

DOCUMENT No.	TITLE <b>LR8416 HEAT FLOW LOGGER , LR8410 WIRELESS LOGGING STATION LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>1</b>
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## 1. Summary

These drivers can change the setting of MEMORY HiLOGGER and read from MEMORY HiLOGGER. These drivers are divided into some VI according to function. In this version, these drivers cannot deal with all control commands of MEMORY HiLOGGER INTERFACE.

These drivers can control change the setting of LR8410 WIRELESS LOGGING STATION or LR8416 HEAT FLOW LOGGER or LR8400,LR8401,LR8402,LR8450 MEMORY HiLOGGER through TCP/IP(LAN) and USB[Communication Device Class(CDC)].

(USB communication uses Driver in attachment CD of LR8410,LR8416 or LR8400.)

These drivers can control change the setting of 8423 MEMORY HiLOGGER through TCP/IP(LAN).

## 2. Prerequisite condition

The following is the prerequisite condition of using these drivers

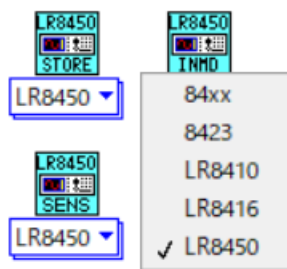
- Knows LabVIEW programming

## 3. How to use driver functions

### 3-1. Polymorphic VI

In the program library, the same functions VI for each product are summarized using polymorphic VI. When you open Polymorphic VI, VI of the currently selected model is opened under VI. To select the VI you want to use, open the selector at the bottom of VI and select the model you want to use. Please use "84xx" if there is no corresponding model in the selector. In addition to "84xx", please use the dedicated VI model.

Example: Polymorphic VI (STORE, SENS) with LR8450 selected and selector open (INMD)



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Here are the Vi summarized in each Polymorphic VI:

Polymorphic VI Name	VI in Polymorphic VI
HIOKI 84series Conf Sample.vi	HIOKI 84series Conf Sample.vi
	HIOKI 84series Conf Sample_LR8450.vi
HIOKI 84series Unit Filter.vi	HIOKI 84series Unit Filter.vi
	HIOKI 84series Unit Filter_LR8450.vi
HIOKI 84series Unit Wire.vi	HIOKI 84series Unit Wire.vi
	HIOKI 84series Unit Wire_8423.vi
	HIOKI 84series Unit Wire_LR8450.vi
HIOKI 84series Unit Store.vi	HIOKI 84series Unit Astore.vi
	HIOKI 84series Unit Astore_8423.vi
	HIOKI 84series Unit Astore_LR8410.vi
	HIOKI 84series Unit Astore_LR8450.vi
	HIOKI 84series Unit Pstore.vi
HIOKI 84series Unit Inmode.vi	HIOKI 84series Unit Inmode.vi
	HIOKI 84series Unit Inmode_8423.vi
	HIOKI 84series Unit Inmode_LR8410.vi
	HIOKI 84series Unit Inmode_LR8416.vi
	HIOKI 84series Unit Inmode_LR8450.vi
HIOKI 84series Unit Range.vi	HIOKI 84series Unit Range.vi
	HIOKI 84series Unit Range_8423.vi
	HIOKI 84series Unit Range_LR8410.vi
	HIOKI 84series Unit Range_LR8450.vi
HIOKI 84series Unit Sensor.vi	HIOKI 84series Unit Sensor.vi
	HIOKI 84series Unit Sensor_8423.vi
	HIOKI 84series Unit Sensor_LR8410.vi
	HIOKI 84series Unit Sensor_LR8450.vi
HIOKI 84series Unit Rjc.vi	HIOKI 84series Unit Rjc.vi
	HIOKI 84series Unit Rjc_8423.vi
	HIOKI 84series Unit Rjc_LR8410.vi
	HIOKI 84series Unit Rjc_LR8450.vi
HIOKI 84series Unit Rconnect.vi	HIOKI 84series Unit Rconnect.vi
	HIOKI 84series Unit Rconnect_8423.vi
	HIOKI 84series Unit Rconnect_LR8410.vi
	HIOKI 84series Unit Rconnect_LR8450.vi
HIOKI 84series Unit Rtype.vi	HIOKI 84series Unit Rtype.vi
	HIOKI 84series Unit Rtype_8423.vi
	HIOKI 84series Unit Rtype_LR8410.vi
	HIOKI 84series Unit Rtype_LR8450.vi
HIOKI 84series Unit Plslogic.vi	HIOKI 84series Unit Plslogic.vi
	HIOKI 84series Unit Plslogic_8423.vi
HIOKI 84series Unit Pinmode.vi	HIOKI 84series Unit Pinmode.vi
	HIOKI 84series Unit Pinmode_8423.vi
	HIOKI 84series Unit Pinmode_LR8450.vi

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Polymorphic VI Name	VI in Polymorphic VI
HIOKI 84series Unit Pcomode.vi	HIOKI 84series Unit Pcomode.vi
	HIOKI 84series Unit Pcomode_8423.vi
	HIOKI 84series Unit Pcomode_LR8410.vi
HIOKI 84series Unit Pcount.vi	HIOKI 84series Unit Pcount.vi
	HIOKI 84series Unit Pcount_8423.vi
	HIOKI 84series Unit Pcount_LR8410.vi
HIOKI 84series Unit Pslope.vi	HIOKI 84series Unit Pslope.vi
	HIOKI 84series Unit Pslope_8423.vi
	HIOKI 84series Unit Pslope_LR8410.vi
HIOKI 84series Unit Pthre.vi	HIOKI 84series Unit Pthre.vi
	HIOKI 84series Unit Pthre_8423.vi
	HIOKI 84series Unit Pthre_LR8410.vi
HIOKI 84series Unit Pfilter.vi	HIOKI 84series Unit Pfilter.vi
	HIOKI 84series Unit Pfilter_8423.vi
	HIOKI 84series Unit Pfilter_LR8410.vi
HIOKI 84series Disp Draw.vi	HIOKI 84series Disp Adraw.vi
	HIOKI 84series Disp Araw_LR8410.vi
	HIOKI 84series Disp Draw_LR8450.vi
	HIOKI 84series Disp Pdraw.vi
HIOKI 84series Trig Detecttime.vi	HIOKI 84series Trig Detecttime.vi
	HIOKI 84series Trig Detecttime_LR8450.vi
HIOKI 84series Memo Chstore.vi	HIOKI 84series Memo Chstore.vi
	HIOKI 84series Memo Chstore_8423.vi
	HIOKI 84series Memo Chstore_LR8410.vi
	HIOKI 84series Memo Chstore_LR8450.vi
HIOKI 84series Memo Point.vi	HIOKI 84series Memo Point.vi
	HIOKI 84series Memo Point_8423.vi
	HIOKI 84series Memo Point_LR8410.vi
	HIOKI 84series Memo Point_LR8450.vi
HIOKI 84series Memo Apoint.vi	HIOKI 84series Memo Apoint.vi
	HIOKI 84series Memo Apoint_8423.vi
	HIOKI 84series Memo Apoint_LR8410.vi
	HIOKI 84series Memo Apoint_LR8450.vi
HIOKI 84series Memo Adata.vi	HIOKI 84series Memo Adata.vi
	HIOKI 84series Memo Adata_LR8450.vi
HIOKI 84series Memo Vdata.vi	HIOKI 84series Memo Vdata.vi
	HIOKI 84series Memo Vdata_LR8450.vi
HIOKI 84series Memo Areal.vi	HIOKI 84series Memo Areal.vi
	HIOKI 84series Memo Areal_8423.vi
	HIOKI 84series Memo Areal_LR8410.vi
	HIOKI 84series Memo Areal_LR8450.vi

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Polymorphic VI Name	VI in Polymorphic VI
HIOKI 84series Memo Vreal.vi	HIOKI 84series Memo Vreal.vi
	HIOKI 84series Memo Vreal_8423.vi
	HIOKI 84series Memo Vreal_LR8410.vi
	HIOKI 84series Memo Vreal_LR8450.vi
HIOKI 84series Memo Ratio.vi	HIOKI 84series Memo Ratio.vi
	HIOKI 84series Memo Ratio_8423.vi
	HIOKI 84series Memo Ratio_LR8410.vi
	HIOKI 84series Memo Ratio_LR8416.vi
	HIOKI 84series Memo Ratio_LR8450.vi
HIOKI 84series Scal Set.vi	HIOKI 84series Scal Set.vi
	HIOKI 84series Scal Set_8423.vi
	HIOKI 84series Scal Set_LR8410.vi
	HIOKI 84series Scal Set_LR8450.vi
HIOKI 84series Scal Volt.vi	HIOKI 84series Scal Volt.vi
	HIOKI 84series Scal Volt_8423.vi
	HIOKI 84series Scal Volt_LR8410.vi
	HIOKI 84series Scal Volt_LR8450.vi
HIOKI 84series Scal Offset.vi	HIOKI 84series Scal Offset.vi
	HIOKI 84series Scal Offset_8423.vi
	HIOKI 84series Scal Offset_LR8410.vi
	HIOKI 84series Scal Offset_LR8450.vi
HIOKI Demo.vi	HIOKI 8423 Demo.vi
	HIOKI LR8400 Demo.vi
	HIOKI LR8410 Demo.vi
	HIOKI LR8416 Demo.vi
	HIOKI LR8450 Demo.vi

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### 3-2. Driver functions

Searches for the VI(driver) which deals with the control command of MEMORY HiLOGGER from program library, Connects the VISA session opened. Sets the Set/query, it is necessary to select the right parameters when performing setting. It is necessary to set header to OFF when performing querying.

All of the drivers have 2 common inputs and 2 common outputs as the following.

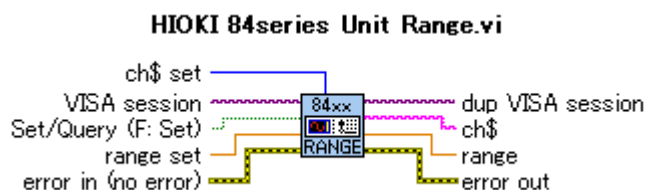
input

VISA session	on the top-left
error in (no error)	on the bottom-left

output

dup VISA session	on the top-right
error out	on the bottom-right

Example: HIOKI84series Unit Range.vi.



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#### 4. Direction for driver use

##### 4-1. Sort of Vi

The following is about drivers which are in program library.

	Name	Function / Communication command
1	HIOKI 84series IDN.vi	Queries device ID. *IDN?
2	HIOKI 84series OPT.vi	Queries device option provision. *OPT?
3	HIOKI 84series Reset.vi	Initializes the unit. *RST
4	HIOKI 84series TST.vi	Queries the result of ROM/RAM check. *TST?
5	HIOKI 84series OPC.vi	Replies with TRUE after execution is completed. *OPC *OPC?
6	HIOKI 84series WAI.vi	After the execution of the command is completed, subsequently performs the following command. *WAI
7	HIOKI 84series CLS.vi	Clears the status bytes and associated queues(except for the output queue). *CLS
8	HIOKI 84series ESR.vi	Reads out and clears the contents of the standard event status register(ESR) *ESR?
9	HIOKI 84series STB.vi	Reads the status byte and MSS bit, without performing serial polling *STB
10	HIOKI 84series ESR0.vi	Reads event status register 0 (ESR0). :ESR0?
11	HIOKI 84series Start.vi	Performs starting. (Same as the START key of the unit) :START
12	HIOKI 84series Stop.vi	Performs stopping. (Same as the STOP key of the unit) :STOP
13	HIOKI 84series Abort.vi	Aborts processing. :ABORT
14	HIOKI 84series Conf Sample.vi	Changes or queries the recording interval. :CONFigure:SAMPle A :CONFigure:SAMPle?
15	HIOKI 84series Conf Rectime.vi	Sets or queries the recording time. :CONFigure:RECTime A,B,C,D :CONFigure:RECTime?
16	HIOKI 84series Conf Tdiv.vi	Sets or queries the time axis range. (for LR8410,LR8416,LR8400,LR8401,LR8402,LR8450) :CONFigure:TDIV A :CONFigure:TDIV?



