

A List of Messages

SCPI command: Command name in the short form

Affected command: Yes for commands that are affected by *RST, *RCL, or MEAS:<meter_fn>?

R/W: Query command (R)/set command (W).

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

Table 1 SENSE functions

SCPI Command		Setting		Default	Resp.	Affected Command			Description	R/W	*
Program Header	Parameter		Unit			*RST	*RCL	MEAS:<meter_fn>?			
[SENS:]											
IMP											
:AVER:MOV											
:COUN	<numeric>	1 to 256		1	<NR1>	Yes	Yes	Yes	Moving average count	R/W	3
:CLE									Moving average area	W	3
:CURR											
:AC											
[[:LEV]	<numeric>	0 to the rated load current of the PLZ4W × 1/10	Arms	0	<NR3>	Yes	Yes	Yes	Measuring AC current	R/W	3
:RAT	<numeric>	0 to 10	%	0	<NR3>	Yes	Yes	Yes	Measuring AC current (percentage)	R/W	3
:FREQ	<numeric>	0.01 to 20000	Hz	20000	<NR3>	Yes	Yes	Yes	Measuring frequency	R/W	3
:PULS											
:TRAN											
[[:LEAD]	<numeric>	0.000 01 to 0.01	s	0.00001	<NR3>	Yes	Yes	Yes	Pulse transition time	R/W	3
:WIDT	<numeric>	0.0001 to 0.01	s	0.01	<NR3>	Yes	Yes	Yes	Pulse width	R/W	3
:DEPT											
[[:LEV]	<numeric>	0 to the rated load current of the PLZ4W	A	0	<NR3>	Yes	Yes	Yes	Pulse depth (current)	R/W	3
:RAT	<numeric>	0 to 100	%	100	<NR3>	Yes	Yes	Yes	Pulse depth	R/W	3
:SAMP											
:POS	<numeric>	0 to 0.00999	s	0.00006	<NR3>	Yes	Yes	Yes	Sampling start position	R/W	3
:REG	<numeric>	0.000002 to 0.00051	s	0.00003	<NR3>	Yes	Yes	Yes	Sampling region	R/W	3
:METH	{ACIN CINT}			ACIN	<char>	Yes	Yes		Measurement method	R/W	3
VOLT[:DC]:PROT											
:LOW	<numeric>	-2 to 150	V	2	<NR1>	Yes	Yes	Yes	Voltage sensing undervoltage protection	R/W	3
:DEL	<numeric>	0 to 10	s	4	<NR3>	Yes	Yes		Voltage sensing undervoltage protection delay time	R/W	3

Table 2 INPut and SOURce functions

SCPI Command		Setting		Default	Resp.	Affected Command			Description	R/W	*
Program Header	Parameter		Unit			*RST	*RCL	MEAS:<meter_fn>?			
INP											
[[:STAT]	<bool>			0	<NR1>	Yes			Load on/off	R/W	1
:PROT:CLE									Alarm clear	W	1
:SST											
:RISE	<numeric>	0 to 7200	s	0		Yes	Yes		Soft start rising edge	W	3
:FALL	<numeric>	0 to 7200	s	0		Yes	Yes		Soft start falling edge	R/W	3
:RTIM			s		<NR1>				Remaining time	R	3
:SENS											
:VOLT	{1 2}			1	{1 2}	Yes	Yes		VOLTAGE SENSING channel	R/W	3
:CURR	{1 2}			1	{1 2}	Yes	Yes		CURRENT SENSING channel	R/W	3
SOUR											
:CURR[:DC]											
:LEV	<numeric>	0 to the rated load current of the PLZ4W	A	0	<NR3>	Yes	Yes		Electronic load DC current	R/W	1
:EXT	<numeric>	0 to the value specified by Aux DC LOAD	A	0	<NR3>	Yes	Yes		External electronic load DC current	R/W	3
:RANG	{LOW MED HIGH}			HIGH	<char>	Yes	Yes		Electronic load DC current range	R/W	3
:VOLT[:DC]											
:LEV	<numeric>	0 to 150	V	0	<NR3>	Yes	Yes		PLZ-4W voltage	R/W	1
:RANG	{LOW HIGH}			HIGH	<char>	Yes	Yes		PLZ-4W voltage range	R/W	3
:PROT:LOW	<numeric>	-1, 0 to 150	V	-1	<NR3>	Yes	Yes		Undervoltage protection	R/W	3
:POW:PROT											
:UPP	<numeric>	0 to the rated load power of the PLZ4W	W	Rated load power		Yes	Yes		PLZ4W OPP activation voltage of the electronic load DC voltage	R/W	3

