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## List of Messages

SCPI command: Command name in the short form.

\*RST: "Yes" for commands that are affected by \*RST.

R/W: "R" for query commands and "W" for set commands.

M/LE: "M" for PCR-M commands and "LE" for PCR-LE/PCR-LE2 commands.

## SOURce subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
[SOUR:]						
CURR[:LEV][:IMM][:AMPL]	numeric	NR3	Yes	AC current upper limit	R/W	M/LE
CURR:OFFS[:IMM]	numeric	NR3	Yes	DC current upper limit	R/W	M/LE
CURR:PEAK[:UPP][:IMM]	numeric	NR3	Yes	Sets the peak limit of the positive electric potential	R/W	LE
CURR:PEAK:LOW[:IMM]	numeric	NR3	Yes	Sets the peak limit of the negative electric potential	R/W	LE
CURR:PROT:OCP2:TIME	numeric	NR3	Yes	Sets the time that must elapse after the internal semiconductor protection is activated before an alarm is generated	R/W	LE
CURR:PROT:STATe	bool	NR1	Yes	Action that is performed when the current limit is exceeded	R/W	M/LE
CURR:PROT:TRIP:TIME	numeric	NR3	Yes	Time until the protection function trips when the current limit is exceeded	R/W	LE
FREQ:CC IMM]	numeric	NR3	Yes	Frequency	R/W	M/LE
FREQ:LIM[:UPP]	numeric	NR3	Yes	Frequency upper limit	R/W	M/LE
FREQ:LIM:LOW	numeric	NR3	Yes	Frequency lower limit	R/W	M/LE
FREQ:MODE	FIX STEP	char	Yes	Trigger function control of the frequency setting	R/W	M/LE
FREQ:SYNC[:STAT]	bool	NR1	Yes	Turns the synchronization function on and off	R/W	LE
FREQ:SYNC:PHASE:DEL	numeric	NR3	Yes	Synchronization delay phase angle	R/W	LE
FREQ:TRIG	numeric	NR3	Yes	Frequency that will be set when a trigger is received	R/W	M/LE
FUNC:SOUR	INT EXT SUM	char	Yes	Sets signal source	R/W	LE
VOLT[:LEV][:IMM][:AMPL]	numeric	NR3	Yes	AC voltage	R/W	M/LE
VOLT:EXT:SOUR	NONE VOLT	char	Yes	Sets the signal source	R/W	LE
VOLT:LIM[:UPP]	numeric	NR3	Yes	AC voltage upper limit	R/W	M/LE
VOLT:LINE	numeric	NR3	Yes	AC Line voltage	R/W	LE <sup>1</sup>
VOLT[:LEV]:LIM:LOW	numeric	NR3	Yes	AC voltage lower limit	R/W	M/LE
VOLT:MODE	FIX STEP	char	Yes	Trigger function control of the AC voltage setting	R/W	M/LE
VOLT:OFFS[:IMM]	numeric	NR3	Yes	DC voltage	R/W	M/LE
VOLT:OFFS:LIM[:UPP]	numeric	NR3	Yes	DC voltage upper limit	R/W	M/LE
VOLT:OFFS:LIM:LOW	numeric	NR3	Yes	DC voltage lower limit	R/W	M/LE
VOLT:OFFS:LINE	numeric	NR3	Yes	DC line voltage	R/W	LE <sup>2</sup>
VOLT:OFFS:MODE	FIX STEP	char	Yes	Trigger function control of the DC voltage setting	R/W	M/LE
VOLT:OFFS:PROT:LEV[:UPP]	numeric	NR3	Yes	OVP value in DC mode and AC+DC mode	R/W	LE
VOLT:OFFS:PROT:LEV:LOW	numeric	NR3	Yes	UVP value in DC mode and AC+DC mode	R/W	LE
VOLT:OFFS:TRIG	numeric	NR3	Yes	DC voltage that will be set when a trigger is received	R/W	M/LE
VOLT:PROT:LEV[:UPP]	numeric	NR3	Yes	OVP value in AC mode	R/W	LE
VOLT:PROT:LEV:LOW	numeric	NR3	Yes	UVP value in AC mode	R/W	LE
VOLT:RANG[:UPP]	numeric	NR3	Yes	Voltage range	R/W	M/LE
VOLT:RANG:AUTO	bool	NR1	Yes	Auto voltage range function	R/W	M
VOLT[:LEV]:TRIG[:AMPL]	numeric	NR3	Yes	AC voltage that will be set when a trigger is received	R/W	M/LE
VOLT:VCC[:LEV]	numeric	NR3	Yes	Internal Vcc voltage	R/W	LE
VOLT:VCC:MODE	AUTO MAN	char	Yes	Vcc operating condition	R/W	LE
WAVE:BANK[:SEL]	NR1	NR1	Yes	Number of the waveform bank to execute	R/W	LE
WAVE:BANK:MODE	FIX STEP	char	Yes	Trigger function control of the number of the waveform bank	R/W	LE
WAVE:BANK:TRIG	numeric	NR3	Yes	The number of the waveform bank that will be set when a trigger is received	R/W	LE
WAVE:BANK:TYPE?	NR1	char	Yes	Type of waveform to output	R	LE
WAVE:EDIT:PCL	NR1			Sets the crest factor of the special waveform	R/W	LE
	numeric	NR3				
WAVE:EDIT:SIN	NR1			Sets the special waveform to the sine wave	W	LE
WAVE[0]:EDIT:USER:DATA:POIN	NR1			Sets a user-defined waveform	R/W	LE
	NR1	NR1				

