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1. Outlines

This program can be used to change settings and read from a computer. The LR8100 series can communicate via TCP/IP (LAN). For details, refer to the LR8100 series communication command manual.

2. Prerequisite.

To use this program, you must meet the following requirements

- Experience in program development using LabVIEW.

3. How to Use Driver Functions

In the program library, find the VI (driver) for the function that corresponds to the instrument's control command. Once the appropriate VI (driver) is found, connect an open VISA session to the instrument. Next, specify the configuration/readout (query) for the instrument.

To configure, further set the appropriate parameters on the input terminals. For queries, the response header must be set to OFF.

All drivers also have two inputs and two outputs in common and are laid out as follows

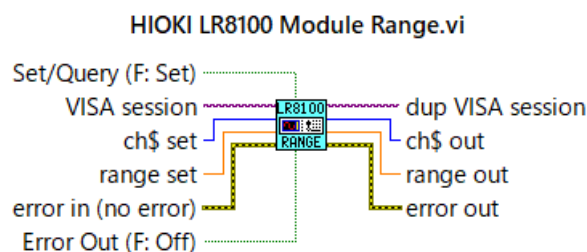
Input

VISA session	Upper left
error in (no error)	Lower left

Output

dup VISA session	Upper right
error out	Bottom right

Example: For HIOKI LR8100 Module Range.vi



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4. Function Description

4-1. Driver VI Type

The driver functions included in this program library are shown below.

	Title	Function / Communication commands used
1	HIOKI LR8100 IDN.vi	Queries for machine ID (identification code). *IDN?
2	HIOKI LR8100 OPT.vi	Queries the machine's optional equipment. *OPT?
3	HIOKI LR8100 Reset.vi	Initializes the machine. *RST
4	HIOKI LR8100 TST.vi	Queries ROM/RAM check results. *TST?
5	HIOKI LR8100 OPC.vi	The LSB of SESR are set and queried for operating status. *OPC *OPC?
6	HIOKI LR8100 WAI.vi	After command processing is completed, subsequent commands are executed. *WAI
7	HIOKI LR8100 CLS.vi	Clears the status byte and associated queues (except the output queue). *CLS
8	HIOKI LR8100 ESR.vi	Reads and clears the Standard Event Status Register (SESR). *ESR?
9	HIOKI LR8100 STB.vi	Reads the status byte and MSS bit without running the serial port. *STB
10	HIOKI LR8100 ESR0.vi	Reads the Event Status Register 0 (ESR0). :ESR0?
11	HIOKI LR8100 Start.vi	Starts waveform capturing. :START
12	HIOKI LR8100 Stop.vi	Ends waveform capture. :STOP
13	HIOKI LR8100 Abort.vi	Performs forced termination. :ABORT
14	HIOKI LR8100 Nrmflag.vi	Gets the normalization status flag of the configuration. :NRMFlag
15	HIOKI LR8100 Waitnextsmpl.vi	Queries the held data number. :WAITNextsmpl?
16	HIOKI LR8100 Conf Sample.vi	Sets and queries the recording interval. :CONFigure:SAMPle A :CONFigure:SAMPle?

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	Title	Function / Communication commands used
17	HIOKI LR8100 Conf Rectime.vi	Sets and queries the recording time. :CONFigure:RECTime A,B,C,D :CONFigure:RECTime?
18	HIOKI LR8100 Conf Sampkind.vi	Sets and queries the recording mode (function). :CONFigure:SAMPKind A\$:CONFigure:SAMPKind?
19	HIOKI LR8100 Conf ExtreCsamp.vi	Sets and queries the number of recorded samples for external sampling. :CONFigure:EXTRECSamp A :CONFigure:EXTRECSamp?
20	HIOKI LR8100 Module Datarate.vi	Sets and queries the data update rate for the specified module. :MODUle:DATARate module\$,A :MODUle:DATARate? module\$
21	HIOKI LR8100 Module Filter.vi	Sets and queries power frequency filter. :MODUle:FILTer A\$:MODUle:FILTer?
22	HIOKI LR8100 Module Dfilter.vi	Queries the digital filter value for the specified module. :MODUle:DFILTer? module\$
23	HIOKI LR8100 Module Wire.vi	Sets and queries the disconnection detection of thermocouple in the specified module. :MODUle:WIRE A\$:MODUle:WIRE?
24	HIOKI LR8100 Module store.vi	Sets and queries measurement ON/OFF for the specified channel. :MODUle:STORe ch\$,A\$:MODUle:STORe? ch\$
25	HIOKI LR8100 Module Inmode.vi	Sets and queries the input type for the specified channel. :MODUle:INMOde ch\$,A\$:MODUle:INMOde? ch\$
26	HIOKI LR8100 Module Range.vi	Sets and queries the vertical axis range for the specified channel. :MODUle:RANGe ch\$,A :MODUle:RANGe? ch\$
27	HIOKI LR8100 Module Sensor.vi	Sets and queries thermocouples for temperature measurement of the specified channel. :MODUle:SENSor ch\$,A\$:MODUle:SENSor? ch\$
28	HIOKI LR8100 Module Rjc.vi	Sets and queries the contact compensation of temperature measurement for the specified channel. :MODUle:RJC ch\$,A :MODUle:RJC? ch\$

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	Title	Function / Communication commands used
29	HIOKI LR8100 Module Pcostart.vi	Sets and queries the start timing of integration for the specified pulse channel. :MODULE:PCOSTart pls\$,A\$:MODULE:PCOSTart? pls\$
30	HIOKI LR8100 Module Prange.vi	Sets and queries the RPM range for the specified pulse channel. :MODULE:PRANGe pls\$,A\$:MODULE:PRANGe? pls\$
31	HIOKI LR8100 Module Preset.vi	Sets and queries the reset for the specified pulse channel. :MODULE:PRESet pls\$,A\$:MODULE:PRESet? pls\$
32	HIOKI LR8100 Module Psmooth.vi	Sets and queries the pulse rotation speed smoothing for the specified pulse channel. :MODULE:PSMooth pls\$,A\$:MODULE:PSMooth? pls\$
33	HIOKI LR8100 Module Pinmode.vi	Sets and queries the input type for the specified pulse channel. :MODULE:PINMDe pls\$,A\$:MODULE:PINMDe? pls\$
34	HIOKI LR8100 Module Pcomode.vi	Sets and queries the type of integration for the specified pulse channel. :MODULE:PCOMDe pls\$,A\$:MODULE:PCOMDe? pls\$
35	HIOKI LR8100 Module Pcount.vi	Sets and queries the number of pulses per revolution for the specified pulse channel. :MODULE:PCOUnt pls\$,A\$:MODULE:PCOUnt? pls\$
36	HIOKI LR8100 Module Pslope.vi	Sets and queries the slope of the specified pulse channel. :MODULE:PSLOPe pls\$,A\$:MODULE:PSLOPe? pls\$
37	HIOKI LR8100 Module Pthre.vi	Sets and queries the threshold level of the specified pulse channel. :MODULE:PTHRe? pls\$:MODULE:PTHRe pls\$,A\$
38	HIOKI LR8100 Module Pfilter.vi	Sets and queries the range relationship for the specified pulse channel. :MODULE:PFILTer pls\$,A\$:MODULE:PFILTer? pls\$
39	HIOKI LR8100 Trig Mode.vi	Sets and queries the repeat record. :TRIGger:MODE A\$:TRIGger:MODE?
40	HIOKI LR8100 Trig Detecttime.vi	Queries the start trigger detection time. :TRIGger:DETECTTime A,B,C :TRIGger:DETECTTime?

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	Title	Function / Communication commands used
41	HIOKI LR8100 Trig Detectdate.vi	Queries the start trigger detection date. :TRIGger:DETECTDate A,B,C :TRIGger:DETECTDate?
42	HIOKI LR8100 Memo Chstore.vi	Queries the presence or absence of storage data for the specified channel. :MEMory:CHSTore? ch\$
43	HIOKI LR8100 Memo Fchstore.vi	Queries the presence or absence of hold data for the specified channel. :MEMory:FCHSTore? ch\$
44	HIOKI LR8100 Memo Tchstore.vi	Queries the presence or absence of the channels with storage data for the specified module. :MEMory:TCHSTore? module\$
45	HIOKI LR8100 Memo Tfchstore.vi	Queries the presence or absence of the channels with hold data for the specified module. :MEMory:TFCHSTore? module\$
46	HIOKI LR8100 Memo Point.vi	Sets and queries the output points of storage data. :MEMory:POINT ch\$,A :MEMory:POINT?
47	HIOKI LR8100 Memo Apoint.vi	Sets and queries the output points of storage data. (When measuring data longer than the internal memory) :MEMory:APOINT ch\$,A :MEMory:APOINT?
48	HIOKI LR8100 Memo Maxpoint.vi	Queries the number of storage data. :MEMory:MAXPoint?
49	HIOKI LR8100 Memo Amaxpoint.vi	Queries the number of storage data. (When measuring data longer than the internal memory) :MEMory:AMAXPoint?
50	HIOKI LR8100 Memo Toppoint.vi	Queries the storage head data number. (When measuring data longer than the internal memory) :MEMory:TOPPoint?
51	HIOKI LR8100 Memo Adata.vi	Queries the storage data output (ASCII) for the specified channel. :MEMory:ADATa? A
52	HIOKI LR8100 Memo Vdata.vi	Queries the storage data output (measured values) for the specified channel. :MEMory:VDATa? A
53	HIOKI LR8100 Memo Getreal.vi	Acquires and retains all measurement channel data. :MEMory:GETReal
54	HIOKI LR8100 Memo Areal.vi	Queries the final storage data output (ASCII) for the specified channel. :MEMory:AREAI? ch\$
55	HIOKI LR8100 Memo Vreal.vi	Queries the final storage data output (measured values) for the specified channel. :MEMory:VREAL? ch\$