Table 3 FORMat and TRACe functions

SCPI Command		Setting		Default	Resp.	Affected Command			Description	R/W	*
Program Header	Parameter					*RST	*RCL	MEAS:<meter_fn>?			
FORM											
:BORD	{NORM SWAP}			NORM	<char>	Yes			Data transmission/recording mode	R/W	1
:PAGE											
:STAR	<numeric>	0.000 to 0.100	s	0.000	<NR3>	Yes			Start point of the data to be transferred	R/W	3
:LENG	<numeric>	0.000 to 0.100	s	0.100	<NR3>	Yes			Length of the data to be transferred	R/W	3
TRAC											
[:DATA]	{VOLT CURR}				voltage waveform data				Voltage waveform data or current waveform data	R	3

Table 4 MEASure & TRIGger functions

SCPI Command		Setting		Unit	Default	Resp.	Affected Command			Description	R/W	*	
Program Header	Parameter						*RST	*RCL	MEAS:<meter_fn>?				
FETC[:SCAL] ARR													
:IMP													
	:MAGN			Ω		<NR3> for [:SCAL] and <NR3, NR3...> for ARR				Magnitude*1, *2	R	3	
	:RES			Ω							Resistance*1, *2	R	3
	:REAC			Ω							Reactance*1, *2	R	3
	:PHAS			DEG							Phase angle*1, *2	R	3
	:VOLT[:DC]			V							Voltage measurement*2	R	1
	:CYCL			V							Voltage measurement*2,*3	R	1
	:CURR[:DC]			A							Current measurement*2	R	1
	:CYCL			A							Current measurement*2,*3	R	1
READ[:SCAL] ARR													
:IMP													
	:MAGN			Ω		<NR3> for [:SCAL] and <NR3, NR3...> for ARR				Magnitude*1,*4	R	3	
	:RES			Ω							Resistance*1,*4	R	3
	:REAC			Ω							Reactance*1,*4	R	3
	:PHAS			DEG							Phase angle*1,*4	R	3
	:VOLT[:DC]			V							Voltage measurement*4	R	1
	:CYCL			V							Voltage measurement*2,*4	R	1
	:CURR[:DC]			A							Current measurement*4	R	1
	:CYCL			A							Current measurement*2,*4	R	1
MEAS[:SCAL] ARR													
:IMP													
	:MAGN			Ω		<NR3> for [:SCAL] and <NR3, NR3...> for ARR				Magnitude*1,*5	R	3	
	:RES			Ω							Resistance*1,*5	R	3
	:REAC			Ω							Reactance*1,*5	R	3
	:PHAS			DEG							Phase angle*1,*5	R	3
	:VOLT[:DC]			V							Voltage measurement*5	R	1
	:CYCL			V							Voltage measurement*5	R	1
	:CURR[:DC]			A							Current measurement*2,*5	R	1
	:CYCL			A							Current measurement*5	R	1
ABOR													
										Stops measurement*2,*5	W	1	
INIT[:IMM]													
	:ALL									Trigger function start	W	1	
	:SEQ[1]									SEQ1 start trigger function	W	1	
	:WAV									SEQ1 start trigger function while holding the voltage and current waveform data	W	3	
	:SEQ2									SEQ2 start trigger function	W	1	
TRIGger													
[:SEQ[1]]													
	:COUN	<numeric>	1 to 16		1		Yes	Yes		Trigger count	R/W	1	
	:TIM	<numeric>	0.01 to 60.00	s	0.01	<NR3>	Yes	Yes		Trigger time setting	R/W	1	
	:SOUR	{IMM BUS TIM}			IMM	<char>	Yes	Yes		Trigger-wait status	R/W	1	
:SEQ2													
	:COUN	<numeric>	1 to 16		1		Yes	Yes		Trigger count	R/W	1	
	:TIM	<numeric>	0.01 to 60.00	s	0.01	<NR3>	Yes	Yes		Trigger time setting	R/W	1	
	:SOUR	{IMM BUS TIM}			IMM	<char>	Yes	Yes		Trigger-wait status	R/W	1	

*1. Impedance measurement

*2. Queries the measured data.