- 1 Single-phase three-wire output or three-phase output only  
2 Single-phase three-wire output only



## OUTPut subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
OUTP						
[:STAT]	bool	NR1	Yes	Output on/off	R/W	M/LE
:COUP	AC DC ACDC EAC EDC	char	Yes	Output mode	R/W	M/LE
:EXT:LOG	DIS LOW HIGH	char		Sets the logic of the output on/off	R/W	LE
:IMP[:STAT]	bool	NR1	Yes	Output impedance control	R/W	LE
:IMP:LEV	numeric	NR3	Yes	Sets the output impedance in terms of resistance	R/W	LE
:IMP:RAT	numeric	NR3	Yes	Sets the output impedance in terms of percentage	R/W	LE
:SST[:STAT]	bool	NR1	Yes	Soft start control	R/W	LE
:SST:TIME[:RISE]	numeric	NR1	Yes	Rise time	R/W	LE
:PHAS:ON[:STAT]	bool	NR1	Yes	Turns output on phase control on and off	R/W	LE
:PHAS:ON:LEV	numeric	NR3	Yes	Output on phase angle	R/W	LE
:PHAS:OFF[:STAT]	bool	NR1	Yes	Turns output off phase control on and off	R/W	LE
:PHAS:OFF:LEV	numeric	NR3	Yes	Output off phase angle	R/W	LE
:PROT:CLE				Alarm clearing	W	M/LE

## MEASure/ FETCh subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
MEAS[:SCAL]: FETC[:SCAL]:						
CURR:DC				Queries the DC current	R	M/LE
CURR:AC				Queries the AC current	R	M/LE
CURR:AMPL:MAX				Queries the current peak	R	M/LE
CURR:AMPL:MAX:HOLD				Queries the current peak (the held value)	R	M/LE
CURR:CRES				Queries the current crest factor	R	LE
CURR:HARM				Queries the harmonic current	R	LE
CURR:HARM:RAT				Queries the harmonic current (the percentage)	R	LE
FREQ				Queries the frequency	R	M/LE
LVOL				Queries the DC line voltage	R	LE <sup>1</sup>
LVOL:AC				Queries the AC line voltage	R	LE <sup>2</sup>
LVOL:AMPL:MAX				Queries the AC voltage peak	R	LE <sup>2</sup>
POW:DC				Queries the DC power	R	M/LE
POW:AC				Queries the AC power (the actual power)	R	M/LE
POW:AC:APP				Queries the AC power (the apparent power)	R	M/LE
POW:AC:REAC				Queries the AC power (the reactive power)	R	M/LE
POW:AC:REAC:TOT				Queries the AC power (the overall reactive power)	R	M/LE
POW:AC:PFAC				Queries the power factor of the AC power	R	M/LE
POW:AC:PFAC:TOT				Queries the total power factor of the AC power	R	M/LE
VOLT:DC				Queries the DC voltage	R	M/LE
VOLT:AC				Queries the AC voltage	R	M/LE
VOLT:AMPL:MAX				Queries the voltage peak	R	LE