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	Title	Function / Communication commands used
56	HIOKI LR8100 Memo TAreai.vi	Queries the final storage data output (ASCII) of the measurement valid channels for the specified module. :MEMory:TAREAI? ch\$
57	HIOKI LR8100 Memo TVreal.vi	Queries the final storage data output (measured values) of the measurement valid channels for the specified module. :MEMory:TVREAL? ch\$
58	HIOKI LR8100 Memo Afetch.vi	Queries the hold data output (ASCII) for the specified channel. :MEMory:AFETch? ch\$
59	HIOKI LR8100 Memo Vf fetch.vi	Queries hold data output (measured values) for the specified channel. :MEMory:VFETch? ch\$
60	HIOKI LR8100 Memo T Afetch.vi	Queries the hold data output (ASCII) for the specified module. :MEMory:TAFETch? ch\$
61	HIOKI LR8100 Memo TVf fetch.vi	Queries the hold data output (measured values) for the specified module. :MEMory:TVFETch? ch\$
62	HIOKI LR8100 Memo Ratio.vi	Queries coefficients to convert storage data into physical quantity.
63	HIOKI LR8100 Scal Set.vi	Sets and queries the scaling ON/OFF. :SCALing:SET ch\$,A\$:SCALing:SET? ch\$
64	HIOKI LR8100 Scal Volt.vi	Sets and queries scaling conversion. :SCALing:VOLT ch\$,A :SCALing:VOLT? ch\$
65	HIOKI LR8100 Scal Offset.vi	Sets and queries the scaling offset. :SCALing:OFFSet ch\$,A :SCALing:OFFSet? ch\$
66	HIOKI LR8100 Syst Extslope.vi	Sets and queries the slope of the external sampling and external trigger terminals. :SYSTem:EXTSLOPe A\$:SYSTem:EXTSLOPe?
67	HIOKI LR8100 Syst Extfilter.vi	Sets and queries the filter of the external sampling and external trigger terminals. :SYSTem:EXTFILTer A\$:SYSTem:EXTFILTer?

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The following is a list of non-driver functions included in this program library.



	Title	Function
1	HIOKI LR8100 Initialize.vi	Opens a VISA session to initialize the interface and data logger to be used.
2	HIOKI LR8100 Close.vi	Closes the VISA session.
3	Wait.vi	Sets the waiting time.
4	Write.vi	Sends a command to the measurement device.
5	HIOKI LR8100 Demo.vi	Demo program for LR8100 series data loggers.

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4-2. Driver VI common input/output

All drivers have common inputs and outputs. The following is a description of the common inputs and outputs.


4-2-1. Driver common input

Title	Data type	Description
VISASession		VISA session
error in (no error)		For a detailed description of error inputs, see the LabVIEW online reference, Error Reporting section. For VISA-specific error information, see VISA Error Input/Error Output. Default: no error

4-2-2. Driver common output

Title	Data type	Description
dup VISASession		Duplication VISA session
error out		For a detailed description of error output, see the LabVIEW online reference, Error Reporting section. See VISA Error Input/Error Output for VISA-specific error information.

4-2-3. LR8100 driver common output

Title	Data type	Description
Error Out		Append the result of reading the standard event status register to the output of ERROR OUT. For details, refer to the LR8100 series communication command instruction manual. Default: Off

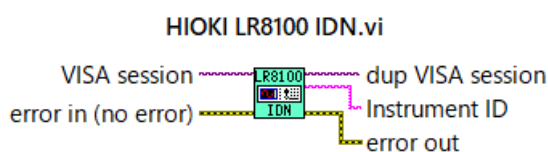
(Note)

In the LR8100 series VIs, the output data type is the same as the input data type.

4-3. Details of Driver VI

4-3-1. HIOKI LR8100 IDN.vi

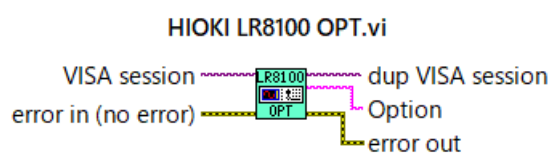
Queries for machine ID (identification code).



Title	Data type	Description
Instrument ID		<p>Returns the query result of machine ID (identification code) as string type.</p> <p>A\$,B\$,C\$,D\$</p> <p>A\$ = Manufacturer's name B\$ = Model name C\$ = Serial number D\$ = Software Version</p>

4-3-2. HIOKI LR8100 OPT.vi

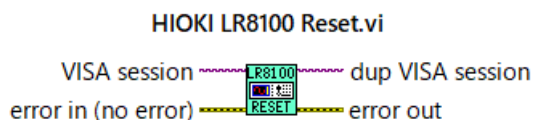
Queries the machine's optional equipment.



Title	Data type	Description
Instrument ID		<p>Returns the query result of the machine's optional equipment as string type.</p> <p>A1,A2,A3,...,A10</p> <p>A1 to A10 = 0 (No Module), 1 (M7100 15ch voltage and temperature module), 3 (M7102 30ch voltage and temperature module)</p>

4-3-3. HIOKI LR8100 Reset.vi

Initializes the machine.



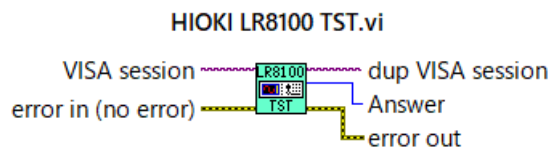
Title	Data type	Description
		No input/output terminals other than common input/output

(Note)

- Don't clear anything related to LAN communication.
- *RST commands take time to process, so if you want to send the next command,
- If you want to send the next command, send *OPC? after *RST and wait for the completion of initialization before sending the next command.

4-3-4. HIOKI LR8100 TST.vi

Queries ROM/RAM check results.

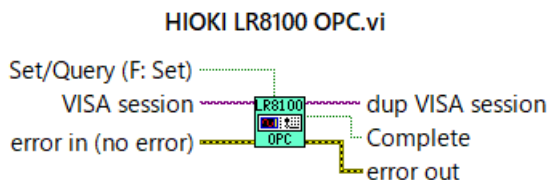


Title	Data type	Description
Answer	I32	Returns the query result of a ROM/RAM check as numeric data type. Answer = 0 (Normal), 1 (Abnormal)

4-3-5. HIOKI LR8100 OPC.vi

*OPC : Sets the LSB of SESR after all operations are completed.

*OPC? : After all operations are completed, ASCII 1 is responded.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
Complete		Returns the query result. Complete = False (When set, operation incomplete, error), True (When operation complete)

(Note)

Do not use this command for monitoring start processing when Recording Time Continuous is ON.

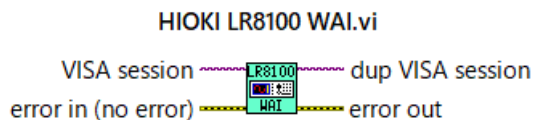
The commands to wait for the end of processing are as follows:

- Measurement stop (:STOP)
- Capturing hold data (:MEMory:GETReal)
- Initialize device (*RST)

(When waiting for measurement stop, it is necessary to send the :STOP command twice.)

4-3-6. HIOKI LR8100 WAI.vi

After command processing is completed, subsequent commands are executed.



Title	Data type	Description
		No input/output terminals other than common input/output

(Note)

Do not use this command for monitoring start processing when Recording Time Continuous is ON.

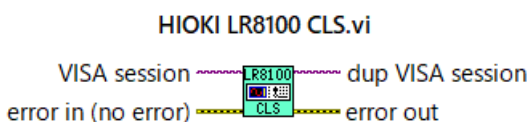
The commands to wait for the end of processing are as follows:

- Measurement stop (:STOP)
- Capturing hold data (:MEMory:GETReal)
- Initialize device (*RST)

(When waiting for measurement stop, it is necessary to send the :STOP command twice.)

4-3-7. HIOKI LR8100 CLS.vi

Clears the status byte and associated queues (except the output queue).



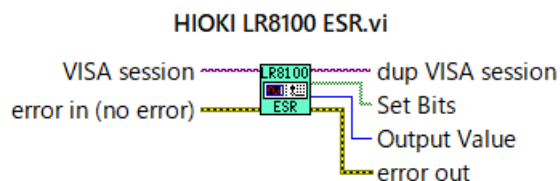
Title	Data type	Description
		No input/output terminals other than common input/output

(Note)

Since the output queue is not cleared, the MAV (bit 4) in the status byte is not affected.

4-3-8. HIOKI LR8100 ESR.vi

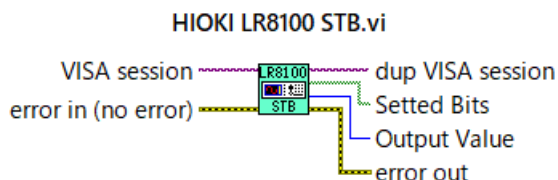
Reads and clears the Standard Event Status Register (SESR).



Title	Data type	Description
Set Bits	[TF]	Returns the SESR query result (bit array). Set Bits = False (0), True (1)
Output Value	I32	Returns the SESR query result as numeric data type. Output Value = 0 to 255

4-3-9. HIOKI LR8100 STB.vi

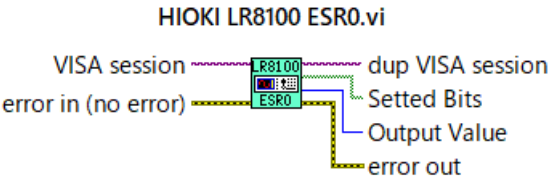
Reads the status byte and MSS bit without running the serial port.



