOR | char | | | Hold time of peak current | R/W | 3 |
| :CURR:PEAK:CLE | | | | | | | | Clears the peak hold | W | 3 |

## SOURce subsystem

| SCPI Command | | Setting | | Default | Response | Affected Command | | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|---|---|
| Program Header | Parameter | | Unit | | | *RST | *RCL | | | |
| [SOUR:] | | | | | | | | | | |
| CURR | | | | | | | | | | |
| [LEV][:IMM][:AMP] | numeric | PCR500M: 0.1 to 5.25 PCR1000M:0.2 to 10.5 PCR2000M:0.4 to 21.0 | A | 5.25 10.5 21.0 | NR3 | Yes | Yes | AC current limit | R/W | 1 |
| :OFFS[:IMM] | numeric | PCR500M: 0.1 to 4.2 PCR1000M:0.2 to 8.4 PCR1000M:0.4 to 16.8 | A | 4.2 8.4 16.8 | NR3 | Yes | Yes | DC current limit | R/W | 1 |
| PROT:STAT | bool | | | 1 | NR1 | Yes | Yes | Current limit operation | R/W | 1 |
| FREQ | | | | | | | | | | |
| [:CW] [:IMM] | numeric | 40 to 500 | Hz | 60 | NR3 | Yes | Yes | AC output frequency | R/W | 1 |
| :LIM | | | | | | | | | | |
| [:UPP] | numeric | 40 to 500 | Hz | 500 | NR3 | Yes | Yes | Frequency upper limit | R/W | 3 |
| :LOW | numeric | 40 to 500 | Hz | 40 | NR3 | Yes | Yes | Frequency lower limit | R/W | 3 |
| :MODE | char | FIX I STEP | | FIX | char | Yes | Yes | Trigger function control of the frequency setting | R/W | 1 |
| :TRIG | numeric | 40 to 500 | Hz | 50 | NR3 | Yes | Yes | Target value to which the frequency is to change using a trigger | R/W | 1 |
| VOLT | | | | | | | | | | |
| [:LEV] | | | | | | | | | | |
| [:IMM][:AMPL] | numeric | AC mode :[*1] AC+DC mode :[*2] | V | 0 | NR3 | Yes | Yes | AC voltage | R/W | 1 |
| :LIM | | | | | | | | | | |
| [:UPP] | numeric | 0 to 275.0 | V | 275.0 | NR3 | Yes | Yes | Upper limit of AC voltage | R/W | 3 |
| :LOW | numeric | 0 to 275.0 | V | 0 | NR3 | Yes | Yes | Lower limit of AC voltage | R/W | 3 |
| MODE | char | FIX I STEP | | FIX | char | Yes | Yes | Trigger function control of the AC voltage setting | R/W | 1 |
| :TRIG[:AMPL] | numeric | AC mode :[*1] AC+DC mode: [*2] | V | 0 | NR3 | Yes | Yes | Target value to which the AC voltage is to change using a trigger | R/W | 1 |
| :OFFS: | | | | | | | | | | |
| [:IMM] | numeric | DC mode :[*3] AC+DC mode :[*2] | V | 0 | NR3 | Yes | Yes | DC voltage | R/W | 1 |
| :LIM | | | | | | | | | | |
| [:UPP] | numeric | -388.0 to 388.0 | V | 388.0 | NR3 | Yes | Yes | Upper limit of DC voltage | R/W | 3 |
| :LOW | numeric | -388.0 to 388.0 | V | 0 | NR3 | Yes | Yes | Lower limit of DC voltage | R/W | 3 |
| :MODE | char | FIX I STEP | | FIX | char | Yes | Yes | Trigger function control of the DC voltage setting | R/W | 1 |
| :TRIG | numeric | DC mode :[*3] AC+DC mode :[*2] | V | 0 | NR3 | Yes | Yes | Target value to which the DC voltage is to change using a trigger | R/W | 1 |
| :RANG | | | | | | | | | | |
| [:UPP] | numeric | 135I270 | | 135 | NR3 | Yes | Yes | Voltage range | R/W | 1 |
| :AUTO | bool | | | 0 | NR1 | Yes | Yes | AUTO function of the voltage range | R/W | 1 |

*1.   135V range : 0 to 137.5, 270V range : 0 to 275.0.

*2. Can be specified only when the AC and DC voltage settings are within the voltage limit range and the peak value of the AC+DC waveform is within the range of -388 V to 388 V.
*3. 135V range : -194.0 to 194, 270V range : -388.0 to 388.0

## STATus subsystem

| SCPI Command | | Setting | Response | Description | R/W | 注 |
|---|---|---|---|---|---|---|
| Program Header | Parameter | | | | | |
| STAT | | | | | | |
| :OPER | | | | | | |
| [:EVEN] | | | NR1 | Queries the event[*1] | R | 1 |
| :COND | | | NR1 | Queries the condition of the register[*1] | R | 1 |
| :ENAB | NR1 | 0 to 32767 | NR1 | Enable register[*1] | R/W | 1 |
| :PTR | NR1 | 0 to 32767 | NR1 | Positive transition[*1] | R/W | 1 |
| :NTR | NR1 | 0 to 32767 | NR1 | Negative transition[*1] | R/W | 1 |
| :PRES | | | | Constructing status data | W | 1 |
| :QUES | | | | | | |
| [:EVEN] | | | NR1 | Queries the event[*2] | R | 1 |
| :COND | | | NR1 | Queries the condition of the register[*2] | R | 1 |
| :ENAB | NR1 | 0 to 32767 | NR1 | Enable register[*2] | R/W | 1 |
| :PTR | NR1 | 0 to 32767 | NR1 | Positive transition[*2] | R/W | 1 |
| :NTR | NR1 | 0 to 32767 | NR1 | Negative transition[*2] | R/W | 1 |