- 1 Single-phase three-wire output only
- 2 Single-phase three-wire output or three-phase output only

## TRIGger subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
ABOR				Aborts the trigger function	W	M/LE
INIT						
[:IMM]:SEQ[1]				Starts the trigger function of sequence 1	W	M/LE
:CONT:NAME	TRAN ACQ		Yes	Sets the auto continue mode of the specified sequence	R/W	M
	bool	NR1				
:CONT:SEQ1	bool	NR1	Yes	Auto continue mode of sequence 1	R/W	M
:CONT:SEQ3	bool	NR1	Yes	Auto continue mode of sequence 3	R/W	M
[:IMM]:NAME	TRAN ACQ SIM PROG	char		Starts the trigger function of the specified sequence	R/W	M/LE
[:IMM]:SEQ3				Starts the trigger function of sequence 3	R/W	M/LE
[:IMM]:SEQ4				Starts the trigger function of sequence 4	R/W	LE
[:IMM]:SEQ5				Starts the trigger function of sequence 5	R/W	LE
TRIG						
[:SEQ[1]][:IMM]				Sequence 1 software trigger	W	M/LE
[:TRAN]:[:IMM]						
[:SEQ[1]]:SOUR	IMM BUS	char	Yes	Sequence 1 trigger source	R/W	LE
[:TRAN]:SOUR						
:SEQ2:SOUR	IMM PHAS	char	Yes	Output on phase control	R/W	M
:SYNC:SOUR						
:SEQ2:PHAS[:ON]	numeric	NR3	Yes	Phase angle of output on phase control	R/W	M
:SEQ3[:IMM]				Sequence 3 software trigger	W	M/LE
:ACQ[:IMM]						
:SEQ3:SOUR	IMM BUS	char	Yes	Sequence 3 trigger source	R/W	M/LE
:ACQ:SOUR						
:SEQ4[:IMM]				Sequence 4 software trigger	R/W	LE
:SIM[:IMM]						
:SEQ4:SOUR	IMM BUS	char	Yes	Sequence 4 trigger source	R/W	LE
:SIM:SOUR						
:SEQ5[:IMM]				Sequence 5 software trigger	W	LE
:PROG[:IMM]						
:SEQ5:SOUR	IMM BUS	char	Yes	Sequence 5 trigger source	R/W	LE
:PROG:SOUR						
:SIM:SOUR						