Title	Data type	Description
Set Bits	[TF]	Returns the MSS query result (bit array). Set Bits = False (0), True (1)
Output Value	I32	Returns the MSS query result as numeric data type. Output Value = 0 to 255

4-3-10. HIOKI LR8100 ESR0.vi

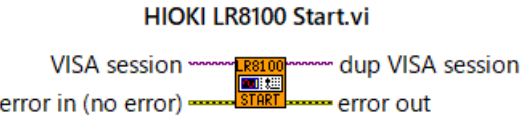
Reads the Event Status Register 0 (ESR0).



Title	Data type	Description
Set Bits		Returns the ESR0 query result (bit array). Set Bits = False (0), True (1)
Output Value		Returns the ESR0 query result as numeric data type. Output Value = 0 to 255

4-3-11. HIOKI LR8100 Start.vi

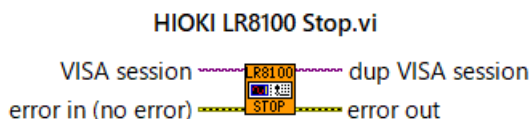
Starts waveform capturing.



Title	Data type	Description
		No input/output terminals other than common input/output

4-3-12. HIOKI LR8100 Stop.vi

Ends waveform capture.



Title	Data type	Description
		No input/output terminals other than common input/output

(Note)

The operation differs depending on the recording time setting.

:STOP command 1st time

When the recording time is continuous recording: It does not stop.

When the recording time is time-specified: Stops after measuring for the recording time.

:STOP command 2nd time

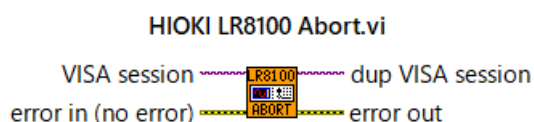
When recording time is continuous: Measurement is stopped.

When the recording time is time-specified: Measurement is stopped.

(:STOP command processing end timing is the timing when the measurement actually stops.)

4-3-13. HIOKI LR8100 Abort.vi

Performs forced termination.



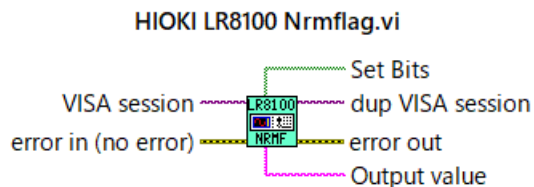
Title	Data type	Description
		No input/output terminals other than common input/output

(Note)

After sending :ABORT command, wait at least 0.2 seconds before sending the next command.

4-3-14. HIOKI LR8100 Nrmflag.vi

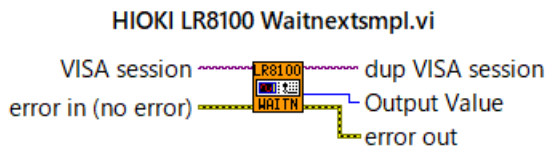
Gets the normalization status flag of the setting as a hexadecimal string. Then clear the bit.



Title	Data type	Description
Set Bits		Returns the Nrmflag query result (bit array). Set Bits = False (0), True (1)
Output value		Returns the Nrmflag query result as string type. Output value = 0x00000000 to 0xffffffff

4-3-15. HIOKI LR8100 Waitnextspl.vi

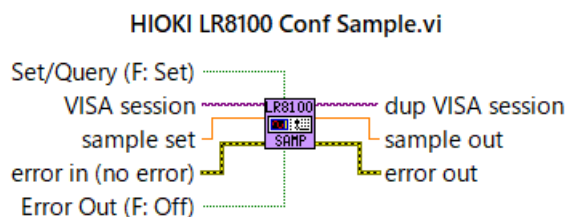
Queries the held data number.






Title	Data type	Description
Output Value		Returns the query result of the held data number with numeric data type. Output Value = 0 to Latest storage number

4-3-16. HIOKI LR8100 Conf Sample.vi

Sets and queries the recording interval.



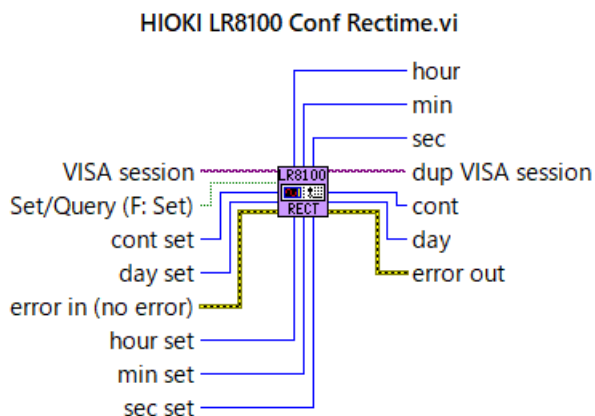
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
sample set		Sets the recording interval. sample set = 5.0E-3 to 3.6E+3 (sec)
sample out		Returns the query result of the recording interval as numeric data type. sample out = 5.0E-3 to 3.6E+3 (sec)

(Note)

If a value is specified that is not in the settings, and there is a range higher than the value you tried to set, it will be set to the nearest range.


4-3-17. HIOKI LR8100 Conf Rectime.vi

Sets and queries the recording time.



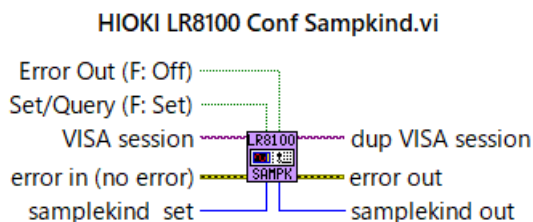
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
cont set		Sets the continuous record. cont set = OFF, ON
day set		Sets the date. day set = 0 to 500 (day)
hour set		Sets the hour. Hour set = 0 to 23 (hour)
min set		Sets the minute. min set = 0 to 59 (min)
sec set		Sets the second. sec set = 0 to 59 (sec)
cont		Returns the query results of the continuous record as numeric data type. cont = 0, 1 (If all parameters are 0, the value is 1.)
day		Returns the query results for the day as numeric data type. day = 0 to 500 (day)
hour		Returns the query results for the hour as numeric data type. hour = 0 to 23 (hour)
min		Returns the query results for the minute as numeric data type. min = 0 to 59 (minute)




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sec		Returns the query results for the second as numeric data type. sec = 0 to 59 (second)
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4-3-18. HIOKI LR8100 Conf Sampkind.vi

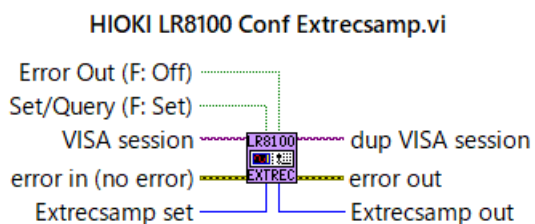
Sets and queries the recording mode (function).






Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
samplekind set		Sets the recording mode (function). samplekind set = NORMAl, EXT
samplekind out		Returns the query result of the record mode (function) as enumerated type. samplekind out = NORMAl, EXT

4-3-19. HIOKI LR8100 Conf Extrecsamp.vi

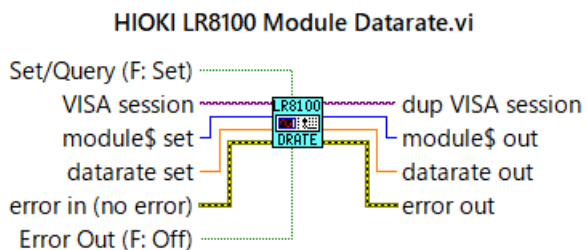
Sets and queries the number of recorded samples for external sampling.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
Extrecsamp set		Sets the number of recorded samples for external sampling. Extrecsamp set = 1 to 1000000000
Extrecsamp out		Returns the query result of the number of recorded samples for external sampling as enumerated type. Extrecsamp out = 1 to 1000000000

4-3-20. HIOKI LR8100 Module Datarate.vi

Sets and queries the data update rate for the specified module.



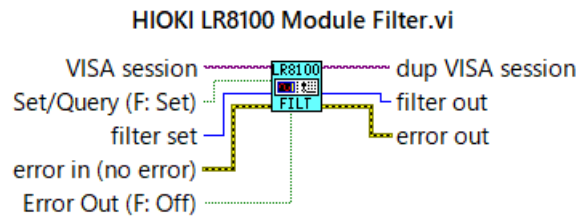
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
module set		Sets a module. module set = MODULE1 to MODULE10
datarate set		Sets the data update rate for a module. datarate set = 0 (Auto), 5.0E-3 to 1.0E+1 (sec)
module out		Returns the query result of the specified module as enumerated type. module out = MODULE1 to MODULE10
datarate out		Returns the query result of the data update rate for the specified module as numeric data type. datarate out = 0 (Auto), 5.0E-3 to 1.0E+1 (sec)

(Note)

If a value is specified that is not in the settings, and there is a range higher than the value you tried to set, it will be set to the nearest range.

4-3-21. HIOKI LR8100 Module Filter.vi

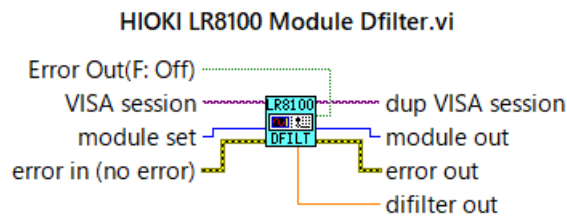
Sets and queries power frequency filter.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
filter set		Sets the power frequency filter. filter set = 50HZ, 60HZ
filter out		Returns the query result of the power frequency filter as enumerated type. filter out = 50HZ, 60HZ

4-3-22. HIOKI LR8100 Module Dfilter.vi

Queries the digital filter value for the specified module.