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	Name	Function / Communication command
17	HIOKI 84series Unit Filter.vi	Sets or queries input channel filter. :UNIT:FILTer A\$ :UNIT:FILTer?
18	HIOKI 84series Unit Wire.vi	Sets or queries input disconnection detection for thermocouple (tc) mode. :UNIT:WIRE A\$ :UNIT:WIRE?
19	HIOKI 84series Unit Astore.vi	Sets or queries the store enable or disable for channel data record. (for LR8400,LR8401,LR8402,LR8410,LR8416,8423) :UNIT:STORe ch\$,A\$ :UNIT:STORe? ch\$
20	HIOKI 84series Unit Store_LR8450.vi	Sets or queries the store enable or disable for channel data record. (for LR8450) :UNIT:STORe ch\$,A\$ :UNIT:STORe? ch\$
21	HIOKI 84series Unit Inmode.vi	Sets or queries the measurement mode of an input channel. :UNIT:INMDe ch\$,A\$ :UNIT:INMDe? ch\$
22	HIOKI 84series Unit Range.vi	Sets or queries the measurement range of an input channel. :UNIT:RANGe ch\$,A\$ :UNIT:RANGe? ch\$
23	HIOKI 84series Unit Sensor.vi	Sets or queries the sensor kind for thermocouple (tc) mode. :UNIT:SENSor ch\$,A\$ :UNIT:SENSor? ch\$
24	HIOKI 84series Unit Rjc.vi	Sets or queries the point of contact compensation for thermocouple (tc) mode. :UNIT:RJC ch\$,A\$ :UNIT:RJC? ch\$
25	HIOKI 84series Unit Rconnect.vi	Sets or queries the connect kind for resistance thermometer bulb (rtd) mode :UNIT:RCONnect ch\$,A\$ :UNIT:RCONnect? ch\$
26	HIOKI 84series Unit Rtype.vi	Sets or queries the resistance thermometer bulb (rtd) kind for rtd mode :UNIT:RTYPE ch\$,A\$ :UNIT:RTYPE? ch\$
27	HIOKI 84series Unit Pstore.vi	Sets or queries the store enable or disable for pulse channel data record (for LR8400,LR8401,LR8402) :UNIT:STORe ch\$,A\$ :UNIT:STORe? ch\$

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	Name	Function / Communication command
28	HIOKI 84series Unit Plslogic.vi	Sets or queries the pulse or logic (for 8423,LR8400,LR8401,LR8402,LR8450) :UNIT:PLSLogic pls\$,A\$ :UNIT:PLSLogic? pls\$
29	HIOKI 84series Unit Pinmode.vi	Sets or queries the measurement mode of an input pulse channel (for 8423,LR8400,LR8401,LR8402,LR8450) :UNIT:PINMOde pls\$,A\$ :UNIT:PINMOde? pls\$
30	HIOKI 84series Unit Pcomode.vi	Sets or queries the count mode of an input pulse channel (for 8423,LR8400,LR8401,LR8402,LR8410,LR8416) :UNIT:PCOMode pls\$,A\$ :UNIT:PCOMode? pls\$
31	HIOKI 84series Unit Pcount.vi	Sets or queries the pulse num per revolve (for 8423,LR8400,LR8401,LR8402,LR8410,LR8416) :UNIT:PCOUnt pls\$,A\$ :UNIT:PCOUnt? pls\$
32	HIOKI 84series Unit Pslope.vi	Sets or queries the pulse channel count slope (for 8423,LR8400,LR8401,LR8402,LR8410,LR8416) :UNIT:PSLOPe pls\$,A\$ :UNIT:PSLOPe? pls\$
33	HIOKI 84series Unit Pthre.vi	Sets or queries the pulse threshold level (for 8423,LR8400,LR8401,LR8402,LR8410,LR8416) :UNIT:PTHRe? pls\$ :UNIT:PTHRe pls\$,A\$
34	HIOKI 84series Unit Pfilter.vi	Sets or queries the pulse channel filter. (for LR8400,LR8401,LR8402,LR8410,LR8416) :UNIT:PFILTer pls\$,A\$ :UNIT:PFILTer? pls\$
35	HIOKI 84seriesUnit Clamp_LR8410.vi	Sets or queries the clamp sensor (for LR8410,LR8416) :UNIT:CLAMp ch\$,A\$ :UNIT:CLAMp? ch\$
36	HIOKI84seriesUnit Cmode_LR8410.vi	Sets or queries the clamp mode (for LR8410,LR8416) :UNIT:CMOde ch\$,A\$ :UNIT:CMOde? ch\$
37	HIOKI84series Unit Czero_LR8410.vi	Sets or queries the clamp zero suppress (for LR8410,LR8416) :UNIT:CZEro ch\$,A\$ :UNIT:CZEro? ch\$
38	HIOKI 84series Disp Adraw.vi	Sets or queries waveform display color (for LR8400,LR8401,LR8402,LR8410,LR8416) :DISPlay:DRAWing ch\$,A\$ :DISPlay:DRAWing? ch\$

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	Name	Function / Communication command
39	HIOKI 84series Disp Pdraw.vi	Sets or queries pulse waveform display color (for LR8400,LR8401,LR8402) :DISPlay:PDRAWing pls\$,A\$ :DISPlay:PDRAWing? pls\$
40	HIOKI 84series DispDraw.vi	Sets or queries waveform display color (for LR8450) :DISPlay:DRAWing ch\$,A\$ :DISPlay:DRAWing? ch\$
41	HIOKI 84series Trig Mode.vi	Sets or queries trigger mode :TRIGger:MODE A\$ :TRIGger:MODE?
42	HIOKI 84series Trig Detecttime.vi	Sets or queries the time point for trigger detection :TRIGger:DETECTTime A,B,C :TRIGger:DETECTTime?
43	HIOKI 84series Trig Detectdate.vi	Sets or queries the date for trigger detection :TRIGger:DETECTDate A,B,C :TRIGger:DETECTDate?
44	HIOKI 84series Memo Chstore.vi	Queries stored record data for each channel :MEMory:CHSTore? ch\$
45	HIOKI 84series Memo Point.vi	Sets or queries the point in memory for input/output :MEMory:POINt ch\$,A :MEMory:POINt?
46	HIOKI 84series Memo Apoint.vi	Sets or queries the point in memory for input/output when longer data is stored than the inside memory) :MEMory:APOINt ch\$,A :MEMory:APOINt?
47	HIOKI 84series Memo Maxpoint.vi	Queries the number of data samples stored :MEMory:MAXPoint?
48	HIOKI 84series Memo Amaxpoint.vi	Queries the number of data samples stored. (when longer data is stored than the inside memory) :MEMory:AMAXPoint?
49	HIOKI 84series Memo Toppoint.vi	Queries the top of data samples stored (when longer data is stored than the inside memory) :MEMory:TOPPoint?
50	HIOKI 84series Memo Adata.vi	Outputs stored data :MEMory:ADATa B,C,... :MEMory:ADATa? A
51	HIOKI 84series Memo Vdata.vi	Outputs measured data from memory :MEMory:VDATa B,C,... :MEMory:VDATa? A
52	HIOKI 84series Memo Getreal.vi	Captures real time data :MEMory:GETReal
53	HIOKI 84series Memo Areal.vi	Outputs real time data (in ASCII) :MEMory:AREAI? ch\$

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	Name	Function / Communication command
54	HIOKI 84series Memo Vreal.vi	Outputs real time data (measured values). :MEMory:VREAL? ch\$
55	HIOKI 84series Memo Ratio.vi	Outputs ratio and offset
56	HIOKI 84series Scal Set.vi	Sets and queries the scaling kind :SCALing:SET ch\$,A\$ :SCALing:SET? ch\$
57	HIOKI 84series Scal Volt.vi	Sets and queries the scaling conversion value :SCALing:VOLT ch\$,A :SCALing:VOLT? ch\$
58	HIOKI 84series Scal Offset.vi	Sets and queries the scaling offset :SCALing:OFFSet ch\$,A :SCALing:OFFSet? ch\$

The following is about other than the drivers which are in program library.



	Name	Function
1	HIOKI 84series Initialize.vi	Opens the VISA session, Initializes the interface or the MEMORY HiLOGGER.
2	HIOKI 84series Close.vi	Closes the VISA session.
3	Wait.vi	Sets the waiting time
4	Write.vi	Sends the command to the instrument.
5	HIOKI LR8400 DEMO.vi	It is a demo program for LR8400 MEMORY HiLOGGER
6	HIOKI LR8410 DEMO.vi	It is a demo program for LR8410 WIRELESS LOGGING STATION
7	HIOKI LR8416 DEMO.vi	It is a demo program for LR8416 HEAT FLOW LOGGER
8	HIOKI 8423 DEMO.vi	It is a demo program for 8423 MEMORY HiLOGGER
9	HIOKI LR8450 DEMO.vi	It is a demo program for LR8450 MEMORY HiLOGGER

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## 4-2. The common input and common output of drivers

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


### 4-2-1. The common input of driver.

Name	Data type	Explanation
VISA Session		VISA session
error in (no error)		The input of error( refer to the manual of LabVIEW to get details). Initialized value: no error.

### 4-2-2. The common output of driver

Name	Data type	Explanation
dup VISA Session		The copy of VISA session.
error out		The output of error( refer to the manual of LabVIEW to get details).

### 4-2-3. The common output of LR8450 driver

Name	Data type	Explanation
Error Out		Prints the result of reading the standard event status register to the error out's output. For details, refer to the communication command instruction in the attached CD of the LR8450. Initial value: Off

\* In LR8450 VI, the data type of the output is output with the same data type as the input.

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### 4-3. Details of VI

#### 4-3-1. HIOKI 84series IDN.vi

Queries device ID.



Name	Data type	Explanation
Instrument ID		The result of querying the device ID *

- \* First field: Manufacturer's name
- Second field: Model name
- Third field: Serial number
- Fourth field Software version

Reference command (the 8423.)

(1) \*IDN? --- Queries device ID.

Syntax (query) \*IDN?  
(response) HIOKI, 8423, 0, V 1.00  
                  ^^^^ ^^^ ^ ^^^^^

1.    2.    3.    4.

Note

1. First field Manufacturer's name
2. Second field Model name
3. Third field Serial number (not used: 0)
4. Fourth field Software version

Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(1) \*IDN? --- Queries device ID.

Syntax (query) \*IDN?  
(response) HIOKI, LR8400, 100312345, V 1.00  
                  ^^^^ ^^^^^ ^^^^^ ^^^^^

1.    2.    3.    4.

Note

1. First field Manufacturer's name
2. Second field Model name
3. Third field Serial number
4. Fourth field Software version

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#### 4-3-2. HIOKI 84series OPT.vi

Queries device option provision.



Name	Data type	Explanation
Option		The result of querying the device option provision *

#### \* 8423 (return unit kind for each unit)

0=not present

1= 8948 Voltage/Temp Unit

2= 8996 Digital/Pulse Unit

3= 8949 Universal Unit

4= 8997 Alarm Unit

#### \*LR8400, LR8401, LR8402 (return unit kind for each unit)

0=not present

1= LR8500 Voltage/Temp Unit

2= LR8501 Universal Unit

#### \*LR8410, LR8416 (return unit kind for each unit)

0=not present

1= LR8510 Wireless Voltage/Temp Unit

2= LR8511 Wireless Universal Unit

3= LR8512 Wireless Pulse Logger

4= LR8513 Wireless Clamp Logger

5= LR8514 Wireless Humidity Logger

6= LR8515 Wireless Voltage/Temp Logger

7= LR8520 Wireless Fungal Logger

#### \*LR8450 (return unit kind for each unit)

0=not present

1= U8550 Voltage/Temp Unit

2= U8551 Universal Unit

3= U8552 Voltage/Temp Unit

4= U8553 High Speed Voltage Unit

5= U8554 Strain Unit

6= LR8530 Wireless Voltage/Temp Unit

7= LR8531 Wireless Universal Unit

8= LR8532 Wireless Voltage/Temp Unit

9= LR8533 Wireless High Speed Voltage Unit

10= LR8534 Wireless Strain Unit

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Reference command (the 8423 command.)

(2) \*OPT? --- Queries device option provision.

Syntax (query) \*OPT?

(response) A1,A2,A3,A4,A5,A6,A7,A8<NR1>(8423) A=0 to 4

Explanation Whether or not input channel present is returned as an NR1 numerical value.

Reference command (the LR8400,LR8401,LR8402 command.)

(2) \*OPT? --- Queries device option provision.

Syntax (query) \*OPT?

(response) A1,A2,A3,A4<NR1> A=0 to 2

Explanation Whether or not input channel present is returned as an NR1 numerical value.

Reference command (the LR8410,LR8416 command.)

(2) \*OPT? --- Queries device option provision.

Syntax (query) \*OPT?

(response) A1,A2,A3,A4,A5,A6,A7<NR1> A=0 to 7

Explanation Whether or not input channel present is returned as an NR1 numerical value.

Reference command (the LR8450 command.)

(2) \*OPT? --- Queries device option provision.

Syntax (query) \*OPT?

(response) A1,A2,A3,A4,A5,A6,A7,A8,A9,A10,A11<NR1> A=0 to 10

Explanation Whether or not input channel present is returned as an NR1 numerical value.



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#### 4-3-3. HIOKI 84series Reset.vi

Initializes the unit.

##### HIOKI 84series Reset.vi



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(1) \*RST --- Device initial setting.

Syntax (command) \*RST

Explanation Initializes the unit (same as system reset).

Note It does not clear USB,LAN related items.  
(the event registers, the enable registers, the input buffer and the output queue)  
Time is required to the end of a \*RST command.  
Please send the next command after wait for the completion  
of an initialization and send \*OPC? after \*RST, in the case  
that you want to send the next command.

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#### 4-3-4. HIOKI 84series TST.vi

Queries the result of ROM/RAM check.

##### HIOKI 84series TST.vi



Name	Data type	Explanation
Answer	<b>I32</b>	The result of ROM/RAM check.  Output:  0: normal  1: failure

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(2) \*TST? --- Queries the result of the ROM/RAM check.

Syntax (query) \*TST?  
(response) A <NR1>  
A = 0, 1  
0: normal  
1: failure

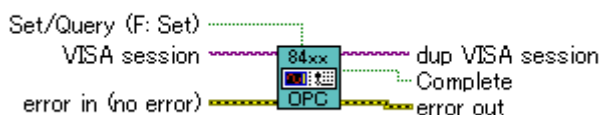
Explanation The result of the ROM/RAM check of the unit is returned as an NR1 numerical value.

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#### 4-3-5. HIOKI 84series OPC.vi

Sets the LSB of SESR or replies with TRUE after execution is completed.

##### HIOKI 84series OPC.vi



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function. Valid range; False(=set: Default), True(=Query)
Complete		The result of querying Output range: False(=All action has not been completed during execution, or error) True(=All action has been completed.)

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(1) \*OPC --- After all action has been completed during execution, sets the LSB (bit 0) of SESR (the standard event status register).

Syntax (command) \*OPC

Explanation When the command preceding the \*OPC command completes execution, the LSB of SESR is set.