## PROGram subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
PROG						
:EDIT	NR1			Edits a sequence step	R/W	LE
	bool	NR1				
	numeric	NR3				
	bool	NR1				
	numeric	NR3				
	bool	NR1				
	numeric	NR3				
	numeric	NR3				
	NR1	NR1				
	bool	NR1				
	bool	NR1				
	bool	NR1				
:EDIT:JUMP	NR1			Edits the jump settings of a sequence step	R/W	LE
	bool	NR1				
	NR1	NR1				
	NR1	NR1				
:EDIT:OIMP:RAT	NR1	NR1		Edits the output impedance settings of a sequence step	R/W	LE
	numeric	NR3				
:EDIT:PHAS:STAR	NR1	NR1		Edits the starting phase angle settings of a sequence step	R/W	LE
	bool	NR1				
	[numeric]	NR3				
:EDIT:PHAS:STOP	NR1	NR1		Edits the ending phase angle settings of a sequence step	R/W	LE
	bool	NR1				
	[numeric]	NR3				
:EDIT:PHASE:UOFFS	NR1	NR1		Edits the U-phase offset settings of a sequence step	R/W	LE <sup>1</sup>
	bool	NR1				
	[numeric]	NR3				
:EDIT:PHASE:UV	NR1	NR1		Edits the U-V phase defference settings of a sequence step	R/W	LE <sup>1</sup>
	bool	NR1				
	[numeric]	NR3				
:EDIT:PHAS:UW	NR1	NR1		Edits the U-W phase defference settings of a sequence step	R/W	LE <sup>2</sup>
	bool	NR1				
	[numeric]	NR3				
:EDIT:PHAS:RAMP	NR1	NR1		Sets the phase change	R/W	LE <sup>1</sup>
	char	char				
	[char]	char				
	[char]	char				
:EDIT:VOLT	NR1	NR1		Edits the AC voltage of each phase	R/W	LE <sup>1</sup>
	[numeric]	NR3				
:EDIT:VOLT:OFFS	NR1	NR1		Edits the DC voltage of each phase	R/W	LE <sup>1</sup>
	[numeric]	NR3				
:LOOP	numeric	NR3		Number of sequence repetitions	R/W	LE
CLE	numeric	NR3		Sets all the steps in the sequence to their default values	R/W	LE
:STEP:STAR	numeric	NR3		Sequence starting step number	R/W	LE
:STEP:END	char	NR1		Sequence ending step number	R/W	LE
:EXEC		char, NR3, NR1, NR1		Queries the execution state of the sequence	R	LE
:STAT	STOP RUN PAUS CONT			Changes the execution state of the sequence	W	LE
:EXT:LOG	DIS LOW HIGH	char		Sets the logic of the sequence start/stop	R/W	LE

- 1 Single-phase three-wire output or three-phase output only  
2 Three-phase output only

## SIMulation subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
SIMulation:						
T1:PHAS:STAT	bool	BR1	Yes	Sets the voltage regulation start setting	R/W	LE
T1:TIME[:LEV]	numeric	NR3	Yes	Voltage regulation starting time	R/W	LE
T1:PHAS[:LEV]	numeric	NR3	Yes	Voltage regulation starting phase	R/W	LE
T2:TIME[:LEV]	numeric	NR3	Yes	Slope time 1	R/W	LE
T3:TIME[:LEV]	numeric	NR3	Yes	Voltage regulation time	R/W	LE
T3:VOLT[:LEV]	numeric	NR3	Yes	Regulated voltage	R/W	LE
T4:TIME[:LEV]	numeric	NR3	Yes	Slope time 2	R/W	LE
T5:CYCL:STAT	bool	NR1	Yes	Sets the duration that the voltage remains at the initial level	R/W	LE
T5:TIME[:LEV]	numeric	NR3	Yes	Return time		LE
T5:CYCL[:LEV]	numeric	NR3	Yes	Return cycles	R/W	LE
POL	NORM INV	char	Yes	Voltage regulation polarity	R/W	LE
REP:COUN	numeric	NR3	Yes	Number of repetitions	R/W	LE
STAT	STOP RUN			Executes and stops power line abnormality simulations	W	LE
EXEC		char, NR1		Queries the execution status of power line abnormality simulations	R	LE

## Other subsystems

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
MEM:						
SAV	NRf			Saves settings to memory	W	LE
PREV	NRf	NR1, NR3, NR3, NR1		Views the settings in memory	R	LE
RCL	NRf			Recalls settings from memory	W	LE
SENSe:						
HOLD	SHOR LONG	char		Peak current hold time	R/W	M
CURR:ADJ:ZERO				Starts zero calibration	W	LE
CURR:HOLD	numeric	NR3	Yes	Peak current hold time	R/W	LE
CURR:PEAK:CLE				Clears the peak hold	W	M/LE
APER	numeric	NR3	Yes	Aperture time	R/W	LE
AVER[:STAT]	bool	NR1	Yes	Averaging period of measured values	R/W	M
DISPlay:						
CONT	numeric	NR3	Yes	Adjusts the screen brightness	R/W	LE
AMM	"RMS AVG PEAK WATT"	NR3	Yes	Measured value display	R/W	M
LVOL	bool	NR1	Yes	Selects voltage(phase voltage/ line voltage ) display	R/W	LE <sup>1</sup>
PHAS	NRf	NR1	Yes	Selects display of phase	R/W	LE <sup>1</sup>
MMOD:CURR	RMS PEAK WAT Tage VA PF AVG	char	Yes	Measured current and power displays	R/W	LE
MMOD:VOLT	RMS PEAK AVG	char	Yes	Measured voltage display	R/W	LE