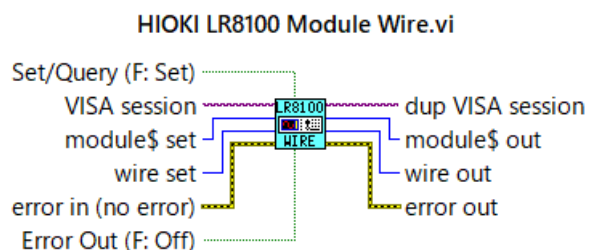


Sets the power frequency filter.
Returns the power frequency filter as character data.

Title	Data type	Description
module set		Sets a module. module set = MODULE1 to MODULE10
module out		Returns the query result of the specified module as enumerated type. module out = MODULE1 to MODULE10
dfilter out		Returns the query result of the digital filter value for the specified module as numeric data type.

4-3-23. HIOKI LR8100 Module Wire.vi

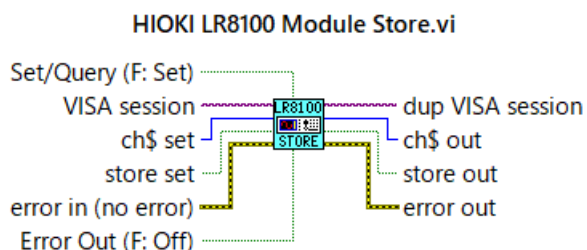
Sets and queries the disconnection detection of thermocouple in the specified module.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
module set		Sets a module. module set = MODULE1 to MODULE10
wire set		Sets the disconnection detection of thermocouple rate for a module. wire set = OFF, ON
module out		Returns the query result of the specified module as enumerated type. module out = MODULE1 to MODULE10
wire out		Returns the query result of the disconnection detection of thermocouple for the specified module as enumerated type. wire out = OFF, ON

4-3-24. HIOKI LR8100 Module Store.vi

Sets and queries measurement ON/OFF for the specified channel.



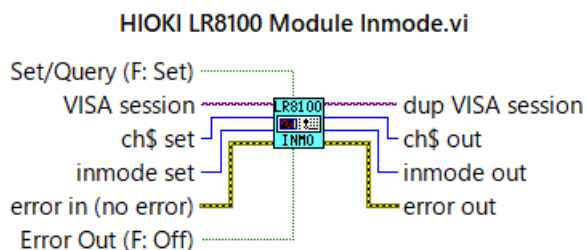
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
store set		Sets measurement ON/OFF for a channel. store set = Disable, Enable
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
store out		Returns the query result of measurement ON/OFF for the specified channel. store out = OFF, ON

(Note)

Pulse channels whose pulse input type is set to logic cannot be turned on for measurement. Also, if there is no pulse channel with the pulse input type set to logic, the logic channel cannot be turned on for measurement.

4-3-25. HIOKI LR8100 Module Inmode.vi

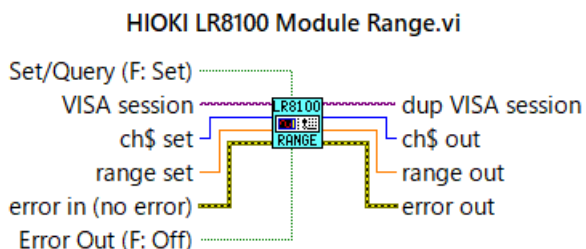
Sets and queries the input type for the specified channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30
inmode set		Sets the input type for a channel. inmode set = VOLTAGE, TC
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ set = CH1_1 to CH10_30
inmode out		Returns the query result of the input type for the specified channel as enumerated type. inmode out = VOLTAGE, TC

4-3-26. HIOKI LR8100 Module Range.vi

Sets and queries the vertical axis range for the specified channel.



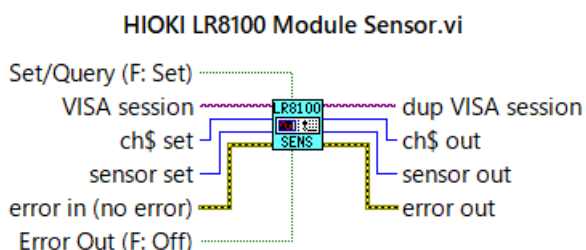
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30
range set		Sets the vertical axis range for a channel.
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30
Range out		Returns the query result of the vertical axis range for the specified module as numeric data type.

(Note)

- If a value is specified that is not in the settings, the range immediately above it, if any, will be used. When setting to voltage range 1–5V, set A=15.
- When the 100° C or 500° C range is used, the sensor for thermocouple measurement cannot be set to B.

4-3-27. HIOKI LR8100 Module Sensor.vi

Sets and queries thermocouples for temperature measurement of the specified channel.



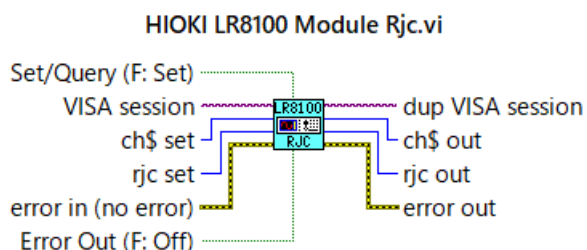
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30
sensor set		Sets the thermocouples for temperature measurement for a channel. sensor set = K, J, E, T, N, R, S, B, C
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30
sensor out		Returns the query result of the thermocouples for temperature measurement for the specified channel as enumerated type. sensor out = K, J, E, T, N, R, S, B, C

(Note)

When the 100° C or 500° C range is used, the sensor for thermocouple measurement cannot be set to B.

4-3-28. HIOKI LR8100 Module Rjc.vi

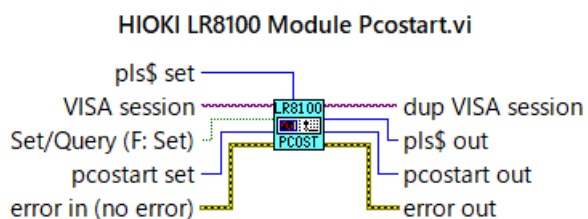
Sets and queries the contact compensation of temperature measurement for the specified channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30
rjc set		Sets the contact compensation of temperature measurement for a channel. rjc set = INT, EXT
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30
rjc out		Returns the query result of the contact compensation for temperature measurement for the specified channel as enumerated type. rjc out = INT, EXT

4-3-29. HIOKI LR8100 Module Pcostart.vi

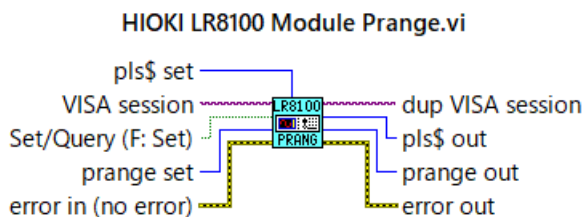
Sets and queries the start timing of integration for the specified pulse channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pcostart set		Sets the start timing of integration for a pulse channel. pcostart set = START, TRIGGER
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pcostart out		Returns the query result of the start timing of integration for the specified pulse channel as enumerated type. pcostart out = START, TRIGGER

4-3-30. HIOKI LR8100 Module Prange.vi

Sets and queries the RPM range for the specified pulse channel.



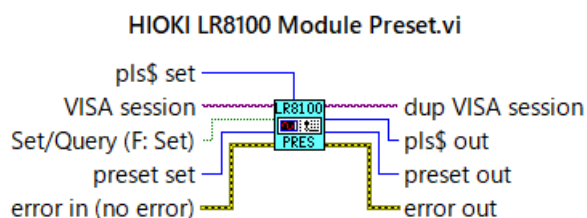
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
prange set		Sets the RPM range for a pulse channel. prange set = RPS, RPM
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
prange out		Returns the query result of the RPM range for the specified pulse channel as enumerated type. prange out = RPS, RPM






(Note)

If the pulse input type is other than rotational speed, a command error occurs.

4-3-31. HIOKI LR8100 Module Preset.vi

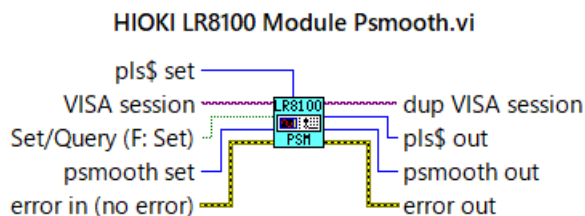
Sets and queries the reset for the specified pulse channel.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
preset set		Sets the reset for a pulse channel. preset set = OFF, ON
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
preset out		Returns the query result of the reset for the specified pulse channel as enumerated type. preset out = OFF, ON

4-3-32. HIOKI LR8100 Module Psmooth.vi

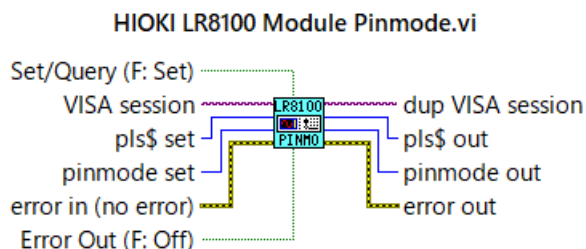
Sets and queries the pulse rotation speed smoothing for the specified pulse channel.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
psmooth set		Sets the pulse rotation speed smoothing for a pulse channel. psmooth set = 1 (OFF) to 60
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
psmooth out		Returns the query result of the pulse rotation speed smoothing for the specified pulse channel as numeric data type. psmooth out = 1 (OFF) to 60