Example A\$;B\$;\*OPC;C\$  
(After the execution of the commands A\$ and B\$ is completed, the LSB of SESR is set.)

(2) \*OPC? --- After execution is completed, replies with ASCII [1].

Syntax (query) \*OPC?  
(response) 1

Explanation When the command preceding the \*OPC command completes execution, the response of ASCII [1] is made.

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#### 4-3-6. HIOKI 84series WAI.vi

After the execution of the command is completed, subsequently performs the following command.



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(3) \*WAI --- After the execution of the command is completed, subsequently performs the following command.

Syntax (command) \*WAI

Example A\$;B\$;\*WAI;C\$

The command C\$ following \*WAI is not executed until the execution of the commands A\$ and B\$ is completed.

Note Please do not use it for the watch of the start processing when the record time continuousness is turning on.

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4-3-7. HIOKI 84series CLS.vi

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



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(1) \*CLS --- Clears the status byte and associated queues  
(except for the output queue).

Syntax (command) \*CLS

Explanation This instruction clears the event register associated  
with each bit of the status byte register.

It also clears the status byte register.

Note Because it does not clear the output queue, it has no  
effect upon bit 4 (MAV) of the status byte.

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#### 4-3-8. HIOKI 84series ESR.vi

Reads out and clears the contents of the standard event status register(ESR)



Name	Data type	Explanation
Setted Bits		The result(bit array) of querying the SESR Output range: False(=0) True(=1)
Output Value		The result(value) of querying the SESR Output range: 0 - 255

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(2) \*ESR? --- Reads out and clears the contents of the standard event status register (SESR).

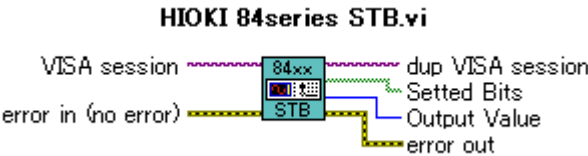
Syntax (query) \*ESR?  
(response) A <NR1>

Explanation The contents of SESR are returned as an NR1 numerical value.

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#### 4-3-9. HIOKI 84series STB.vi

Reads the status byte and MSS bit, without performing serial polling.



Name	Data type	Explanation
Setted Bits	<span style="border: 1px solid green; padding: 2px;">[TF]</span>	The result(bit array) of querying the status byte and MSS Output range: False(=0) True(=1)
Output Value	<span style="border: 1px solid blue; padding: 2px;">I32</span>	The result(value) of querying the status byte and MSS Output range: 0 – 255

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(3) \*STB? --- Reads the status byte and MSS bit, without performing serial polling.

Syntax           (query)       \*STB?  
                  (response)   A <NR1>  
                                  A = 0 to 255

Explanation   This is the same as reading out the status byte with serial polling.

Note            Bit 6 is not RQS, but is MSS.

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#### 4-3-10. HIOKI 84series ESR0.vi

Reads event status register 0 (ESR0).



Name	Data type	Explanation
Setted Bits		The result(bit array) of querying the ESR0 Output range: False(=0) True(=1)
Output Value		The result(value) of querying the ESR0 Output range: 0 - 255

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450command.)

(4) :ESR0? --- Reads event status register 0 (ESR0).

Syntax (query) :ESR0?  
(response) A <NR1>  
A = 0 to 255

Explanation The contents of ESR0 are returned as an NR1 numerical value, and ESR0 is cleared.



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#### 4-3-11. HIOKI 84series Start.vi

Performs starting. (Same as the START key of the unit)

##### HIOKI 84series Start.vi



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450command.)

(1) Performs starting.

Syntax (command) :STARTt

Explanation START waveform sampling.  
Starts waveform sampling operation.

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#### 4-3-12. HIOKI 84series Stop.vi

Performs stopping. (Same as the STOP key of the unit)



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

#### (2) Performs stopping.

Syntax (command) :STOP

Explanation STOP waveform sampling.

Terminates at the instant that waveform sampling operation is completed.

Note :STOP command after it did the measurement for record time, when record time is except for a continuation, when you implement it 1 time it stops. It does not stop at the time of a continuation.:STOP command it stops when record time was implemented 2nd :STOP at the time of except for a continuation and also continuation, when you implement it twice.

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4-3-13. HIOKI 84series Abort.vi  
Aborts processing.



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402,LR8410,LR8416,LR8450command.)

(3) Aborts processing.

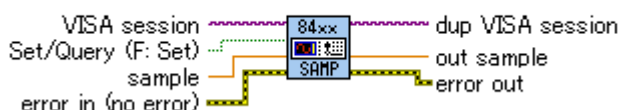
Syntax (command) :ABORT  
Explanation Force STOP waveform sampling. Terminates even if waveform sampling operation is not yet completed.  
Note :ABORT command transmission after, please do so that you send the next command, after you wait for more than 0.2 seconds.

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#### 4-3-14. HIOKI 84series Conf Sample.vi

Changes or queries the recording interval.

##### HIOKI 84series Conf Sample.vi



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function. Valid range; False(=set: Default), True(=Query)
sample set		Sets the numerical value of the recording interval
sample		The result of querying the recording interval

#### Reference command (the 8423 command.)

##### (3) Sets and queries the recording interval (fast).

Syntax (command) :CONFigure:SAMPle A  
(query) :CONFigure:SAMPle?  
(response) A<NR3>

Explanation Sets the recording interval (fast) to a numerical value (unit seconds).  
Returns the currently set value of the recording interval (fast) as an NR3 numerical value.

(If an attempt is made to set the time axis range to a non-permitted value, and there is a range above that value, that range will be selected.)

(10ms=0.01, 20ms=0.02, 50ms=0.05

100ms=0.1, 200ms=0.2, 500ms=0.5

1s=1, 2s=2, 5s=5

10s=10, 20s=20,30s=30

1min=60, 2min=120, 5min=300

10min=600, 20min=1200, 30min=1800

1h=3600)

Example :CONFigure:SAMPle +100.0E-3

Sets the recording interval (fast) to 100ms.

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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(1) Sets and queries the recording interval.

Syntax(the LR8400, LR8401, LR8402)

(command) :CONFigure:SAMPle A

(query) :CONFigure:SAMPle?

(response) A<NR3>

A=1.0E-2 to 3.6E+3

Syntax(the LR8410, LR8416)

(command) :CONFigure:SAMPle A

(query) :CONFigure:SAMPle?

(response) A<NR3>

A=1.0E-1 to 3.6E+3

Syntax(the LR8450)

(command) :CONFigure:SAMPle A

(query) :CONFigure:SAMPle?

(response) A<NR3>

A=1.0E-3 to 3.6E+3

Explanation Sets the recording interval to a numerical value (unit seconds).

Returns the currently set value of the recording interval

as an NR3 numerical value.

(If an attempt is made to set the time axis range to a non-permitted value, and there is a range above that value, that range will be selected.)

(1ms=0.001, 2ms=0.002, 5ms=0.005

10ms=0.01, 20ms=0.02, 50ms=0.05

100ms=0.1, 200ms=0.2, 500ms=0.5

1s=1, 2s=2, 5s=5

10s=10, 20s=20,30s=30

1min=60, 2min=120, 5min=300

10min=600, 20min=1200, 30min=1800, 1h=3600)

Example :CONFigure:SAMPle +100.0E-3

Sets the recording interval to 100ms.

Note(the LR8400, LR8401, LR8402)

When either of CH2\_1 to CH2\_15 is turning on, the recording interval cannot be set to 10ms.

When either of CH3\_1 to CH4\_15 is turning on, the recording interval cannot be set to 10ms and 20ms.

When disconnection detection is ON, and either of CH2\_1 to CH2\_15 is turning on, and the recording interval are set to 20ms, disconnection detection is changed to turning off.

When disconnection detection is ON, and either of CH3\_1 to CH4\_15 is turning on, and the recording interval are set to 50ms, disconnection detection is changed to turning off.

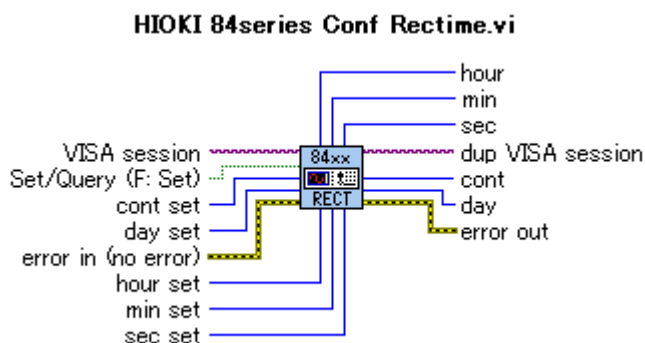
Note(the LR8410, LR8416)

The setting of time axis, recording time, pre-trigger, auto save, division time, and calculation division time might be limited by a set value of interval.

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#### 4-3-15. HIOKI 84series Conf Rectime.vi

Sets or queries the recording time.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function. Valid range; False(=set: Default), True(=Query)
cont set		Sets the numerical value of the continuous recording
day set		Sets the numerical value of the recording day
hour set		Sets the numerical value of the recording hour
min set		Sets the numerical value of the recording min
sec set		Sets the numerical value of the recording sec
cont		The result of querying the numerical value of the continuous recording
day		The result of querying the numerical value of the recording day
hour		The result of querying the numerical value of the recording hour
min		The result of querying the numerical value of the recording min
sec		The result of querying the numerical value of the recording sec

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Reference command (the 8423 command.)

(2) Sets and queries the recording time

Syntax (command) :CONFigure:RECTime A,B,C,D  
(query) :CONFigure:RECTime?  
(response) A,B,C,D

A=day :0 to 999(day)  
B=hour:0 to 23(hour)  
C=min :0 to 59(min)  
D=sec :0 to 59(sec)  
day,hour,min,sec<NR1>  
0,0,0,0=cont

Explanation Sets the recording time to a numerical value.  
Returns the currently set value of the recording time  
as an NR1 numerical value.

Example :CONFigure:RECTime 0,0,0,10  
Sets the recording time to 10sec.

Reference command (the LR8400,LR8401,LR8402、LR8410,LR8416、LR8450 command.)

(3) Sets and queries the recording time

Syntax (command) :CONFigure:RECTime A, B, C, D  
(query) :CONFigure:RECTime?  
(response) A, B, C, D

A=day :0 to 500(day)  
B=hour:0 to 23(hour)  
C=min :0 to 59(min)  
D=sec :0 to 59(sec)  
day, hour,min, sec<NR1>  
0, 0, 0, 0=cont

Explanation Sets the recording time to a numerical value.  
Returns the currently set value of the recording time  
as an NR1 numerical value.

Example :CONFigure:RECTime 0, 0, 0, 10  
Sets the recording time to 10sec.

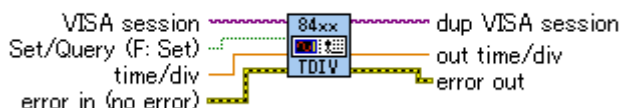
Note The setting of recording time be limited by a set value of interval.  
Note The setting of recording time might be limited by a set value of interval.

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#### 4-3-16. HIOKI 84series Conf Tdiv.vi

Sets or queries the time axis range.

##### HIOKI 84series Conf Tdiv.vi



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function. Valid range; False(=set: Default), True(=Query)
time/div		Sets the numerical value of the axis range (unit: s) *
out time/div		The result of querying the time axis range (unit: s)

\* The setting of time axis might be limited by a set value of interval.

Reference command (the LR8400,LR8401,LR8402, LR8410,LR8416, LR8450 command.)

#### (2) Sets and queries the time axis range

Syntax(the LR8400, LR8401, LR8402)

(command) :CONFigure:TDIV A  
(query) :CONFigure:TDIV?  
(response) A<NR3> A=1.00E-01 to 8.64E+04

Syntax(the LR8410, LR8416)

(command) :CONFigure:TDIV A  
(query) :CONFigure:TDIV?  
(response) A<NR3> A=2.00E-01 to 8.64E+04

Syntax(the LR8450)

(command) :CONFigure:TDIV A  
(query) :CONFigure:TDIV?  
(response) A<NR3> A=2.00E-03 to 8.64E+04

Explanation Sets the time axis range to a numerical value (unit seconds).

Returns the currently set value of the time axis range as an NR3 numerical value.

(If an attempt is made to set the time axis range to a non-permitted value, and there is a range above that value, that range will be selected.)  
(Time axis range is possible only bigger setting than a recording interval.)

(2ms=0.002, 5ms=0.005, 10ms=0.01, 20ms=0.02, 50ms=0.05  
100ms=0.1, 200ms=0.2, 500ms=0.5, 1s=1, 2s=2, 5s=5, 10s=10, 20s=20, 30s=30  
1min=60, 2min=120, 5min=300, 10min=600, 20min=1200, 30min=1800  
1h=3600, 2h=7200, 5h=18000, 10h=36000, 12h=43200, 1d=86400)

Example :CONFigure:TDIV +1.0E+0  
Sets the time axis range to 1s.

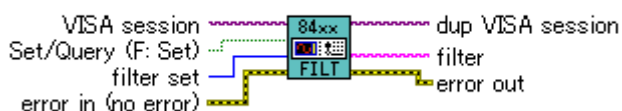





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#### 4-3-17. HIOKI 84series Unit Filter.vi

Sets or queries input channel filter.

##### HIOKI 84series Unit Filter.vi



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
filter set		Specifies the input channel filter Valid range: 0 (=OFF: Default), 1 (=50HZ), 2(=60HZ)
filter		The result of querying the input channel filter

Reference command (the 8423,LR8400,LR8401,LR8402, LR8410,LR8416,LR8450 command.)