1 Single-phase three-wire output or three-phase output only



## STATus subsystem

SCPI command		Response	Description	R/W	M/LE
Program header	Parameter				
STAT					
:OPER					
[:EVEN]		NR1	Event <sup>1</sup>	R	1
:COND		NR1	Register status <sup>1</sup>	R	1
:ENAB	NRf	NR1	Enable <sup>1</sup>	R/W	1
:PTR	NRf	NR1	Positive transition <sup>1</sup>	R/W	1
:NTR	NRf	NR1	Negative transition <sup>1</sup>	R/W	1
:INST <sup>2</sup>					
[:EVEN]		NR1	Event <sup>3</sup>	R	LE
:COND		NR1	Register status <sup>3</sup>	R	LE
:ENAB	NRf	NR1	Enable <sup>3</sup>	R/W	LE
:PTR	NRf	NR1	Positive transition <sup>3</sup>	R/W	LE
:NTR	NRf	NR1	Negative transition <sup>3</sup>	R/W	LE
:ISUM{1 2 3}					
[:EVEN]		NR1	Event <sup>4</sup>	R	LE
:COND		NR1	Register status <sup>4</sup>	R	LE
:ENAB	NRf	NR1	Enable <sup>4</sup>	R/W	LE
:PTR	NRf	NR1	Positive transition <sup>4</sup>	R/W	LE
:NTR	NRf	NR1	Negative transition <sup>4</sup>	R/W	LE
:PRES			Resets the enable register	W	1
:QUES					
[:EVEN]		NR1	Event <sup>5</sup>	R	1
:COND		NR1	Register status <sup>5</sup>	R	1
:ENAB	NRf	NR1	Enable <sup>5</sup>	R/W	1
:PTR	NRf	NR1	Positive transition <sup>5</sup>	R/W	1
:NTR	NRf	NR1	Negative transition <sup>5</sup>	R/W	1
:INST <sup>2</sup>					
[:EVEN]		NR1	Event <sup>6</sup>	R	LE
:COND		NR1	Register status <sup>6</sup>	R	LE
:ENAB	NRf	NR1	Enable <sup>6</sup>	R/W	LE
:PTR	NRf	NR1	Positive transition <sup>6</sup>	R/W	LE
:NTR	NRf	NR1	Negative transition <sup>6</sup>	R/W	LE
:ISUM{1 2 3}					
[:EVEN]		NR1	Event <sup>7</sup>	R	LE
:COND		NR1	Register status <sup>7</sup>	R	LE
:ENAB	NRf	NR1	Enable <sup>7</sup>	R/W	LE
:PTR	NRf	NR1	Positive transition <sup>7</sup>	R/W	LE
:NTR	NRf	NR1	Negative transition <sup>7</sup>	R/W	LE

- 1 OPERATION status register
- 2 Single-phase three-wire output or three-phase output only
- 3 OPERATION:INSTrument sub register
- 4 OPERATION:INSTrument:ISUMmary sub register
- 5 QUESTionable status register
- 6 OPERATION:INSTrument sub register
- 7 OPERATION:INSTrument:ISUMmary{1|2|3} sub register