4-3-33. HIOKI LR8100 Module Pinmode.vi

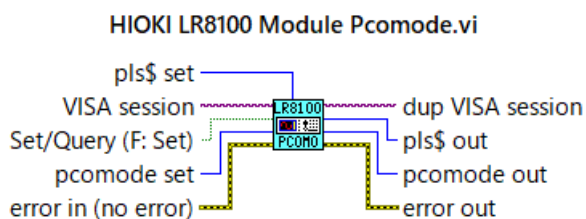
Sets and queries the input type for the specified pulse channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pinmode set		Sets the input type for a pulse channel. pinmode set = COUNT, REVOLVE, LOGIC
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pinmode out		Returns the query result of the input type for the specified pulse channel as enumerated type. pinmode out = COUNT, REVOLVE, LOGIC

4-3-34. HIOKI LR8100 Module Pcomode.vi

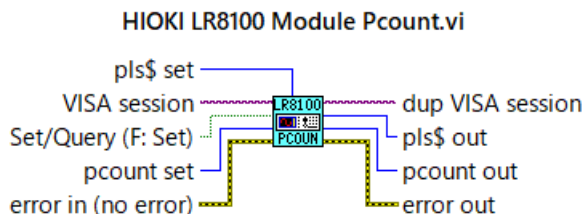
Sets and queries the type of integration for the specified pulse channel.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pcomode set		Sets the type of integration for a pulse channel. pcomode set = ADD, INST
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pcomode out		Returns the query result of the type of integration for the specified pulse channel as enumerated type. pcomode out = ADD, INST

4-3-35. HIOKI LR8100 Module Pcount.vi

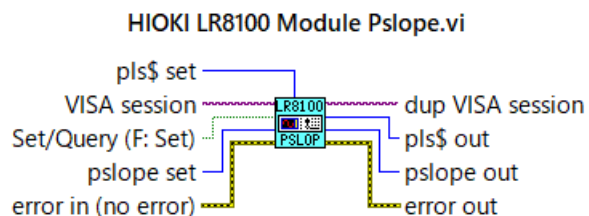
Sets and queries the number of pulses per revolution for the specified pulse channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pcount set		Sets the number of pulses per revolution for a pulse channel. pcount set = 1 to 1000
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pcount out		Returns the query result of the number of pulses per revolution for the specified pulse channel as numeric data type. pcount out = 1 to 1000

4-3-36. HIOKI LR8100 Module Pslope.vi

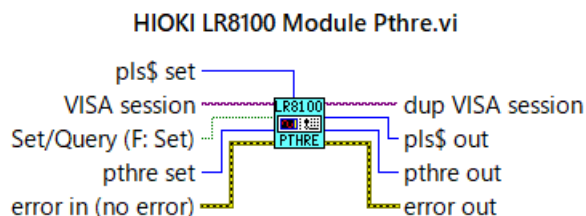
Sets and queries the slope of the specified pulse channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pslope set		Sets the slope for a pulse channel. pslope set = UP, DOWN
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pslope out		Returns the query result of the slope for the specified pulse channel as enumerated type. pslope out = UP, DOWN

4-3-37. HIOKI LR8100 Module Pthre.vi

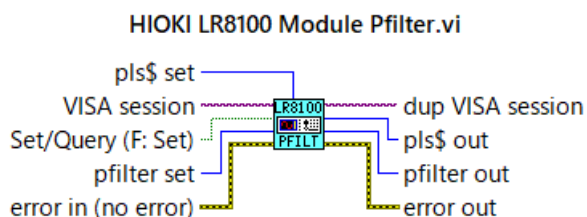
Sets and queries the threshold level of the specified pulse channel.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pthre set		Sets the threshold level for a pulse channel. pthre set = 1V, 4V
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pthre out		Returns the query result of the threshold level for the specified pulse channel as enumerated type. pthre out = 1V, 4V

4-3-38. HIOKI LR8100 Module Pfilter.vi

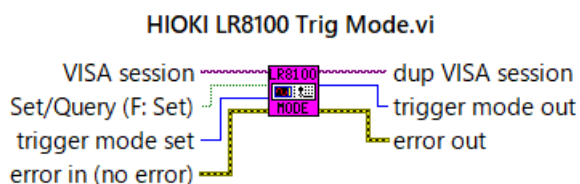
Sets and queries the range relationship for the specified pulse channel.






Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
pls\$ set		Sets a pulse channel. pls\$ set = PLS1
pfilter set		Sets the range relationship for a pulse channel. pfilter set = OFF, ON
pls\$ out		Returns the query result of the specified pulse channel as enumerated type. pls\$ out = PLS1
pfilter out		Returns the query result of the range relationship for the specified pulse channel as enumerated type. pfilter out = OFF, ON

4-3-39. HIOKI LR8100 Trig Mode.vi

Sets and queries repeat records.



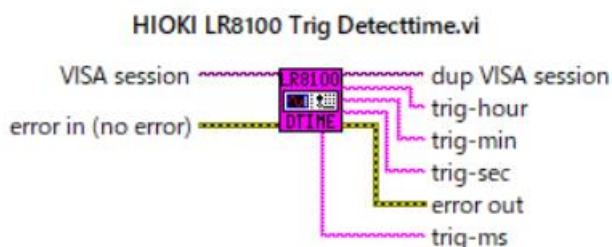
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
trigger mode set		Sets the repeat record. trigger mode set = SINGLE, REPEAT
trigger mode out		Returns the query result of the repeat record as enumerated type. trigger mode out = SINGLE, REPEAT





(Note)

Changing the setting may change the interval trigger setting.

4-3-40. HIOKI LR8100 Trig Detecttime.vi

Queries the start trigger detection time.



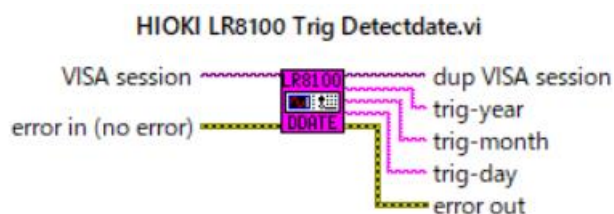
Title	Data type	Description
trig-hour		Returns the query result of the start trigger detection time (hour) as a string type. trig-hour = 0 to 23 (hour)
trig-min		Returns the query result of the start trigger detection time (minute) as a string type. trig-min = 0 to 59 (minute)
trig-sec		Returns the query result of the start trigger detection time (second) as a string type. trig-sec = 0 to 59 (second)
trig-ms		Returns the query result of the start trigger detection time (millisecond) as a string type. trig-ms = 000 to 999 (millisecond)




(Note)

- If no storage data exists, "00,00,00,000" is responded.
- If the start trigger is OFF, the measurement start time is responded.

4-3-41. HIOKI LR8100 Trig Detectdate.vi

Queries the start trigger detection time.



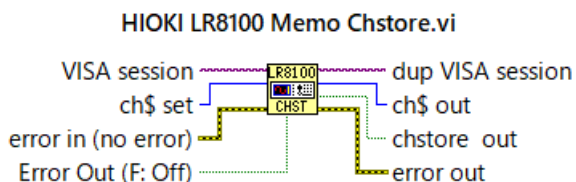
Title	Data type	Description
trig-year		Returns the query result of the start trigger detection date (year) as a string type. trig-year = 00 to 99 (year)
trig-month		Returns the query result of the start trigger detection date (month) as a string type. trig-year = 01 to 12 (month)
trig-day		Returns the query result of the start trigger detection date (day) as a string type. trig-year = 01 to 31 (day)




(Note)

- If no storage data exists, "00,00,00,000" is responded.
- If the start trigger is OFF, the measurement start time is responded.

4-3-42. HIOKI LR8100 Memo Chstore.vi

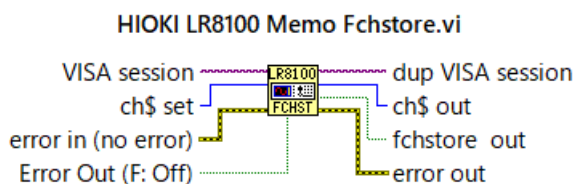
Queries the presence or absence of storage data for the specified channel.






Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
chstore out		Returns the query result for the presence or absence of storage data for the specified channel. chstore out = OFF (absence), ON (presence)

4-3-43. HIOKI LR8100 Memo Fchstore.vi

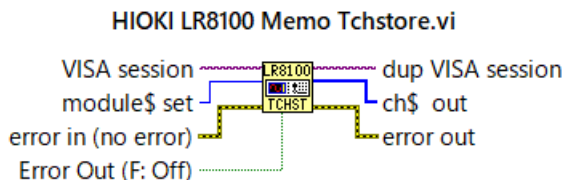
Queries the presence or absence of hold data for the specified channel.





Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
fchstore out		Returns the query result for the presence or absence of hold data for the specified channel. fchstore out = OFF (absence), ON (presence)

4-3-44. HIOKI LR8100 Memo Tchstore.vi

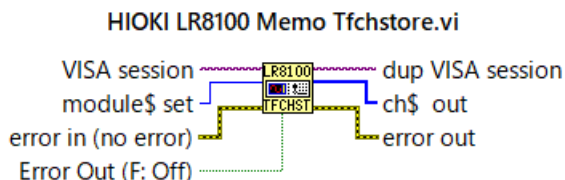
Queries the presence or absence of the channels with storage data for the specified module.





Title	Data type	Description
module\$ set		Set a module. module\$ set = MODULE1 to MODULE10, PLS&ALM, CALC1, CALC2
ch\$ out		Returns the query result of the presence or absence of the channels with storage data for the specified module as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30

4-3-45. HIOKI LR8100 Memo Tfchstore.vi

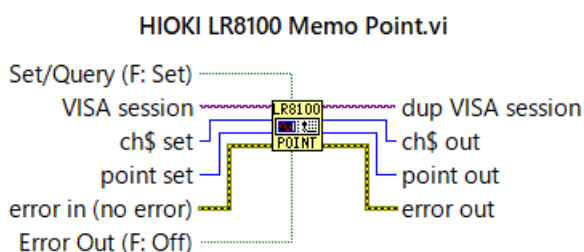
Queries the presence or absence of the channels with hold data for the specified module.