(3) Sets and queries the input channel filter (fast).

Syntax (command) :UNIT:FILTer A\$  
(query) :UNIT:FILTer?  
(response) A\$  
A\$=OFF,50HZ,60HZ

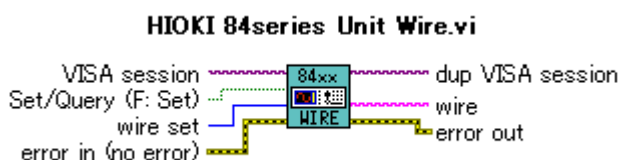
Explanation Sets the input channel filter (fast).  
Returns the input channel filter (fast) as character data.




Example :UNIT:FILTer 50HZ  
Sets the input channel filter (fast) to 50HZ.

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#### 4-3-18. HIOKI 84series Unit Wire.vi

Sets or queries input disconnection detection for tc mode.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
Wire set		Specifies the disconnection detection for tc mode Valid range: 0 (=OFF: Default), 1 (=ON)
wire		The result of querying the disconnection detection for tc mode

#### \*8423

vi has a terminal to set and output CH.

This command can be used with 8949 universal unit and 8948 Voltage and Temp unit.

#### \*LR8400,LR8401,LR8402

When the recording interval is 10ms, disconnection detection cannot turning on.

When the recording interval is 20ms, and either of CH2\_1 to CH2\_15 is turning on,  
disconnection detection cannot turning on.

When the recording interval is 50ms, and either of CH3\_1 to CH4\_15 is turning on,  
disconnection detection cannot turning on.

#### \*LR8410,LR8416

When the recording interval is 100ms, disconnection detection cannot turning on.

#### \*LR8450

vi has a terminal to set and output UNIT.

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Reference command (the 8423,LR8400,LR8401,LR8402, LR8410,LR8416,LR8450command.)

(8) Sets and queries the disconnection detection for tc mode.

Syntax(the 8423)

```
(command) :UNIT:WIRE unit$,ch$,A$
(query)    :UNIT:WIRE? unit$,ch$
(response) unit$,ch$,A$
           unit$=UNIT1-UNIT8
           ch$=CH1-CH15
```

Syntax(the LR8400, LR8401, LR8402, LR8410, LR8416)

```
(command) :UNIT:WIRE A$
(query)    :UNIT:WIRE?
(response) A$           A$=OFF, ON
           unit$=UNIT1-UNIT8
           ch$=CH1-CH15
```

Syntax(LR8450)

```
(command) :UNIT:WIRE unit$
(query)    :UNIT:WIRE? unit$
(response) unit$, A$
           unit$ = UNIT1 to UNIT4,REMOTE1 to REMOTE7 A$=OFF,ON
```

Explanation Sets the disconnection detection.

Returns the current disconnection detection as character data.

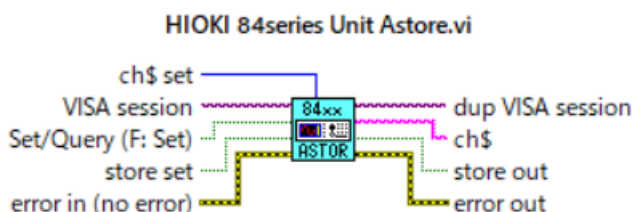
Example :UNIT:WIRE ON

Sets the disconnection detection to on.

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#### 4-3-19. HIOKI 84series Unit Astore.vi

Sets or queries the store enable or disable for channel data record.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range: :0(=CH1_1) -59(=CH4_15) (LR8410,LR8416) Valid range: :0(=CH1_1) -104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) -119(=UNIT8,CH15)
store set		Specifies the store enable or disable for channel data record
ch\$		Specified channel
store out		The result of querying the store enable or disable for channel data record

This Vi is included in Polymorphic Vi, HIOKI 84series Unit Store.vi.

#### \* LR8400, LR8401, LR8402

When recording interval is 10ms and either of CH2\_1 to CH2\_15 is turning on, the recording interval change to 20ms.

When recording interval is 10ms, 20ms and either of CH3\_1 to CH4\_15 is turning on, the recording interval change to 50ms.

When disconnection detection is ON, and the recording interval is 20ms, and either of CH2\_1 to CH2\_15 is turning on, disconnection detection is changed to turning off.

When disconnection detection is ON, and the recording interval is 50ms, and either of CH3\_1 to CH4\_15 is turning on, disconnection detection is changed to turning off.

#### \* LR8410, LR8416

CH1\_1 to CH7\_15 is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit's registered

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Reference command (the 8423 command.)

(1) Sets and queries the store enable or disable for channel data record.

Syntax (command) :UNIT:STORe unit\$,ch\$,A\$  
(query) :UNIT:STORe? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=OFF,ON

Explanation Sets the store enable or disable for the channel designated by unit\$,ch\$.  
Returns the current store enable or disable for the channel designated by unit\$,ch\$ as character data.

Example :UNITSTORe UNIT,CH1,ON  
Sets the store for UNIT 1 channel 1 to enable.

Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416 command.)

(1) Sets and queries the store enable or disable for channel data record.

Syntax (LR8400, LR8401, LR8402)  
(command) :UNIT:STORe ch\$, A\$  
(query) :UNIT:STORe? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_15  
A\$=OFF, ON

Syntax (LR8410, LR8416)  
(command) :UNIT:STORe ch\$, A\$  
(query) :UNIT:STORe? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH7\_15  
A\$=OFF, ON

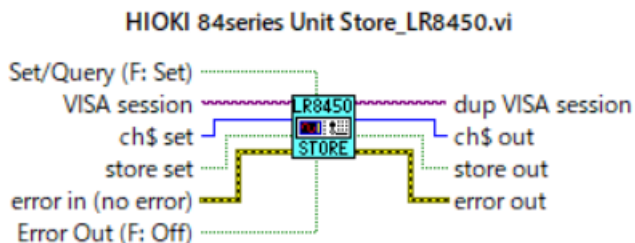
Explanation Sets the store enable or disable for the channel designated by ch\$.  
Returns the current store enable or disable for the channel designated by ch\$ as character data.

Example :UNIT:STORe CH1\_1,ON  
Sets the store for channel 1-1 to enable.

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#### 4-3-20. HIOKI 84series Unit Store\_LR8450.vi

Sets or queries the store enable or disable for channel data record.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range : CH1_1toCH4_30,R1_1toR7_30,PLS1toPLS8,LOG,ALARM W1toW30
store set		Specifies the store enable or disable for channel data record
ch\$ out		Specified channel
store out		The result of querying the store enable or disable for channel data record

This Vi is included in Polymorphic Vi, HIOKI 84series Unit Store.vi.

#### Reference command (the LR8450 command.)

(1) Sets and queries the store enable or disable for channel data record.

Syntax (command) :UNIT:STORe ch\$,A\$

(query) :UNIT:STORe? ch\$

(response) ch\$,A\$

ch\$= CH1\_1toCH4\_30,R1\_1toR7\_30,PLS1toPLS8,LOG,ALARM,W1toW30,  
A\$=OFF,ON

Explanation Sets the store enable or disable for the channel designated by ch\$.

Returns the current store enable or disable for the channel designated by ch\$ as character data.

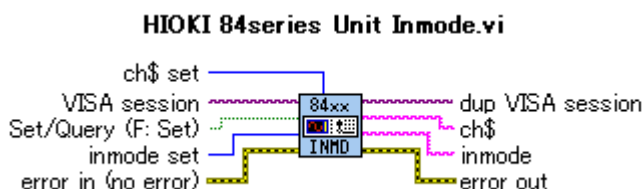
Example :UNIT:STORe CH1\_1,ON

Sets the store for channel 1-1 to enable.

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#### 4-3-21. HIOKI 84series Unit Inmode.vi

Sets or queries the measurement mode of an input channel.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range:0(=CH1_1) to 59(=CH4_15) (LR8410,LR8416) Valid range:0(=CH1_1) to 104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) to 119(=UNIT8,CH15) (LR8450) Valid range:0(=CH1_1) to 119(CH4_30),120(R1_1)to 329(=R7_30)
inmode set		Specifies the measurement mode of an input channel Valid range: 0(=VOLTAGE),1(=TC),2(=RTD),3(=HUMIDITY),4(=RESIST),5(=HEAT) * (LR8450) 0(=VOLTAGE),1(=TC),2(=RTD),3(=HUMIDITY),4(=RESIST),5(=STRAIN)*
ch\$		Specified channel
inmode		The result of querying the measurement mode of an input channel

\*LR8400, LR8401, LR8402, LR8410, LR8416

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

RTD and RESIST can only be used with LR8501 Universal Unit.

\* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless

Volt/Temp Unit. RTD and RESIST can only be used with U8551, LR8531 Universal Units.

\* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit.

RTD and RESIST can only be used with 8949 Universal Unit.

\* LR8450

RTD and RESIST can only be used with U8551, LR8531 Universal Units. STRAIN can only be used with U8554, LR8534 Strain Units.

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Reference command (the LR8400,LR8401,LR8402、LR8410,LR8416、LR8450command.)

(5) Sets and queries the measurement mode of an input channel.

Syntax (LR8400,LR8401,LR8402)

(command) :UNIT:INMOde ch\$,A\$

(query) :UNIT:INMOde? ch\$

(response) ch\$,A\$

ch\$=CH1\_1toCH4\_15

A\$=VOLTAGE,TC,RTD,HUMIDITY,RESIST

Syntax (LR8410,LR8416)

(command) :UNIT:INMOde ch\$,A\$

(query) :UNIT:INMOde? ch\$

(response) ch\$,A\$

ch\$=CH1\_1toCH7\_15

A\$=VOLTAGE,TC,RTD,HUMIDITY,RESIST

Syntax (LR8450)

(command) :UNIT:INMOde ch\$,A\$

(query) :UNIT:INMOde? ch\$

(response) ch\$,A\$

ch\$=CH1\_1toCH4\_30,R1\_1toR7\_30

A\$=VOLTAGE,TC,RTD,HUMIDITY,RESIST,STRAIN

Explanation Sets the measurement mode for the channel designated by unit\$,ch\$.

Returns the current measurement mode for the channel designated by unit\$,ch\$ as character data.

Example :UNIT:INMOde UNIT1,CH1,VOLTAGE

Sets the measurement mode for unit 1,channel 1 to voltage.

Reference command (the 8423 command.)

(5) Sets and queries the measurement mode of an input channel.

Syntax (command) :UNIT:INMOde unit\$,ch\$,A\$

(query) :UNIT:INMOde? unit\$,ch\$

(response) unit\$,ch\$,A\$

unit\$=UNIT1 to UNIT8

ch\$=CH1 to CH15

A\$=VOLTAGE,TC,RTD,HUMIDITY

Explanation Sets the measurement mode for the channel designated by unit\$,ch\$.

Returns the current measurement mode for the channel designated by unit\$,ch\$ as character data.

Example :UNIT:INMOde UNIT1,CH1,VOLTAGE

Sets the measurement mode for unit 1,channel 1 to voltage.



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#### 4-3-22. HIOKI 84series Unit Range.vi

Sets or queries the measurement range of an input channel.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range:0(=CH1_1) to 59(=CH4_15) (LR8410,LR8416) Valid range:0(=CH1_1) to 104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) to 119(=UNIT8,CH15) (LR8450) Valid range:0(=CH1_1) to 119(CH4_30),120(R1_1) to 329(=R7_30)
range set		Specifies the measurement range (LR8400,LR8401,LR8402, LR8410,LR8416) (unit:V、°C、%、Ω) (LR8450) (unit:V、°C、%、Ω、ε) (8423) (unit:V、°C、%) *
ch\$		Specified channel
range		The result of querying the measurement range (LR8400,LR8401,LR8402, LR8410,LR8416) (unit:V、°C、%、Ω) (LR8450) (unit:V、°C、%、Ω、ε) (8423) (unit:V、°C、%) *

\* Temperature range cannot be set to 100 or 500 at Sensor is B.

\*LR8400, LR8401, LR8402, LR8410, LR8416

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

RTD and RESIST can only be used with LR8501 Universal Unit.

\* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit. RTD and RESIST can only be used with U8551, LR8531 Universal Units.

\* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit.

RTD and RESIST can only be used with 8949 Universal Unit.

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Reference command (the LR8400,LR8401,LR8402, LR8410,LR8416, LR8450 command.)

(4) Sets and queries the measurement range of an input channel.

Syntax (LR8400, LR8401, LR8402)

(command) :UNIT:RANGe ch\$, A  
(query) :UNIT:RANGe? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH4\_15  
A=volt(V), tc, rtd(C), humid(%), resist(OHM)

Syntax (LR8410, LR8416)

(command) :UNIT:RANGe ch\$, A  
(query) :UNIT:RANGe? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH7\_15  
A=volt(V), tc, rtd(C), humid(%), resist(OHM)

Syntax (LR8450)

(command) :UNIT:RANGe ch\$, A  
(query) :UNIT:RANGe? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30  
A=volt(V), tc, rtd(C), humid(%), resist(OHM), strain(EPSILON)

Explanation Sets the measurement range for the channel designated by ch\$ to a numerical value.  
Returns the current measurement range for the channel designated by ch\$ as an NR3 numerical value.

Example :UNIT:RANGe CH1\_1, +100.E-3  
Sets the measurement range for channel 1-1 to 100 mV.

Reference command (the 8423 command.)

(6) Sets and queries the measurement range of an input channel.