## SYSTEM subsystem

SCPI command		Response	*RST	Description	R/W	M/LE
Program header	Parameter					
SYST						
:CONF						
:BACK	bool	NR1		Auto save function of the panel settings and the configuration settings	R/W	M
:DATE	NR1	NR1		Date	R/W	LE
	NR1	NR1				
	NR1	NR1				
:EXT:ACL	DIS LOW HIGH	char		Sets the logic of the alarm clear	R/W	LE
:EXT:OOR:MODE	TOT:EACH	char		Sets the phase to monitor	R/W	LE
:EXT:SHUT:CONT	DIS LOW HIGH	char		Sets the logic of the shut down	R/W	LE
:EXT:SINP:POL	NORM INV	char	Yes	Sets the polarity	R/W	LE
:PHAS:UV	numeric	NR1		U-V phase difference	R/W	LE <sup>1</sup>
:PHAS:UW	numeric	NR1		U-W phase difference	R/W	LE <sup>2</sup>
:PHAS:UOFF:INIT				Clears the U phase offset setting	W	LE <sup>1</sup>
:POW:EXP[:MAX]	numeric	NR3	Yes	Anticipated maximum power	R/W	LE
:RESP[:VOLT]	SLOW MED FAST	char	Yes	Response	R/W	LE
:SENS:MODE	OFF SENS1 SENS2 RADJ	char	Yes	Compensation function	R/W	LE
:SSUP	bool	NR1		Voltage surge suppression	R/W	LE
:STAT:OUTP:POL	POS NEG	char	Yes	Status signal output polarity	R/W	LE
:TIME	NR1	NR1		Time	R/W	LE
	NR1	NR1				
	NR1	NR1				
:TPH:MODE	bool	NR1	Yes	Output mode (Single-phase three-wire, Double-phase)	R/W	LE <sup>3</sup>
:TRIG:INP:POL	POS NEG	char	Yes	Trigger signal input polarity	R/W	LE
:TRIG:OUTP:POL	POS NEG	char	Yes	Trigger signal output polarity	R/W	LE
:TRAC	bool	NR1		Communication error display	R/W	M/LE
:WIR	P1 P1W3 P3	char		Output mode (Single-phase, Single-phase three-wire, Three-phase)		LE <sup>4</sup>
:WIR:CAT		char		Queries the output mode that the PCR-LE2 can change		LE <sup>4</sup>
:ERR[:NEXT]		string		Reads error information	R	M/LE
:KLOC	bool	NR1		Locks panel controls	R/W	M/LE
:LOC				Switches the PCR to local mode	W	M/LE
:OPT		char		Queries options	R	M/LE
:REM				Sets the PCR to remote mode; locks all panel controls, except the LOCAL key	W	M/LE
:RWL				Sets the PCR to remote mode; locks panel controls	W	M/LE
:SLE:EXEC				Activates sleep mode immediately	R/W	LE
:SLE[:STAT]	bool	NR1	Yes	Turns the sleep function on and off	R/W	LE
:SLE:TIME	numeric	NR3	Yes	The time that must elapse before the PCR-LE series enters sleep mode	R/W	LE
:VERS				Queries SCPI specification version that the PCR series complies with	R	M/LE

- 1 Single-phase three-wire output or three-phase output only
- 2 Three-phase output only
- 3 PCR-LE only
- 4 PCR-LE2 only





## IEEE 488.2 common commands

IEEE 488.2 common command	Parameter	Description	R/W	M/LE
*CLS		Clears all the event registers	W	M/LE
*ESE	NR1	Sets the event status enable register bits	R/W	M/LE
*ESR		Queries the event status register	R	M/LE
*IDN		Queries the identification string (manufacturer information)	R	M/LE
*OPC		Causes the PCR series to generate the operation complete message in the event status register when all of its pending operations have finished	R/W	M/LE
*OPT		Queries the optional interface boards that are installed in the PCR series	R	M/LE
*PSC	bool	Sets whether the *ESE and *SRE settings will be cleared	R/W	M/LE
*RCL	NR1	Recalls the settings that have been stored to memory		M
*RST		Resets the PCR series; configures the PCR series to a known condition independent from the usage history of the device	W	M/LE
*SAV	NR1	Saves the current settings to memory		M
*SRE	NR1	Sets the service request enable register bits	R/W	M/LE
*STB		Reads the status byte and master summary status bits	R	M/LE
*TRG		Trigger command	W	M/LE
*TST		Executes a self test	R	M/LE
*WAI		Prevents the PCR series from executing subsequent commands and queries until the flag indicating that there are no operations standing by becomes true	W	M/LE