Title	Data type	Description
module\$ set		Set a module. module\$ set = MODULE1 to MODULE10, PLS&ALM, CALC1, CALC2
ch\$ out		Returns the query result of the presence or absence of the channels with hold data for the specified module as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30

4-3-46. HIOKI LR8100 Memo Point.vi

Sets and queries the output points of storage data.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
point set		Sets the output points for storage data. point set = 0 to Number of storage data -1
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
point out		Returns the query result for the output points for storage data as numeric data type. point out = 0 to Number of storage data -1

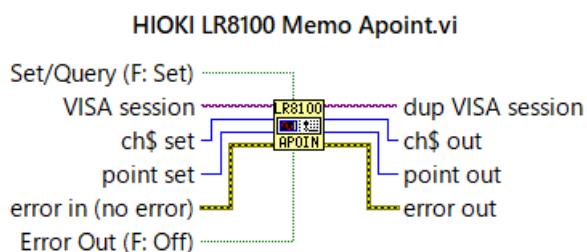
(Note)






- If there is no storage data, the output point cannot be set.
- The value that can be set by point set is smaller than the value obtained by HIOKI LR8100 Memo Maxpoint.vi

4-3-47. HIOKI LR8100 Memo Apoint.vi

Sets and queries the output points of storage data.

(When measuring data longer than the internal memory)



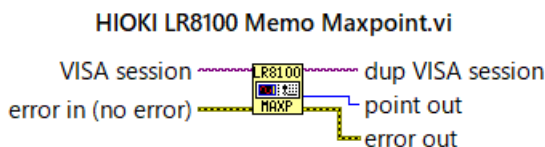
Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
point set		Sets the output points for storage data. point set = 0 to Number of storage data -1
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
point out		Returns the query result for the output points for storage data as numeric data type. point out = 0 to Number of storage data -1

(Note)

- If there is no storage data, the output point cannot be set.
- The value that can be set by point set is smaller than the value obtained by HIOKI LR8100 Memo Maxpoint.vi
- If the measurement data is longer than the internal memory, data for the specified point may not be acquired.

4-3-48. HIOKI LR8100 Memo Maxpoint.vi

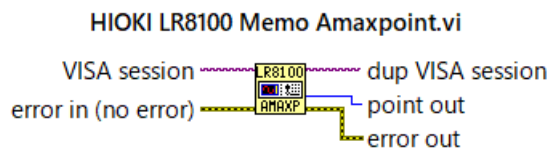
Queries the number of storage data.



Title	Data type	Description
point out		Returns the query result for the number of storage data as numeric data type. point out = Number of measured data (0 = Not saved)

4-3-49. HIOKI LR8100 Memo Amaxpoint.vi

Queries the number of storage data. (When measuring data longer than the internal memory)



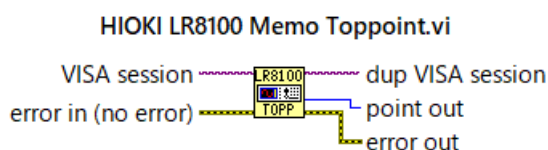
Title	Data type	Description
point out		Returns the query result for the number of storage data as numeric data type. point out = Number of measured data (0 = Not saved)

(Note)

Use when not in measurement operation.

4-3-50. HIOKI LR8100 Memo Toppoint.vi

Queries the storage head data number. (When measuring data longer than the internal memory)

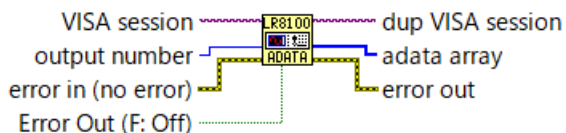


Title	Data type	Description
point out		Returns the query result for the storage head data number as numeric data type. point out = Number of measured data (0 = Not saved)

4-3-51. HIOKI LR8100 Memo Adata.vi

Queries the storage data output (ASCII) for the specified channel.

HIOKI LR8100 Memo Adata.vi



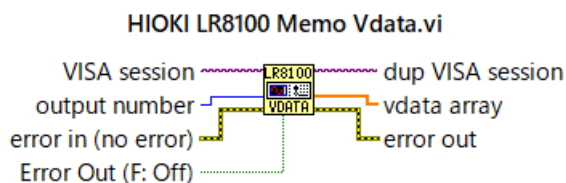
Title	Data type	Description
output number		Set the number of outputs. output number = 1 to 2000
adata array		Returns the query result of the storage data output for the specified channel as an array of numeric data types. adata array = -2147483648 to 2147483647 (Analog) adata array = 0 to 2147483647 (Integration, RPM) adata array = 0 to 1 (Logic) adata array = 0 to 15 (Alarm) adata array = Waveform calculation result (Waveform calculation)

(Note)

- Make sure that the output point is less than the number of storage data, that the channel is specified in MEMory:POINt, and that storage data is available before use.
- If the above behavior is not performed, adata array = 2147483645 is returned.

4-3-52. HIOKI LR8100 Memo Vdata.vi

Queries the storage data output (measured values) for the specified channel.



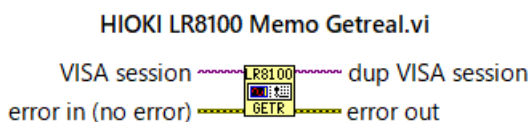
Title	Data type	Description
output number		Set the number of outputs. output number = 1 to 1000
vdata array		Returns the query result of the storage data output for the specified channel as an array of numeric data types. vdata array = measured values

(Note)

- Make sure that the output point is less than the number of storage data, that the channel is specified in MEMory:POINt, and that storage data is available before use.
- If the above behavior is not performed, vdata array = 9.99999E+99 is returned.

4-3-53. HIOKI LR8100 Memo Getreal.vi

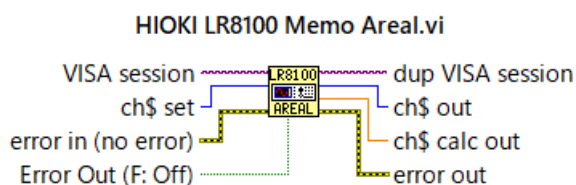
Acquires and retains all measurement channel data.



Title	Data type	Description
		No input/output terminals other than common input/output

4-3-54. HIOKI LR8100 Memo Areal.vi

Queries the final storage data output (ASCII) for the specified channel.



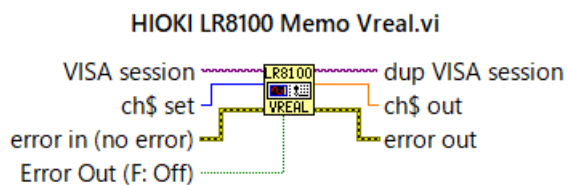
Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
ch\$ out		Returns the query result of the final storage data output for the specified channel as numeric data type. data out = -2147483648 to 2147483647 (Analog) data out = 0 to 2147483647 (Integration, RPM) data out = 0 to 1 (Logic) data out = 0 to 15 (Alarm)
ch\$ calc out		Returns the query result of the final storage data output for the specified channel as numeric data type. data out = Waveform calculation result (Waveform calculation)



(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, ch\$ out = 2147483645、ch\$ calc out = 9.99999E+99 are returned.

4-3-55. HIOKI LR8100 Memo Vreal.vi

Queries the final storage data output (measured values) for the specified channel.



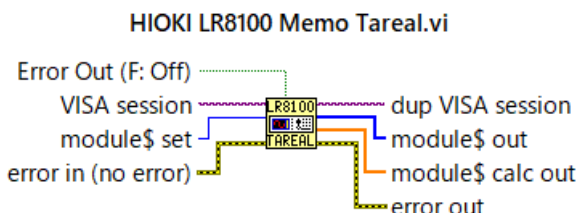
Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
ch\$ out		Returns the query result of the final storage data output for the specified channel as numeric data type. ch\$ out = measured values




(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, ch\$ out = 9.99999E+99 is returned.

4-3-56. HIOKI LR8100 Memo TAreai.vi

Queries the final storage data output (ASCII) of the measurement valid channels for the specified module.



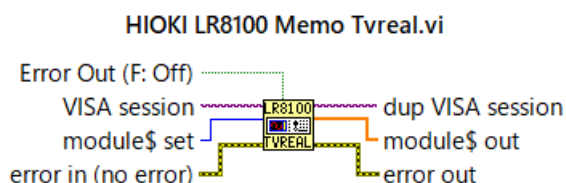
Title	Data type	Description
module\$ set		Sets a module. module\$ set = MODULE1 to MODULE10, PLS&ALM, CALC1, CALC2
module\$ out		Returns the query result of the final storage data output of the measurement valid channels for the specified module as an array of numeric data type. module out = -2147483648 to 2147483647 (Analog) module out = 0 to 2147483647 (Integration, RPM) module out = 0 to 1 (Logic) module out = 0 to 15 (Alarm)
module\$ calc out		Returns the query result of the final storage data output of the measurement valid channels for the specified module as an array of numeric data type. module\$ calc out = Waveform calculation result (Waveform calculation)



(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, module\$ out = 2147483645、module\$ calc out = 9.99999E+99 are returned.

4-3-57. HIOKI LR8100 Memo TVreal.vi

Queries the final storage data output (measured values) of the measurement valid channels for the specified module.