*1. OPERation status register
*2. QUEStionable statis regoster

## SYSTem subsystem

| SCPI Command | | Setting | | Default | Response | Affected Command | | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|---|---|
| Program Header | Parameter | | Unit | | | *RST | *RCL | | | |
| SYST | | | | | | | | | | |
| :CONF | | | | | | | | | | |
| :BACK | bool | | | 1 | NR1 | | | Automatically saves the panel settings and configuration settings | R/W | 3 |
| :TRAC | bool | | | 0 | NR1 | | | Communication error trace function | R/W | 3 |
| :ERR[:NEXT]? | | | | | string | | | Reads the error information | R | 1 |
| :KLOC | bool | | | 0 | NR1 | | | Locks the panel operation | R/W | 1 |
| :LOC | | | | | NR1 | | | Sets to local | W | 2 |
| :OPT? | | | | | char | | | Queries the optional board. | R | 3 |
| :REM | | | | | | | | Sets the PCR-M control to remote. Locks panels keys except the local key | W | 2 |
| :RWL | | | | | | | | Sets the PCR-M control to remote. Locks the panel operation. | W | 2 |
| :VERS? | | | | | | | | Version of the SCPI specifications to which the PCR-M conforms | R | 1 |

## TRIGger subsystem

| SCPI Command | | Setting | | Default | Response | Affected Command | | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|---|---|
| Program Header | Parameter | | Unit | | | *RST | *RCL | | | |
| ABOR | | | | | | | | Aborts the sequence 1 and 3 operations | W | 1 |
| INIT | | | | | | | | | | |
| :CONT | | | | | | | | | | |
| :NAME | char | TRAN l ACQ | | | char | Yes | Yes | Sequence 1 and 3: Sequence operation auto continue mode | R/W | 1 |
| | bool | | | 0 | NR1 | | | | | |
| :SEQ1 | bool | | | 0 | NR1 | Yes | Yes | Sequence 1: Sequence operation auto continue mode | R/W | 1 |
| :SEQ3 | bool | | | 0 | NR1 | Yes | Yes | Sequence 3: Sequence operation auto continue mode | R/W | 1 |
| [:IMM] | | | | | | | | | | |
| :NAME | char | TRAN l ACQ | | | char | | | Sequence 1 and 3: Start the trigger function | W | 1 |
| :SEQ1 | | | | | | | | Sequence 1: Start the trigger function | W | 1 |
| :SEQ3 | | | | | | | | Sequence 3: Start the trigger function | W | 1 |
| TRIG[SEQ[1]] l TRIG[:TRAN] | | | | | | | | | | |
| [:IMM] | | | | | | | | Sequence 1: Software trigger | W | 1 |
| :SOUR | char | IMM l BUS | | BUS | char | Yes | Yes | Sequence 1: Trigger source | R/W | 1 |
| TRIG:SEQ2 l TRIG:SYNC | | | | | | | | | | |
| :SOUR | char | IMM l PHAS | | IMM | char | Yes | Yes | Sequence 2: OUTPUT on phase control | R/W | 1 |
| :PHAS[:ON] | numeric | 0 to 359 | DEG | 0 | NR3 | Yes | Yes | Sequence 2: Phase angle | R/W | 1 |
| TRIG:SEQ3 l TRIG:ACQ | | | | | | | | | | |
| [:IMM] | | | | | | | | Sequence 3: Software trigger | W | 1 |
| :SOUR | char | IMM l BUS | | IMM | char | Yes | Yes | Sequence 3: Trigger source | R/W | 1 |

## Other commands

| SCPI Command | | Setting | | Default | Response | Affected Command | | Description | R/W | † |
|---|---|---|---|---|---|---|---|---|---|---|
| Program Header | Parameter | | Unit | | | *RST | *RCL | | | |
| DISP:AMM | string | "RMS" l "AVG" l "PEAK" l "WATT" | | "RMS" | string | | | Sets the measured value display | R/W | 3 |

IEEE488.2 common commands

| IEEE488.2 common commands | Parameter | Description | R/W |
|---|---|---|---|
| *CLS | | Clears the status data structures. | W |
| *ESE | NR1 | Sets the event status enable register bits. | R/W |
| *ESR? | | Queries the event status register. | R |
| *IDN? | | Queries the identification string (manufacturer information). | R |
| *OPC | | Causes the device to generate the operation complete message in the event status register when all pending selected device operations have been finished. | R/W |
| *OPT? | | Queries the optional interface boards that are installed in the PCR-M. | R |
| *PSC | 0 I 1 | Sets whether to clear the event status enable register and the service request enable register at power-on. | R/W |
| *RCL | 1 to 10 | Recalls the contents saved to the memory. | W |
| *RST | | Performs a device reset. Configures the PCR-M to a known condition independent from the usage history of the device. | W |
| *SAV | 1 to 10 | Saves the current settings to the memory. | W |
| *SRE | NR1 | Sets the service request enable register bits. | R/W |
| *STB? | | Reads the status byte and master summary status bits. | R |
| *TRG | | Trigger command | W |
| *TST? | | Executes the self-test | R |
| *WAI | | Prevents the device from executing subsequent commands or queries until the No Operation Pending flag becomes true. | W |