Syntax (command) :UNIT:RANGe unit\$,ch\$,A  
(query) :UNIT:RANGe? unit\$,ch\$  
(response) unit\$,ch\$,A<NR3>  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A=volt(V),tc,rtd(C),humid(%)

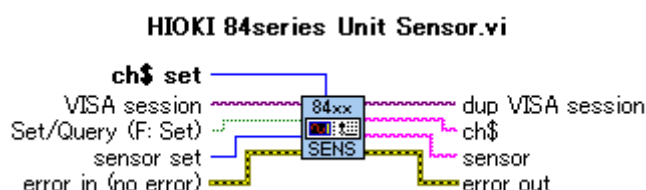
Explanation Sets the measurement range for the channel designated by unit\$,ch\$ to a numerical value.  
Returns the current measurement range for the channel designated by unit\$,ch\$ as an NR3 numerical value.

Example :UNIT:RANGe UNIT1,CH1,+100.E-3  
Sets the measurement range for unit 1,channel 1 to 100 mV.

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#### 4-3-23. HIOKI 84series Unit Sensor.vi

Sets or queries the sensor kind for tc mode.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402): 0(=CH1_1) to 59(=CH4_15) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15) Valid range:(LR8450):0(=CH1_1) to119(CH4_30),120(R1_1)to 329(=R7_30)
sensor set		Specifies the sensor kind for tc mode Valid range: 0(=K), 1(=J), 2(=E), 3(=T), 4(=N), 5(=R), 6(=S), 7(=B), 8(=W)* (LR8450):0(=K), 1(=J), 2(=E), 3(=T), 4(=N), 5(=R), 6(=S), 7(=B), 8(=C)*
ch\$		Specified channel
sensor		The result of querying the sensor kind for tc mode

\* Sensor cannot be set to B at temperature range is 100 or 500.

\*LR8400, LR8401, LR8402, LR8410, LR8416

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

RTD and RESIST can only be used with LR8501 Universal Unit.

\* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit. RTD and RESIST can only be used with U8551, LR8531 Universal Units.

\* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit.

RTD and RESIST can only be used with 8949 Universal Unit.

\*LR8450

This command is effective only when U8551/LR8531 Universal Unit or U8550/LR8530/U8552/LR8532 Volt/Temp Unit.

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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(6) Sets and queries the sensor kind for tc mode.

Syntax (LR8400, LR8401, LR8402)

(command) :UNIT:SENSor ch\$, A\$  
(query) :UNIT:SENSor? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_15  
A\$=K, J, E, T, N, R, S, B, W

Syntax (LR8410, LR8416)

(command) :UNIT:SENSor ch\$, A\$  
(query) :UNIT:SENSor? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH7\_15  
A\$=K, J, E, T, N, R, S, B, W

Syntax (LR8450)

(command) :UNIT:SENSor ch\$, A\$  
(query) :UNIT:SENSor? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30  
A\$=K, J, E, T, N, R, S, B, C

Explanation Sets the sensor kind for the channel designated by ch\$.  
Returns the current sensor kind for the channel designated by  
ch\$ as character data.

Example :UNIT:SENSor CH1\_1,K  
Sets the sensor kind for channel 1-1 to K.

Reference command (the 8423 command.)

(7) Sets and queries the sensor kind for tc mode.

Syntax (command) :UNIT:SENSor unit\$,ch\$,A\$  
(query) :UNIT:SENSor? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=K,J,E,T,N,R,S,B,W

Explanation Sets the sensor kind for the channel designated by unit\$,ch\$.  
Returns the current sensor kind for the channel designated by  
unit\$,ch\$ as character data.

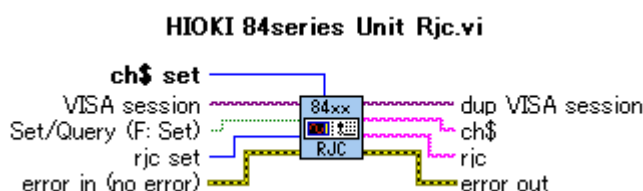
Example :UNIT:SENSor UNIT1,CH1,K  
Sets the sensor kind for unit 1,channel 1 to K.

Note This command is effective only when 8949 Universal Unit  
or 8948 Voltage/Temp Unit.

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#### 4-3-24. HIOKI 84series Unit Rjc.vi

Sets or queries the point of contact compensation for tc mode.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402): 0(=CH1_1) to 59(=CH4_15) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15) Valid range:(LR8450):0(=CH1_1) to119(CH4_30),120(R1_1)to 329(=R7_30)
rjc set		Specifies the point of contact compensation for tc mode Valid range: 0(=IN), 1(=EXT)
ch\$		Specified channel
rjc		The result of querying the point of contact compensation for tc mode

\*LR8400, LR8401, LR8402, LR8410, LR8416

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

\* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit.

\* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit.

\*LR8450

This command is effective only when U8551/LR8531 Universal Unit or U8550/LR8530/U8552/LR8532 Volt/Temp Unit.

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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(7) Sets and queries the point of contact compensation for tc mode.

Syntax (LR8400, LR8401, LR8402)

(command) :UNIT:RJC ch\$, A\$  
(query) :UNIT:RJC? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_15  
A\$=INT, EXT

Syntax (LR8410, LR8416)

(command) :UNIT:RJC ch\$, A\$  
(query) :UNIT:RJC? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH7\_15  
A\$=INT, EXT

Syntax (LR8450)

(command) :UNIT:RJC ch\$, A\$  
(query) :UNIT:RJC? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30  
A\$=INT, EXT

Explanation Sets the point of contact compensation for the channel designated by ch\$.  
Returns the current point of contact compensation for the channel designated by ch\$ as character data.

Example :UNIT:RJC CH1\_1, INT  
Sets the point of contact compensation for channel 1-1 to int.

Reference command (the 8423 command.)

(8) Sets and queries the point of contact compensation for tc mode.

Syntax (command) :UNIT:RJC unit\$,ch\$,A\$  
(query) :UNIT:RJC? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=INT,EXT

Explanation Sets the point of contact compensation for the channel designated by unit\$,ch\$.  
Returns the current point of contact compensation for the channel designated by unit\$,ch\$ as character data.

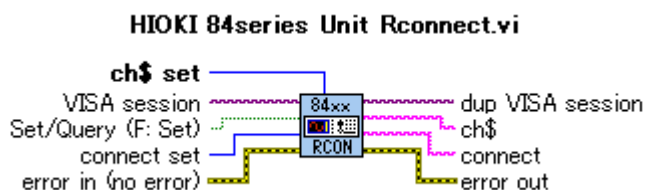
Example :UNIT:RJC UNIT1,CH1,INT  
Sets the point of contact compensation for unit 1,channel 1 to int.

Note This command is effective only when 8949 Universal Unit  
or 8948 Voltage/Temp Unit.

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#### 4-3-25. HIOKI 84series Unit Rconnect.vi

Sets or queries the connect kind for rtd mode.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402): 0(=CH1_1) to 59(=CH4_15) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15) Valid range: (LR8450):0(=CH1_1) to 119(CH4_30),120(R1_1)to 329(=R7_30)
rjc set		Specifies the connect kind for rtd mode Valid range: 0(=3LINE), 1(=4LINE) *
ch\$		Specified channel
rjc		The result of querying the connect kind for rtd mode

\*LR8400, LR8401, LR8402, LR8410, LR8416

This command is effective only when LR8501 Universal Unit.

\* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit.

\* 8423

This command is effective only when 8949 Universal Unit.

\*LR8450

This command is effective only when U8551/LR8531 Universal Unit.

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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(10) Sets and queries the connect kind for rtd mode.

Syntax (LR8400, LR8401, LR8402

) (command) :UNIT:RCONnect ch\$, A\$  
(query) :UNIT:RCONnect? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_15  
A\$=3LINE, 4LINE

Syntax (LR8410, LR8416)

(command) :UNIT:RCONnect ch\$, A\$  
(query) :UNIT:RCONnect? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH7\_15  
A\$=3LINE, 4LINE

Syntax (LR8450)

(command) :UNIT:RCONnect ch\$, A\$  
(query) :UNIT:RCONnect? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30  
A\$=3LINE, 4LINE

Explanation Sets the connect kind for the channel designated by ch\$.  
Returns the current connect kind for the channel designated by  
ch\$ as character data.

Example :UNIT:RCONnect CH1\_1, 4LINE  
Sets the rtd kind for channel 1-1 to 4line.

Reference command (the 8423 command.)

(11) Sets and queries the connect kind for rtd mode.

Syntax (command) :UNIT:RCONnect unit\$,ch\$,A\$  
(query) :UNIT:RCONnect? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=3LINE, 4LINE

Explanation Sets the connect kind for the channel designated by unit\$,ch\$.  
Returns the current connect kind for the channel designated by  
unit\$,ch\$ as character data.

Example :UNIT:RCONnect UNIT1,CH1,4LINE  
Sets the rtd kind for unit 1,channel 1 to 4line.

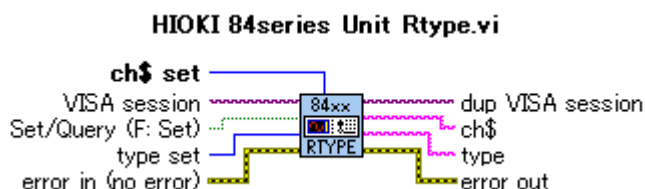
Note This command is effective only when 8949 Universal Unit.



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#### 4-3-26. HIOKI 84series Unit Rtype.vi

Sets or queries the rtd kind for rtd mode.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402): 0(=CH1_1) to 59(=CH4_15) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15) Valid range:(LR8450):0(=CH1_1) to119(CH4_30),120(R1_1)to 329(=R7_30)
Type set		Specifies the rtd kind for rtd mode Valid range: 0(=PT100), 1(=JPT100),2(PT1000)*
ch\$		Specified channel
type		The result of querying the rtd kind for rtd mode

\*LR8400, LR8401, LR8402, LR8410, LR8416

This command is effective only when LR8501 Universal Unit.

\* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit.

\* 8423

This command is effective only when 8949 Universal Unit.

\*LR8450

This command is effective only when U8551/LR8531 Universal Unit.

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Reference command (the LR8400,LR8401,LR8402, LR8410,LR8416,LR8450 command.)

(9) Sets and queries the rtd kind for rtd mode.

Syntax (LR8400, LR8401, LR8402)

(command) :UNIT:RTYPE ch\$, A\$  
(query) :UNIT:RTYPE? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_15  
A\$=PT100, JPT100

Syntax (LR8410, LR8416)

(command) :UNIT:RTYPE ch\$, A\$  
(query) :UNIT:RTYPE? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH7\_15  
A\$=PT100, JPT100

Syntax (LR8450)

(command) :UNIT:RTYPE ch\$, A\$  
(query) :UNIT:RTYPE? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30  
A\$=PT100, JPT100, PT1000

Explanation Sets the rtd kind for the channel designated by ch\$.  
Returns the current rtd kind for the channel designated by  
ch\$ as character data.

Example :UNIT:RTYPE CH1\_1, PT100  
Sets the rtd kind for channel 1-1 to pt100.

Reference command (the 8423 command.)

(10) Sets and queries the rtd kind for rtd mode.

Syntax (command) :UNIT:RTYPE unit\$,ch\$,A\$  
(query) :UNIT:RTYPE? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=PT100,JPT100

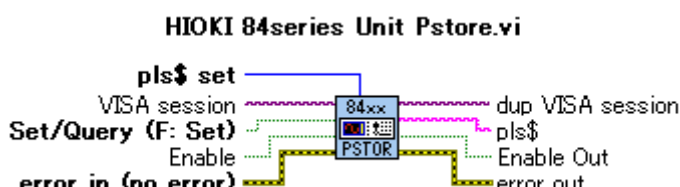
Explanation Sets the rtd kind for the channel designated by unit\$,ch\$.  
Returns the current rtd kind for the channel designated by  
unit\$,ch\$ as character data.

Example :UNIT:RTYPE UNIT1,CH1,PT100  
Sets the rtd kind for unit 1,channel 1 to pt100.

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#### 4-3-27. HIOKI 84series Unit Pstore.vi

Sets or queries the store enable or disable for pulse channel data record.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set		Specifies the pulse channel Valid range: 0(=PLS1) to 7(=PLS8)
Enable		Specifies the store enable or disable for pulse channel data record
pls\$		Specified pulse channel
Enable out		The result of querying the store enable or disable for pulse channel data record

\* This Vi is included in Polymorphic Vi, HIOKI 84series Unit Store.vi.

\* The pulse channel to be set should be made PLS measurement by using the command of :UNIT:PLSLogic PLS1,PLS to turn on the pulse collection by :UNIT:STORe PLS1,ON.  
:UNIT:STORe PLS1,ON becomes invalid when being set it to :UNIT:PLSLogic PLS1,LOGIC.  
To turn on the logic collection by :UNIT:STORe LOG,ON one or more of PLS1-PLS8 should be made LOGIC measurement by using the command of :UNIT:PLSLogic PLS1,LOGIC.  
When PLS1-PLS8 is entire PLS, :UNIT:STORe LOG,ON becomes invalid.

#### Reference command (the LR8400,LR8401,LR8402 command.)

(1) Sets and queries the store enable or disable for channel data record.

Syntax (command) :UNIT:STORe ch\$,A\$  
(query) :UNIT:STORe? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8, LOG, ALARM, W1 to W30  
A\$=OFF, ON

Explanation Sets the store enable or disable for the channel designated by ch\$.  
Returns the current store enable or disable for the channel designated by ch\$ as character data.