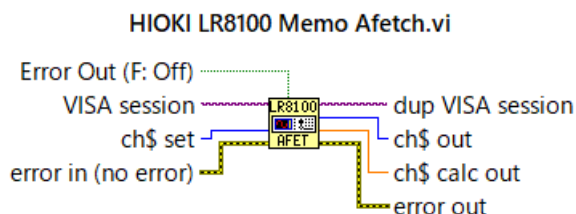
Title	Data type	Description
module\$ set		Sets a module. module\$ set = MODULE1 to MODULE10, PLS&ALM, CALC1, CALC2
module\$ out		Returns the query result of the final storage data output of the measurement valid channels for the specified module as an array of numeric data type. module\$ out = measured values

(Note)

- Make sure that in measurement, and before this command, “Memo Getreal.vi” is performed, before use.
- If the above behavior is not performed, module\$ out = 9.99999E+99 is returned.

4-3-58. HIOKI LR8100 Memo Afetch.vi

Queries the hold data output (ASCII) for the specified channel.



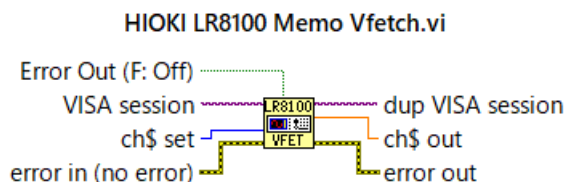
Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
ch\$ out		Returns the query result of the hold data output for the specified channel as numeric data type. data out = -2147483648 to 2147483647 (Analog) data out = 0 to 2147483647 (Integration, RPM) data out = 0 to 1 (Logic) data out = 0 to 15 (Alarm)
ch\$ calc out		Returns the query result of the hold data output for the specified channel as numeric data type. data out = Waveform calculation result (Waveform calculation)

(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, ch\$ out = 2147483645、ch\$ calc out = 9.99999E+99 are returned.

4-3-59. HIOKI LR8100 Memo Vfetch.vi

Queries hold data output (measured values) for the specified channel.



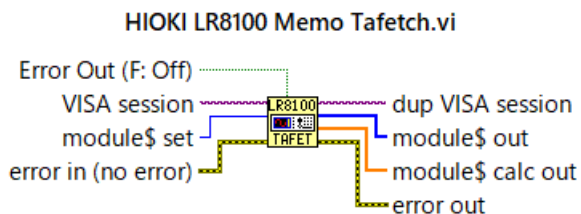
Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1, LOG, ALARM, W1 to W30
ch\$ out		Returns the query result of the hold data output for the specified channel as numeric data type. ch\$ out = measured values




(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, ch\$ out = 9.99999E+99 is returned.

4-3-60. HIOKI LR8100 Memo TAFetch.vi

Queries the hold data output (ASCII) for the specified module.



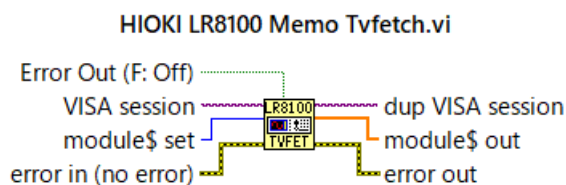
Title	Data type	Description
module\$ set		Sets a module. module\$ set = MODULE1 to MODULE10, PLS&ALM, CALC1, CALC2
module\$ out		Returns the query result of the hold data output for the specified module as an array of numeric data type. module out = -2147483648 to 2147483647 (Analog) module out = 0 to 2147483647 (Integration, RPM) module out = 0 to 1 (Logic) module out = 0 to 15 (Alarm)
module\$ calc out		Returns the query result of the hold data output for the specified module as an array of numeric data type. module\$ calc out = Waveform calculation result (Waveform calculation)



(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, a command error occurs.

4-3-61. HIOKI LR8100 Memo TVfetch.vi

Queries the hold data output (measured values) for the specified module.



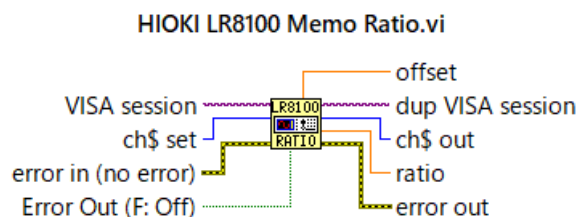
Title	Data type	Description
module\$ set		Sets a module. module\$ set = MODULE1 to MODULE10, PLS&ALM, CALC1, CALC2
module\$ out		Returns the query result of the hold data output for the specified module as an array of numeric data type. module\$ out = measured values





(Note)

- Make sure that in measurement, and before this command, "Memo Getreal.vi" is performed, before use.
- If the above behavior is not performed, a command error occurs.

4-3-62. HIOKI LR8100 Memo Ratio.vi

Queries coefficients to convert storage data into physical quantity.



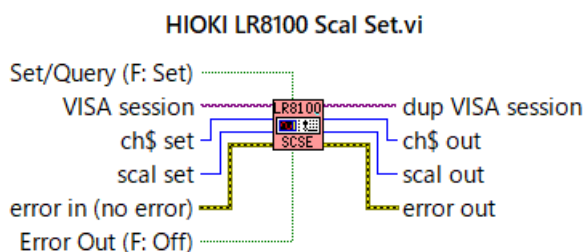
Title	Data type	Description
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30
ratio		Returns the query result of the coefficients for converting storage data into physical quantity as a numeric type.
offset		Returns the query result of the offsets for converting storage data into physical quantity as a numeric type.






(Note)

The physical quantity is calculated as $\text{ratio} * (\text{acquired value}) + \text{offset}$.

4-3-63. HIOKI LR8100 Scal Set.vi

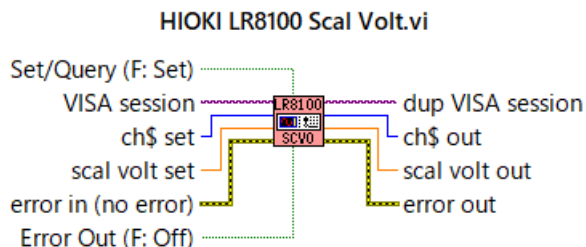
Sets and queries the scaling ON/OFF.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1
scal set		Sets the scaling ON/OFF. scal set = OFF, ENG, SCI
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1
scal out		Returns the query result of the scaling ON/OFF as enumerated type. scal out = OFF, ENG, SCI

4-3-64. HIOKI LR8100 Scal Volt.vi

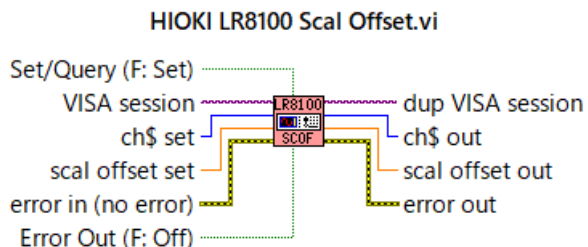
Sets and queries the scaling conversion.








Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1
scal volt set		Sets the scaling conversion. scal volt set = $-9.9999\text{E}+09$ to $+9.9999\text{E}+09$ (When pulse integration $+1.0000\text{E}-09$ to $+9.9999\text{E}+09$)
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1
scal volt out		Returns the query result of the scaling conversion as numeric data type. scal volt out = $-9.9999\text{E}+09$ to $+9.9999\text{E}+09$ (When pulse integration $+1.0000\text{E}-09$ to $+9.9999\text{E}+09$)

4-3-65. HIOKI LR8100 Scal Offset.vi

Sets and queries the scaling offset.

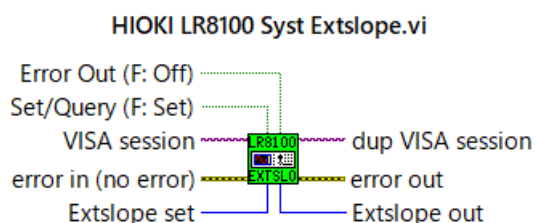





Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
ch\$ set		Sets a channel. ch\$ set = CH1_1 to CH10_30, PLS1
scal offset set		Sets the scaling offset. scal offset set = -9.9999EE+09 to +9.9999E+09
ch\$ out		Returns the query result of the specified channel as enumerated type. ch\$ out = CH1_1 to CH10_30, PLS1
scal offset out		Returns the query result of the scaling offset as numeric data type. scal offset out = -9.9999EE+09 to +9.9999E+09

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4-3-66. HIOKI LR8100 Syst Extslope.vi

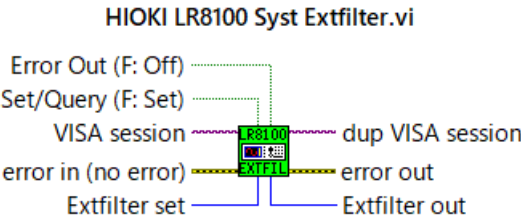
Sets and queries the slope of the external sampling and external trigger terminals.



Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
Extslope set		Sets the slope of the external sampling and external trigger terminals. Extslope set = UP, DOWN
Extslope out		Returns the query result of the slope of the external sampling and external trigger terminals as enumerated type. Extslope out = UP, DOWN

4-3-67. HIOKI LR8100 Syst Extfilter.vi

Sets and queries the filter of the external sampling and external trigger terminals.

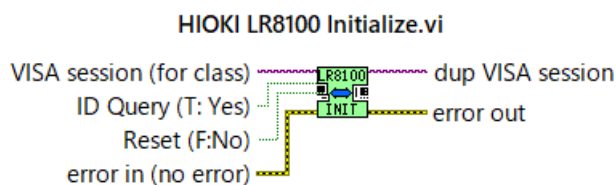


Title	Data type	Description
Set/Query (F:Set)		Switches between settings/queries. Set/Query = Set (Default), Query
Extfilter set		Sets the filter of the external sampling and external trigger terminals. Extfilter set = OFF, ON
Extfilter out		Returns the query result of the filter of the external sampling and external trigger terminals as enumerated type. Extfilter out = OFF, ON

4-4. VI other than drivers included in the program library

4-4-1. HIOKI LR8100 Initialize.vi

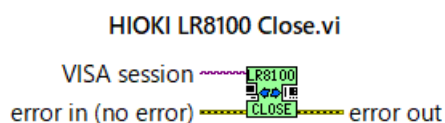
Opens a VISA session to initialize the interface and data logger to be used.