*3. Current/Voltage synchronized to the impedance measurement

*4. Starts the measurement and queries the data.

*5. Resets a portion of the settings to default, starts the measurement, and queries the data.

Table 5 SYSTem functions

SCPI Command		Default	Resp.	Affected Command			Description	R/W	*
Program Header	Parameter			*RST	*RCL	MEAS: <meter _fn>?			
SYST									
:VERS			<scpi_version>				SCPI revision	R	1
:ERR[:NEXT]			<code>,"<description>"				Read the error	R	1
:LOC							Go To Local	W	3
:RWL							Local Lock Out	W	3
:REM	<bool>						Remote Enable	W	3
:COMM:SER:PACE	{XONIACK}	XON	<char>				Flow control condition	R/W	

Table 6 STATUS functions

SCPI Command		Setting	Resp.	Description	R/W	*
Program Header	Parameter					
STAT						
:OPER						
:[:EVEN]			<NR1>	Event ^{*1}	R	1
:COND			<NR1>	Register status ^{*1}	R	1
:ENAB	<NR1>	0 to 32767	<NR1>	Enable ^{*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
:MEAS						
:[:EVEN]			<NR1>	Event ^{*2}	R	1
:COND			<NR1>	Register status ^{*2}	R	1
:ENAB	<NR1>	0 to 32767	<NR1>	Enable ^{*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
:TRIG						
:[:EVEN]			<NR1>	Event ^{*3}	R	1
:COND			<NR1>	Register status ^{*3}	R	1
:ENAB	<NR1>	0 to 32767	<NR1>	Enable ^{*3}	R/W	1
:PTR	<NR1>	0 to 32767	<NR1>	Positive transition ^{*3}	R/W	1
:NTR	<NR1>	0 to 32767	<NR1>	Negative transition ^{*3}	R/W	1
:PROT						
:[:EVEN]			<NR1>	Event ^{*4}	R	1
:COND			<NR1>	Register status ^{*4}	R	1
:ENAB	<NR1>	0 to 32767	<NR1>	Enable ^{*4}	R/W	1
:PTR	<NR1>	0 to 32767	<NR1>	Positive transition ^{*4}	R/W	1
:NTR	<NR1>	0 to 32767	<NR1>	Negative transition ^{*4}	R/W	1
:QUES						
:[:EVEN]			<NR1>	Event ^{*5}	R	1
:COND			<NR1>	Register status ^{*5}	R	1
:ENAB	<NR1>	0 to 32767	<NR1>	Enable ^{*5}	R/W	1
:PTR	<NR1>	0 to 32767	<NR1>	Positive transition ^{*5}	R/W	1
:NTR	<NR1>	0 to 32767	<NR1>	Negative transition ^{*5}	R/W	1

- *1. OPERation status register
- *2. OPERation:MEASuring status register
- *3. OPERation:TRIGger status register
- *4. OPERation:PROTecting status register
- *5. QUESTionable status register

Table 7 IEEE488.2 common commands

IEEE488.2 Common Command	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
:RCL	{0 1 2 3}	Recalls the contents saved to the memory.	W
*RST		Performs a device reset. Configures the KFM2150 to a known condition independent from the usage history of the device.	W
*SAV	{1 2 3}	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		Command error.	W
*TST?		Since there is no self-test function built into the KFM2150, an ASCII character 0 is always returned in the output queue in response to this query.	R
*WAI		Prevents the device from executing subsequent commands or queries until the No Operation Pending flag becomes true. (*OPC?)	W