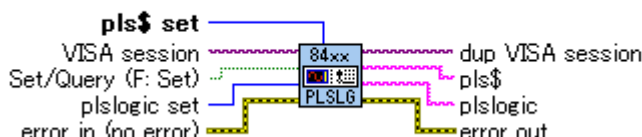
Example :UNITSTORe PLS1, ON  
Sets the store for pls1 to enable.

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#### 4-3-28. HIOKI 84series Unit Plslogic.vi

Sets or queries the pulse or logic .

##### HIOKI 84series Unit Plslogic.vi



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set(LR8400,LR8401,LR8402) ch\$ set (8423)		Specifies the pulse channel Valid range: (LR8400,LR8401,LR8402):0(=PLS1) to 7(=PLS8) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
plslogic set		Specifies the pulse or logic Valid range: 0(=PLS :Default),1(=LOGIC)
pls\$ (LR8400,LR8401,LR8402) ch\$ (8423)		Specified pulse channel
Plslogic		The result of querying the pulse or logic

Reference command (the LR8400,LR8401,LR8402 command.)

(18) Sets and queries the pulse or logic.

Syntax (command) :UNIT:PLSLogic pls\$,A\$  
(query) :UNIT:PLSLogic? pls\$  
(response) pls\$,A\$ A\$=PLS,LOGIC

Explanation Sets the pulse or logic for the channel designated by pls\$.  
Returns the current pulse or logic for the channel designated by pls\$ as character data.

Example :UNIT:PLSLogic PLS1,PLS  
Sets the pulse or logic for pls1 to PLS.

Reference command (the 8423 command.)

(18) Sets and queries the pulse or logic.

Syntax (command) :UNIT:PLSLogic unit\$,ch\$,A\$  
(query) :UNIT:PLSLogic? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8, ch\$=CH1 to CH15 A\$=PLS,LOGIC

Explanation Sets the pulse or logic for the channel designated by unit\$,ch\$.  
Returns the current pulse or logic for the channel designated by unit\$,ch\$ as character data.

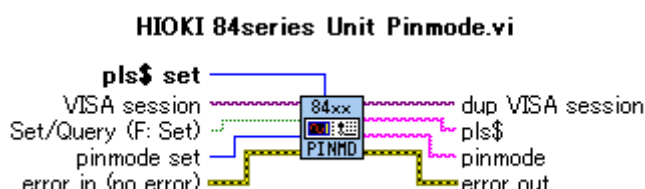
Example :UNIT:PLSLogic UNIT1,CH1,PLS  
Sets the pulse or logic for unit 1,channel 1 to PLS.

Note This command is effective only when 8996 Digital/Pulse Unit.

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#### 4-3-29. HIOKI 84series Unit Pinmode.vi

Sets or queries the measurement mode of an input pulse channel.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set (LR8400,LR8401,LR8402, LR8450) ch\$ set (8423)		Specifies the pulse channel Valid range:(LR8400,LR8401,LR8402,LR8450): 0(=PLS1) to 7(=PLS8) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
pinmode set		Specifies the measurement mode of an input pulse channel Valid range: 0(=COUNT :Default),1(=REVOLVE),2(=LOGIC)
pls\$ (LR8400,LR8401, LR8402,LR8450) ch\$ (8423)		Specified pulse channel
Pinmode		The result of the measurement mode of an input pulse channel

\* This command is effective only when 8996 Digital/Pulse Unit

Reference command (the 8423 command.)

(12) Sets and queries the measurement mode of an input pulse channel.

Syntax (command) :UNIT:PINMode unit\$,ch\$,A\$  
(query) :UNIT:PINMode? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=COUNT,REVOLVE

Explanation Sets the measurement mode for the pulse channel designated by unit\$,ch\$.  
Returns the current measurement mode for the pulse channel designated by unit\$,ch\$ as character data.

Example :UNIT:PINMode UNIT1,CH1,COUNT  
Sets the measurement mode for unit 1,channel 1 to count.

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Reference command (the LR8400,LR8401,LR8402,LR8450 command.)

(11) Sets and queries the measurement mode of an input pulse channel.

Syntax (LR8400, LR8401, LR8402)

(command) :UNIT:PINMode pls\$, A\$  
(query) :UNIT:PINMode? pls\$  
(response) pls\$, A\$  
pls\$=PLS1 to PLS8  
A\$=COUNT, REVOLVE

Syntax (LR8450)

(command) :UNIT:PINMode pls\$, A\$  
(query) :UNIT:PINMode? pls\$  
(response) pls\$, A\$  
pls\$=PLS1 to PLS8  
A\$=COUNT, REVOLVE, LOGIC

Explanation Sets the measurement mode for the pulse channel designated by pls\$.

Returns the current measurement mode for the pulse channel designated by pls\$ as character data.

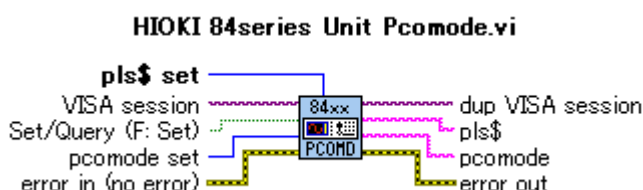
Example :UNIT:PINMode PLS1, COUNT

Sets the measurement mode for pls1 to count.

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#### 4-3-30. HIOKI 84series Unit Pcomode.vi

Sets or queries the count mode of an input pulse channel.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set (LR8400,LR8401,LR8402,LR8450,) ch\$ set (LR8410,LR8416,8423)		Specifies the pulse channel Valid range: (LR8400,LR8401,LR8402,LR8450): 0(=PLS1) to 7(=PLS8) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
pcomode set		Specifies the count mode of an input pulse channel Valid range: 0(=ADD :Default),1(=INST)
pls\$ (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specified pulse channel
pcomode		The result of the count mode of an input pulse channel

\* This command is effective only when 8996 Digital/Pulse Unit.

Reference command (the 8423 command.)

(13) Sets and queries the count mode of an input pulse channel.

Syntax (command) :UNIT:PCOMode unit\$,ch\$,A\$  
(query) :UNIT:PCOMode? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=ADD,INST

Explanation Sets the count mode for the pulse channel designated by unit\$,ch\$.

Returns the current count mode for the pulse channel designated by unit\$,ch\$ as character data.

Example :UNIT:PCOMode UNIT1,CH1,ADD

Sets the count mode for unit 1,channel 1 to add.

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Reference command (the LR8400, LR8401, LR8402, LR8450 command.)

(13) Sets and queries the count mode of an input pulse channel.

Syntax (command) :UNIT:PCOMode pls\$,A\$  
(query) :UNIT:PCOMode? pls\$  
(response) pls\$,A\$  
pls\$=PLS1 to PLS8  
A\$=ADD, INST

Explanation Sets the count mode for the pulse channel designated by pls\$.  
Returns the current count mode for the pulse channel designated by pls\$ as character data.

Example :UNIT:PCOMode PLS1,ADD  
Sets the count mode for pls1 to add.

Reference command (the LR8410, LR8416 command.)

(13) Sets and queries the count mode of an input pulse channel.

Syntax (command) :UNIT:PCOMode ch\$,A\$  
(query) :UNIT:PCOMode? ch\$  
(response) pls\$,A\$  
ch\$=CH1\_1 to CH7\_2  
A\$=ADD, INST

Explanation Sets the count mode for the pulse channel designated by pls\$.  
Returns the current count mode for the pulse channel designated by pls\$ as character data.

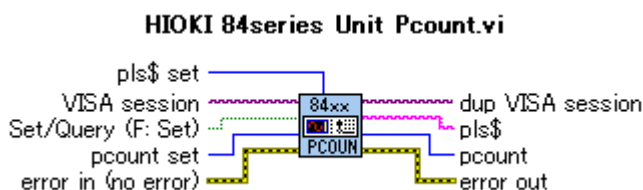
Example :UNIT:PCOMode PLS1,ADD  
Sets the count mode for pls1 to add.



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#### 4-3-31. HIOKI 84series Unit Pcount.vi

Sets or queries the pulse num per revolve.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specifies the pulse channel Valid range: (LR8400,LR8401,LR8402,LR8450):0(=PLS1) to 7(=PLS8) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
pcount set		Specifies the pulse num per revolve Valid range: 1 to 1000
pls\$ (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specified pulse channel
pcount		The result of the pulse num per revolve

- \* On 8423, this command is effective only when LR8512 Wireless Pulse Logger.
- \* On LR8410,LR8416, this command is effective only when LR8512 Wireless Pulse Logger's registered channel.

#### Reference command (the 8423 command.)

##### (14) Sets and queries the pulse num per revolve.

Syntax	(command) :UNIT:PCOUNt unit\$,ch\$,A (query) :UNIT:PCOUNt? unit\$,ch\$ (response) unit\$,ch\$,A<NR1> unit\$=UNIT1 to UNIT8 ch\$=CH1 to CH15 A=pulse num per revolve(1 to 9999)
Explanation	Sets the pulse num per revolve for the pulse channel designated by unit\$,ch\$ in the range to a numerical value. Returns the current pulse num per revolve for the pulse channel designated by unit\$,ch\$ as an NR1 numerical value
Example	:UNIT:PCOUNt UNIT1,CH1,1 Sets the pulse num per revolve for unit 1,channel 1 to 1.

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Reference command (the LR8400,LR8401,LR8402,LR8450 command.)

(14) Sets and queries the pulse num per revolve.

Syntax (command) :UNIT:PCOunt pls\$, A  
(query) :UNIT:PCOunt? pls\$  
(response) pls\$, A<NR1>  
pls\$=PLS1 to PLS8  
A=pulse num per revolve(1 to 1000)

Explanation Sets the pulse num per revolve for the pulse channel designated by pls\$ in the range to a numerical value.  
Returns the current pulse num per revolve for the pulse channel designated by pls\$ as an NR1 numerical value

Example :UNIT:PCOunt PLS1, 1  
Sets the pulse num per revolve for pls1 to 1.

Reference command (the LR8410,LR8416 command.)

(13) Sets and queries the pulse num per revolve.

Syntax (command) :UNIT:PCOunt ch\$,A  
(query) :UNIT:PCOunt? ch\$  
(response) ch\$,A<NR1>  
ch\$=CH1\_1 to CH7\_2  
A=pulse num per revolve(1 to 1000)

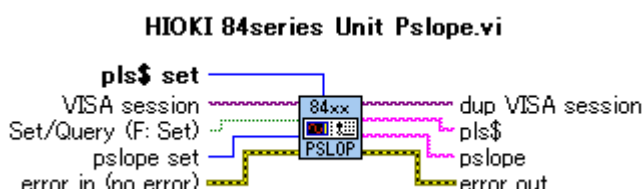
Explanation Sets the pulse num per revolve for the pulse channel designated by ch\$ in the range to a numerical value.  
Returns the current pulse num per revolve for the pulse channel designated by ch\$ as an NR1 numerical value

Example :UNIT:PCOunt CH1\_1, 1  
Sets the pulse num per revolve for CH1\_1 to 1.

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#### 4-3-32. HIOKI 84series Unit Pslope.vi

Sets or queries the pulse channel count slope.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specifies the pulse channel Valid range:(LR8400,LR8401,LR8402,LR8450): 0(=PLS1) to 7(=PLS8) Valid range:(LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
pslope set		Specifies the pulse channel count slope Valid range: 0(=UP :Default),1(=DOWN)
pls\$(LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specified pulse channel
Pslope		The result of the pulse channel count slope

\* On 8423, this command is effective only when 8996 Digital/Pulse Unit

\* On LR8410,LR8416, this command is effective only when LR8512 Wireless Pulse Logger.

#### Reference command (the 8423 command.)

(15) Sets and queries the pulse channel count slope.

Syntax (command) :UNIT:PSLOPe unit\$,ch\$,A\$  
(query) :UNIT:PSLOPe? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=UP,DOWN

Explanation Sets the count slope for the channel designated by unit\$,ch\$.  
Returns the current count slope for the channel designated by unit\$,ch\$ as character data.

Example :UNIT:PSLOPe UNIT1,CH1,UP  
Sets the count slop for unit 1,channel 1 to up.

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Reference command (the LR8400,LR8401,LR8402,LR8450 command.)

(15) Sets and queries the pulse channel count slope.

Syntax (command) :UNIT:PSLOPe pls\$,A\$  
(query) :UNIT:PSLOPe? pls\$  
(response) pls\$,A\$  
pls\$=PLS1 to PLS8  
A\$=UP,DOWN

Explanation Sets the count slope for the channel designated by pls\$.  
Returns the current count slope for the channel designated by  
pls\$ as character data.

Example :UNIT:PSLOPe PLS1,UP  
Sets the count slop for pls1 to up.

Reference command (the LR8410,LR8416 command.)

(15) Sets and queries the pulse channel count slope.

Syntax (command) :UNIT:PSLOPe ch\$,A\$  
(query) :UNIT:PSLOPe? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH7\_2  
A\$=UP,DOWN

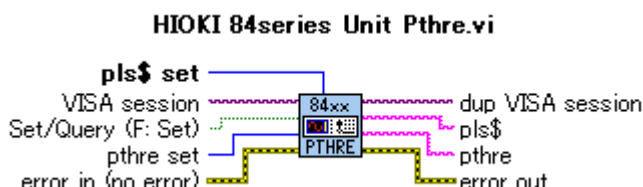
Explanation Sets the count slope for the channel designated by ch\$.  
Returns the current count slope for the channel designated by  
ch\$ as character data.

Example :UNIT:PSLOPe CH1\_1,UP  
Sets the count slop for CH1\_1 to up.