Title	Data type	Description
dup VISA session error in error out		Input/output is the same as for driver functions.
VISA session (for class)		TCP/IP TCP/IP[Number]::IP address::Port number::SOCKET
ID Query		Check the device ID. ID Query = False, True (Default)
Reset		Reset the device. Reset = False, True (Default)

4-4-2. HIOKI LR8100 Close.vi

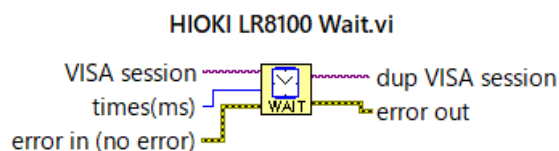
Closes the VISA session.



Title	Description
dup VISA session error in error out	Input/output is the same as for driver functions.

4-4-3. HIOKI LR8100 Wait.vi

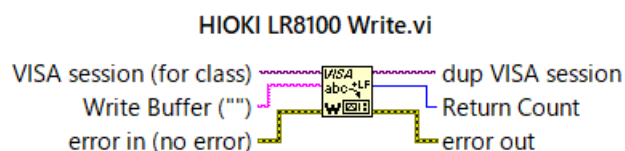
Sets the wait time.



Title	Data type	Description
times(ms)		Sets the wait time.(Unit:ms)

4-4-4. HIOKI LR8100 Write.vi

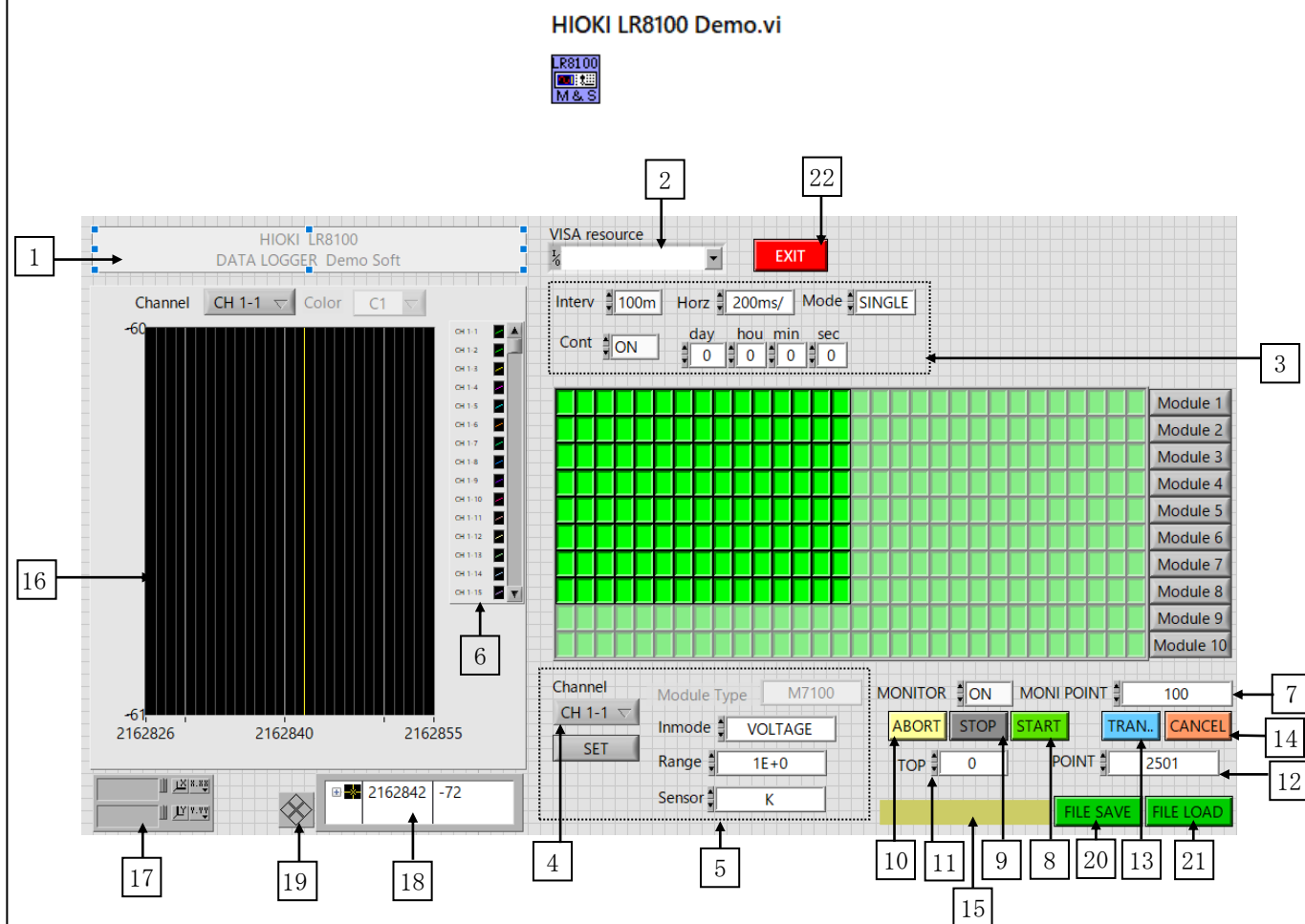
Sends the command to the instrument.



Title	Data type	Description
Write Buffer(“”)’		Sets the command string to be sent.
Return Count		Returns the actual number of bytes written.

4-4-5. HIOKI LR8100 Demo.vi

Demo program for LR8100 series data loggers.



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Number	Title	Description
1	Title	Displays the title of this software.
2	VISA resource setting	Selects TCPIP (LAN).
3	Time setting	(1) Sets the recording interval. (2) Sets the recording time.
4	Channel choice	Selects the channel.
5	Channel setting	Reads and sets channel information. (1) Channel: Specifies the display/setting channel. (2) Inmode: Displays the input type of the module. (3) Range: Displays and inputs voltage axis range. (Note) •Unit: V, ° C depends on Sensor. For details, please refer to the LR8100 Series Data Loggers Instruction Manual. •If you change the setting, click the "SET" button.
6	Graph plot control	The display format (color, thickness, etc.) can be set for each channel plot. (Note)This is a standard LabVIEW function.
7	MONITOR	Sets the graph plotting during START. MONITOR: OFF(No graph plotting during START.) MONITOR: ON(The latest data specified by MONI POINT is plotted in the graph during START.)
8	START	Performs the same operation as the buttons on the control panel of the LR8100.
9	STOP	Performs the same operation as the buttons on the control panel of the LR8100.
10	ABORT	Performs forced termination.
11	TOP	Specifies the starting point of the data to be transferred.
12	POINT	Specifies the number of data to be transferred.
13	TRANSMIT	Transfers data.
14	CANCEL	Cancels data transfer.
15	Message	Displays the execution status of the program.
16	Graph plot	Displays the measured waveform.
17	Graph display control	The display format (zoom in, zoom out, etc.) can be set for the displayed graph. (Note)This is a standard LabVIEW function.
18	Carsol display control	The information display and display format (color, point style) of the displayed cursor can be set. (Note)This is a standard LabVIEW function.
19	Carsol position control	The cursor position can be moved. (Note)This is a standard LabVIEW function.
20	FILE SAVE	Saves data. (Note)Disabled when there is no data in the graph.
21	FILE LOAD	Loads saved data.
22	EXIT	Exit this program.

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Procedures for reading data from the LR8100 series :

1. Opens HIOKI LR8100 Demo.vi.
2. Sets the TCP/IP(LAN) address.
3. Performs HIOKI LR8100 Demo.vi.
4. Sets the necessary settings for the LR8100 series Data Loggers.
5. Sets the channel to be read.
6. Presses the START button, presses the STOP button, and then presses the TRAN.... button.
7. In the demonstration program, the measured voltage values are not scaled. To obtain scaled measured voltage values, use :MEMory:VDATA? instead of :MEMory:ADATA? This will slow down the data transfer rate by a factor of 3.

(Note)

The number of data transferred in HIOKI LR8100 Demo.vi is limited to a maximum of 100001 pieces. Before executing HIOKI LR8100 Demo.vi, the response header must be set to OFF.

In case of a communication error, buttons other than "FILE LOAD," "FILE SAVE," and "EXIT" will be disabled.

If No. 15 indicates "Transmitting," all buttons other than "CANCEL" will be disabled.

When No. 15 displays "Storing," all buttons other than "STOP," "ABORT," "EXIT," and "TRANS" are disabled.

When there is no data in the graph, the "FILE SAVE" button is disabled.

To force the software to exit, press the "Ctrl" key and the "." key at the same time.

(If you want to restart the software after force-closing the software or if a VISA error occurs, close LabVIEW and then follow the steps 1 to 6 in this order.)

When acquiring data with "TRANS" during measurement, the first data number and the last data number remaining in the internal memory will be displayed at No. 15 as "Storing 0-1000".

If the first data number is not 0, the oldest data in the internal memory is being overwritten with new data. In this case, the data number specified in TOP should be the first number + a few tens of seconds. If you do not do so, the acquired data may be returned as 16-bit A/D data of 0, and the displayed waveform will appear as if swept across the bottom of the screen.

(To account for the above, this demo software adds 10 seconds of data, but if it is not enough, please increase it.)

When MONITOR is turned ON, ABORT and STOP key become ineffective, in which case, please turn MONITOR OFF.

To print a screen, open the "File" tab on the front panel screen and select "Print Window (P)".