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#### 4-3-33. HIOKI 84series Unit Pthre.vi

Sets or queries the pulse threshold level.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specifies the pulse channel Valid range:(LR8400,LR8401,LR8402,LR8450):0(=PLS1) to 7(=PLS8) Valid range:(LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range:(8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
Pthre set		Specifies the pulse threshold level Valid range: 0(=1V :Default),1(=4V)
pls\$(LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specified pulse channel
Pthre		The result of the pulse threshold level

\* On 8423, this command is effective only when 8996 Digital/Pulse Unit

\* On LR8410,LR8416, this command is effective only when LR8512 Wireless Pulse Logger.

#### Reference command (the 8423 command.)

##### (16) Sets and queries the pulse threshold level.

Syntax            (command)        :UNIT:PTHRe unit\$,ch\$,A\$  
                      (query)            :UNIT:PTHRe? unit\$,ch\$  
                      (response)        unit\$,ch\$,A\$  
    unit\$=UNIT1 to UNIT8  
    ch\$=CH1 to CH15  
    A\$=1V,4V

Explanation    Sets the pulse threshold level for the channel designated by unit\$,ch\$.  
                      Returns the current pulse threshold level for the channel designated by unit\$,ch\$ as character data.

Example                :UNIT:PTHRe UNIT1,CH1,1V  
                              Sets the pulse threshold level for unit 1,channel 1 to 1V.

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Reference command (the LR8400,LR8401,LR8402,LR8450 command.)

(16) Sets and queries the pulse threshold level.

Syntax (command) :UNIT:PTHRe pls\$,A\$  
(query) :UNIT:PTHRe? pls\$  
(response) pls\$,A\$  
pls\$=PLS1 to PLS8  
A\$=1V,4V

Explanation Sets the pulse threshold level for the channel designated by pls\$.  
Returns the current pulse threshold level for the channel designated by pls\$ as character data.

Example :UNIT:PTHRe PLS1,1V  
Sets the pulse threshold level for pls1 to 1V.

Reference command (the LR8410,LR8416 command.)

(16) Sets and queries the pulse threshold level.

Syntax (command) :UNIT:PTHRe ch\$,A\$  
(query) :UNIT:PTHRe? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH7\_2  
A\$=1V,4V

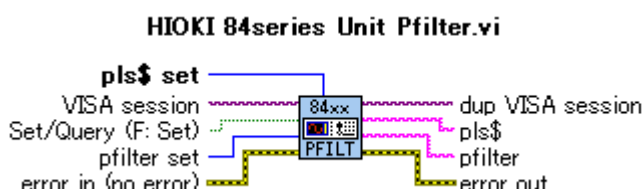
Explanation Sets the pulse threshold level for the channel designated by ch\$.  
Returns the current pulse threshold level for the channel designated by ch\$ as character data.

Example :UNIT:PTHRe CH1\_1,1V  
Sets the pulse threshold level for CH1\_1 to 1V.

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#### 4-3-34. HIOKI 84series Unit Pfilter.vi

Sets or queries the pulse channel filter.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specifies the pulse channel Valid range: (LR8400,LR8401,LR8402,LR8450):0(=PLS1) to 7(=PLS8) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15) Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)
Pfilter set		Specifies the pulse channel filter Valid range: 0(=OFF :Default),1(=ON)
pls\$ (LR8400,LR8401,LR8402,LR8450) ch\$ set (LR8410,LR8416,8423)		Specified pulse channel
Pfilter		The result of the pulse channel filter

- \* On 8423, this command is effective only when 8996 Digital/Pulse Unit
- \* On LR8410,LR8416, this command is effective only when LR8512 Wireless Pulse Logger.

#### Reference command (the 8423 command.)

##### (17) Sets and queries the pulse channel filter.

Syntax	(command) :UNIT:PFILTer unit\$,ch\$,A\$ (query) :UNIT:PFILTer? unit\$,ch\$ (response) unit\$,ch\$,A\$ unit\$=UNIT1 to UNIT8 ch\$=CH1 to CH15 A\$=OFF,ON
Explanation	Sets the filter for the channel designated by unit\$,ch\$. Returns the current filter for the channel designated by unit\$,ch\$ as character data.
Example	:UNIT:PFILTer UNIT1,CH1,ON Sets the filter for unit 1,channel 1 to ON.

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Reference command (the LR8400,LR8401,LR8402,LR8450 command.)

(17) Sets and queries the pulse channel filter.

Syntax (command) :UNIT:PFILTER pls\$,A\$  
(query) :UNIT:PFILTER? pls\$  
(response) pls\$,A\$  
pls\$=PLS1 to PLS8  
A\$=OFF,ON

Explanation Sets the filter for the channel designated by pls\$.  
Returns the current filter for the channel designated by  
pls\$ as character data.

Example :UNIT:PFILTER PLS1,ON  
Sets the filter for pls1 to ON.

Reference command (the LR8410,LR8416 command.)

(17) Sets and queries the clamp filter.

Syntax (command) :UNIT:CFILTER ch\$,A\$  
(query) :UNIT:CFILTER? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH7\_2  
A\$=OFF,ON

Explanation Sets the filter for the channel designated by ch\$.  
Returns the current filter for the channel designated by  
ch\$ as character data.

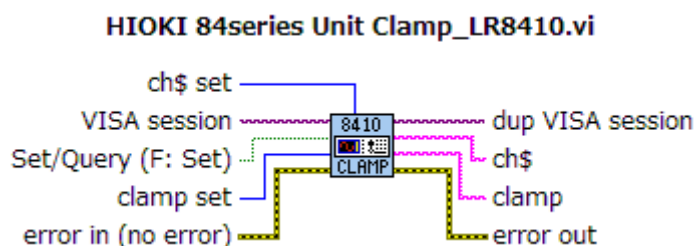
Example :UNIT:CFILTER CH1\_1,ON  
Sets the filter for CH1\_1 to ON.



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#### 4-3-35. HIOKI 84series Unit Clamp\_LR8410.vi

Sets or queries the clamp sensor.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: 0(=CH1_1) to 104(=CH7_15) (It can be used to 2 channels in each logger.)
clamp set		Specifies the clamp sensor Valid range::0(=9675 :Default),1(=9657-10),2(=9695-02),3(=CT6500), 4(=9669),5(=CT9691-90),6(=CT9692-90),7(=CT9693-90)
ch\$		Specified channel
clamp		The result of the clamp sensor

\* This command is effective only when LR8513 Wireless Clamp Logger.

Reference command (the LR8410,LR8416 command.)

(18) Sets and queries the clamp sensor.

Syntax (command) :UNIT:CLAMP ch\$,A\$  
(query) :UNIT:CLAMP? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH7\_2

A\$=9675,9657-10,9695-02,CT6500,9669,CT9691-90,CT9692-90,CT9693-90

Explanation Sets the sensor for the channel designated by ch\$.  
Returns the current sensor for the channel designated by ch\$ as character data.

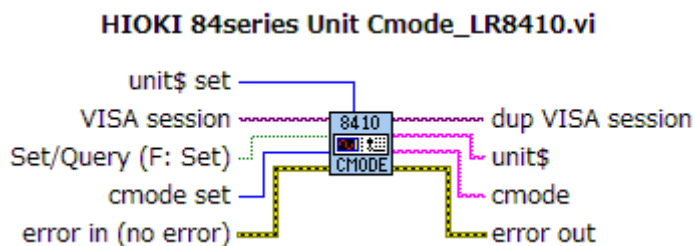
Example :UNIT:CLAMP CH1\_1,9675  
Sets the sensor for CH1\_1 to 9675.

Note This command is effective only when LR8513 Wireless Clamp Logger's registered channel.

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#### 4-3-36. HIOKI 84series Unit Cmode\_LR8410.vi

Sets or queries the clamp mode.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
unit\$ set		Specifies the unit Valid range: 0(=UNIT1) to 6(=UNIT7)
cmode set		Specifies the clamp mode Valid range: 0(=INST :Default),1(=AVE)
unit\$		Specified unit
cmode		The result of the clamp mode

\* This command is effective only when LR8513 Wireless Clamp Logger.

#### Reference command (the LR8410,LR8416 command.)

##### (19) Sets and queries the clamp mode.

Syntax            (command)        :UNIT:CMODE unit\$,A\$  
                       (query)            :UNIT:CMODE? unit\$  
                       (response)       unit\$,A\$  
    unit\$=UNIT1 to UNIT7  
    A\$=INST,AVE

Explanation    Sets the mode for the channel designated by unit\$.  
                      Returns the current mode the unit designated by  
                      unit\$ as character data.

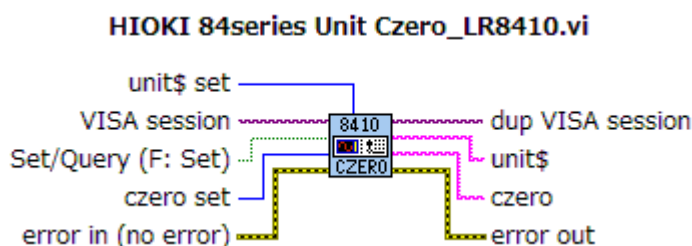
Example                :UNIT:CMODE UNIT1,INST  
                              Sets the mode for UNIT1 to INST.

Note                    This command is effective only when LR8513 Wireless Clamp Logger's registered  
 channel.

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#### 4-3-37. HIOKI 84series Unit Czero\_LR8410.vi

Sets or queries the clamp zero suppress.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
unit\$ set		Specifies the unit Valid range: 0(=UNIT1) to 6(=UNIT7)
czero set		Specifies the clamp zero suppress Valid range: 0(=OFF),1(=ON :Default)
unit\$		Specified unit
czero		The result of the clamp zero suppress

\* This command is effective only when LR8513 Wireless Clamp Logger.

Reference command (the LR8410,LR8416 command.)

(20) Sets and queries the clamp zero suppress.

Syntax (command) :UNIT:CZErO unit\$,A\$  
(query) :UNIT:CZErO? unit\$  
(response) unit\$,A\$  
unit\$=UNIT1 to UNIT7  
A\$=OFF,ON

Explanation Sets the zero suppress for the channel designated by unit\$.  
Returns the current zero suppress the unit designated by unit\$ as character data.

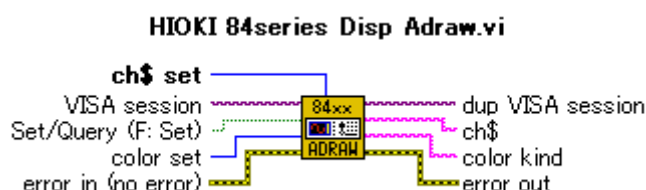
Example :UNIT:CZErO UNIT1,ON  
Sets the zero suppress for UNIT1 to ON.

Note This command is effective only when LR8513 Wireless Clamp Logger's registered channel

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#### 4-3-38. HIOKI 84series Disp Adraw.vi

Sets or queries waveform display color.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402) 0(=CH1_1) to 59(=CH4_15) Valid range: (LR8410,LR8416):0(=CH1_1) to 104(=CH7_15)
color set		Specifies the waveform display color. Valid range: 0(=OFF), 1(=C1) to 24(=C24)
ch\$		Specified channel
color kind		The result of querying the waveform display color

\* This Vi is included in Polymorphic Vi, HIOKI 84series Display Draw.vi.

\* LR8400,LR8401,LR8402

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

\*LR8410,LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit or LR8512 Wireless Pulse Logger or LR8513 Wireless Clamp Logger or LR8514 Wireless Humidity Logger or LR8515 Wireless Voltage/Temp Logger or LR8520 Wireless Fungal Logger's registered channel.

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Reference command (the LR8400,LR8401,LR8402 command.)

(5) Sets and queries the waveform display color.

Syntax (LR8400, LR8401, LR8402)

(command) :DISPlay:DRAWing ch\$, A\$

(query) :DISPlay:DRAWing? ch\$

(response) ch\$, A\$

ch\$=CH1\_1 to CH4\_15

A\$=OFF, C1 to C24

Syntax (LR8410, LR8416)

(command) :DISPlay:DRAWing ch\$, A\$

(query) :DISPlay:DRAWing? ch\$

(response) ch\$, A\$

ch\$=CH1\_1 to CH7\_15

A\$=OFF, C1 to C24

Explanation Sets the waveform display color for the channel designated by ch\$.

Returns the waveform display color for the channel designated by ch\$ as character data.

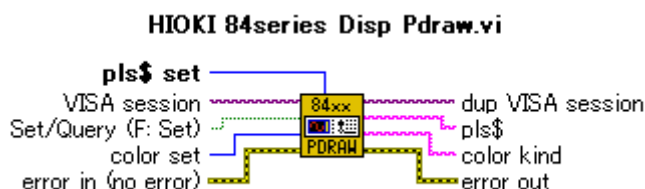
Example :DISPlay:DRAWing CH1\_1, C1

Displays the channel 1-1 waveform in display color 1.

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#### 4-3-39. HIOKI 84series Disp Pdraw.vi

Sets or queries pulse waveform display color.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
pls\$ set		Specifies the pulse channel Valid range: 0(=PLS1) to 7(=PLS8)
color set		Specifies the pulse waveform display color Valid range: 0(=OFF), 1(=C1) to 24(=C24)
pls\$		Specified pulse channel
color kind		The result of querying the pulse waveform display color

\* This Vi is included in Polymorphic Vi, HIOKI 84series Unit Store.vi.

Reference command (the LR8400,LR8401,LR8402 command.)

(6) Sets and queries the pulse waveform display color.

Syntax (command) :DISPlay:PDRAWing pls\$, A\$  
(query) :DISPlay:PDRAWing? pls\$  
(response) pls\$, A\$  
pls\$=PLS1 to PLS8  
A\$=OFF, C1 to C24

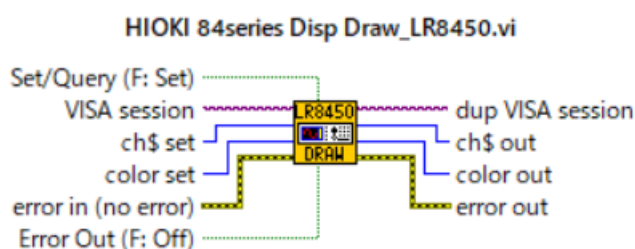
Explanation Sets the pulse waveform display color for the channel designated by pls\$.  
Returns the pulse waveform display color for the channel designated by pls\$ as character data.

Example :DISPlay:PDRAWing PLS1, C1  
Displays the pulse 1 waveform in display color 1.

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#### 4-3-40. HIOKI 84series Disp Draw.vi

Sets or queries waveform display color.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range:0(=CH1_1) to 119(CH4_30),120(R1_1)to 329(=R7_30) 330(=PLS1) to 337(PLS8),338(ALM1) to 345(ALM8),346(W1)to 375(W30)
color set		Specifies the waveform display color Valid range: 0(=OFF), 1(=C1) to 24(=C24)
ch\$ out		Specified channel
color out		The result of querying the waveform display color

\* This Vi is included in Polymorphic Vi, HIOKI 84series Unit Store.vi.

Reference command (the LR8450 command.)

(7) Sets and queries the waveform display color.

Syntax (command) :DISPlay:DRAWing ch\$, A\$  
(query) :DISPlay:DRAWing? ch\$  
(response) ch\$, A\$  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30, PLS1 to PLS8, LOG, ALM1toALM8, W1 to W30  
A\$=OFF, C1 to C24

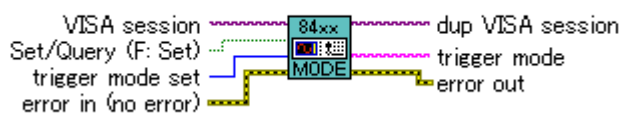
Explanation Sets the waveform display color for the channel designated by ch\$.  
Returns the waveform display color for the channel designated by ch\$ as character data.




Example :DISPlay:DRAWing CH1\_1,C1  
Displays the channel 1-1 waveform in display color 1.

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4-3-41. HIOKI 84series Trig Mode.vi  
Sets or queries trigger mode.

**HIOKI 84series Trig Mode.vi**



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
trigger mode set		Specifies the trigger mode Valid range: 0 (=SINGLE: Default), 1 (=REPEAT)
trigger mode		The result of querying the trigger mode

Reference command (the 8423,LR8400,LR8401,LR8402、LR8410,LR8416、LR8450)

(2) Sets and queries the trigger mode.

Syntax (command) :TRIGger:MODE A\$  
(query) :TRIGger:MODE?  
(response) A\$  
A\$=SINGle,REPEat

Explanation Sets the trigger mode.  
Returns the current trigger mode as character data.

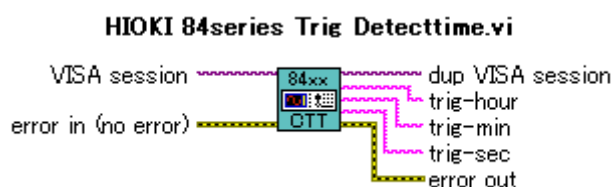
Example :TRIGger:MODE REPEat  
Sets the trigger mode to repeat.



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#### 4-3-42. HIOKI 84series Trig Detecttime.vi

Sets or queries the time point for trigger detection.



Name	Data type	Explanation
trig-hour		The result of querying the time(hour) for trigger detection
trig-min		The result of querying the time(minute) for trigger detection
trig-sec		The result of querying the time(second) for trigger detection
trig-ms (LR8450)		The result of querying the time(millisecond) for trigger detection

Reference command (the 8423,LR8400,LR8401,LR8402、LR8410,LR8416、LR8450)

(22) Sets and queries the time point for trigger detection.

Syntax (query) :TRIGger:DETECTTime?  
(response) A,B,C,D  
A=hour:0 to 23(hour)  
B=min :0 to 59(min)  
C=sec :0 to 59(sec)  
D=millisecond:0 to 999(millisecond) (only LR8450)  
hour,min,sec,millisecond<NR1>

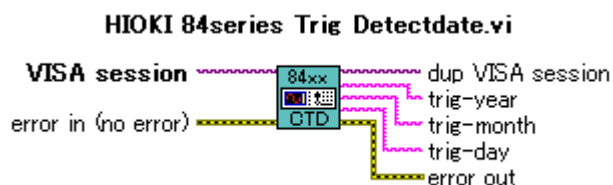
Explanation Returns the setting for the time point for trigger detection as a numerical value in NR1 format.

Example :TRIGger:DETECTTime?  
The currently set time point for trigger detection is

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#### 4-3-43. HIOKI 84series Trig Detectdate.vi

Sets or queries the date for trigger detection.



Name	Data type	Explanation
trig-year		The result of querying the date(year) for trigger detection
trig-month		The result of querying the date(month) for trigger detection
trig-day		The result of querying the date(day) for trigger detection

Reference command (the 8423,LR8400,LR8401,LR8402、LR8410,LR8416、LR8450)

(23) Sets and queries the date for trigger detection.

Syntax (command) :TRIGger:DETECTDate A,B,C  
(query) :TRIGger:DETECTDate?  
(response) A,B,C  
A=year :0 to 99(year)  
B=month:1 to 12(month)  
C=day :1 to 31(day)  
year,month,day<NR1>

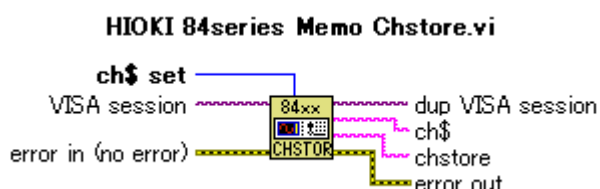
Explanation Returns the setting for the date for trigger detection as a numerical value in NR1 format.

Example :TRIGger:DETECTDate?  
The currently set date for trigger detection is queried.

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#### 4-3-44. HIOKI 84series Memo Chstore.vi

Queries stored record data for each channel.



Name	Data type	Explanation
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402) CH1_1 to CH4_15 Valid range: (LR8410,LR8416):CH1_1 to CH7_15,ALARM,W1 to W30 Valid range: (8423):UNIT1,CH1 to UNIT8,CH15 Valid range : (LR8450) : CH1_1 to CH4_30,R1_1 to R7_30PLS1 to PLS8, LOG, ALARM ,W1to W30
ch\$		Specified channel
chstore		Queries stored record data for each channel 0(=OFF),1(=ON)

Reference command (the 8423 command.)

#### (3) Queries stored record data for each channel.

Syntax (query) :MEMory:CHSTore? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=OFF(not stored),ON(stored)

Explanation Returns stored record data for each channel as character data.

Example (query) :MEMory:CHSTore? UNIT1,CH1  
(response) :MEMory:CHSTore UNIT1,CH1,ON(HEADER ON)  
The data of UNIT1,CH1 is stored in storage memory.

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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(3) Queries stored record data for each channel.

Syntax (LR8400,LR8401,LR8402)

(query) :MEMory:CHSTore? ch\$

(response) ch\$, A\$

ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8, LOG, ALARM, W1 to W30

A\$=OFF(not stored), ON(stored)

Syntax (LR8410,LR8416)

(query) :MEMory:CHSTore? ch\$

(response) ch\$, A\$

ch\$=CH1\_1 to CH7\_15, ALARM, W1 to W30

A\$=OFF(not stored), ON(stored)

Syntax (LR8450)

(query) :MEMory:CHSTore? ch\$

(response) ch\$, A\$

ch\$= CH1\_1 to CH4\_30, R1\_1 to R7\_30, PLS1 to PLS8, LOG, ALARM, W1 to W30

A\$=OFF(not stored), ON(stored)

Explanation Returns stored record data for each channel as character data.

Example (query) :MEMory:CHSTore? CH1\_1

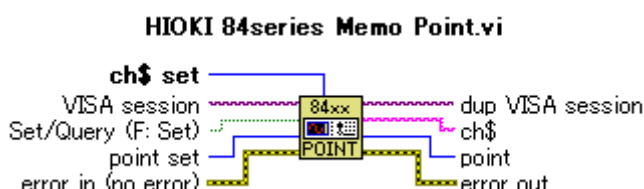
(response) :MEMory:CHSTore CH1\_1, ON(HEADER ON)

The data of CH1\_1 is stored in storage memory.

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#### 4-3-45. HIOKI 84series Memo Point.vi

Sets or queries the point in memory for input/output.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402) CH1_1 to CH4_15 Valid range: (LR8410,LR8416):CH1_1 to CH7_15,ALARM,W1 to W30 Valid range: (8423):UNIT1,CH1 to UNIT8,CH15 Valid range: (LR8450) : CH1_1 to CH4_30,R1_1 to R7_30PLS1 to PLS8, LOG, ALARM,W1to W30
point set		Specifies the number of points in memory for input/output. (can be set only to a value less than that returned by the HIOKI 84series Memo Maxpoint.vi)
ch\$		Specified channel
point		The result of querying the point in memory for input/output.

\* It becomes an execution error, when the channel is not data stored.

#### Reference command (the 8423 command.)

##### (1) Sets and queries the point in memory for input/output.

Syntax            (command)        :MEMory:POINT unit\$,ch\$,A  
                       (query)            :MEMory:POINT?  
                       (response)       unit\$,ch\$,A<NR1>  
    unit\$=UNIT1 to UNIT8  
    ch\$=CH1 to CH15  
    A=0 to 16777215(maximum at only 1 channel)

Explanation    Sets the input/output point in memory.  
                      Returns the current input/output point in memory as an NR1 numerical value.

Example                :MEMory:POINT UNIT1,CH1,100  
                              Sets the input/output point for unit1,channel 1 to the 100th location from the start of memory.

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Reference command (the LR8400,LR8401,LR8402, LR8410,LR8416,LR8450 command.)

(1) Sets and queries the point in memory for input/output.

Syntax (LR8400, LR8401, LR8402)

(command) :MEMory:POINt ch\$, A  
(query) :MEMory:POINt?  
(response) ch\$, A<NR1>  
ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8, LOG, ALARM, W1 to W30  
A=0 to 8388607 (maximum at only 1 channel)

Syntax (LR8410, LR8416)

(command) :MEMory:POINt ch\$, A  
(query) :MEMory:POINt?  
(response) ch\$, A<NR1>  
ch\$=CH1\_1 to CH7\_15, ALARM, W1 to W30  
A=0 to 8388607 (maximum at only 1 channel)

Syntax (LR8450)

(command) :MEMory:POINt ch\$, A  
(query) :MEMory:POINt?  
(response) ch\$, A<NR1>  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30, PLS1 to PLS8, LOG, ALARM, W1 to W30  
A=0 to 268435456 (maximum at only 1 channel)

Explanation Sets the input/output point in memory.  
Returns the current input/output point in memory as an NR1 numerical value.

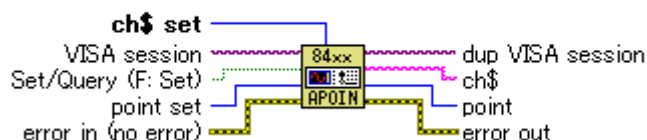
Example :MEMory:POINt CH1\_1, 100  
Sets the input/output point for unit1, channel 1-1 to the 100th location from the start of memory.

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#### 4-3-46. HIOKI 84series Memo Apoint.vi

Sets or queries the point in memory for input/output.  
(when longer data is stored than the inside memory)

##### HIOKI 84series Memo Apoint.vi



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel Valid range: (LR8400,LR8401,LR8402): CH1_1 to CH4_15 Valid range: (LR8410,LR8416):CH1_1 to CH7_15,ALARM,W1 to W30 Valid range: (8423):UNIT1,CH1 to UNIT8,CH15 Valid range(LR8450):CH1_1 to CH4_30,R1_1 to R7_30PLS1 to PLS8, LOG, ALARM, W1to W30
point set		Specifies the number of points in memory for input/output. (can be set only to a value less than that returned by the HIOKI 84series Memo Amaxpoint.vi)
ch\$		Specified channel
point		The result of querying the point in memory for input/output.

\* It becomes an execution error, when the channel is not data stored.

Reference command (the 8423 command.)

(12) Sets and queries the point in memory for input/output.

(when longer data is stored than the inside memory)

Syntax (command) :MEMory:APOINT unit\$,ch\$,A  
(query) :MEMory:APOINT?  
(response) ch\$,A (no return unit\$)  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A=0 to

Explanation Sets the input/output point in memory.

Returns the current input/output point in memory as an NR1 numerical value.

Example :MEMory:APOINT UNIT1,CH1,100

Sets the input/output point for unit1,channel 1 to the 100th location from the start of memory.

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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(12) Sets and queries the point in memory for input/output.  
(when longer data is stored than the inside memory)

Syntax (LR8400, LR8401, LR8402)

(command) :MEMory:APoint ch\$, A  
(query) :MEMory:APoint?  
(response) ch\$, A  
ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8, LOG, ALARM, W1 to W30  
A=0 to

Syntax (LR8410, LR8416)

(command) :MEMory:APoint ch\$, A  
(query) :MEMory:APoint?  
(response) ch\$, A  
ch\$=CH1\_1 to CH7\_15, ALARM, W1 to W30  
A=0 to

Syntax (LR8450)

(command) :MEMory:APoint ch\$, A  
(query) :MEMory:APoint?  
(response) ch\$, A  
ch\$= H1\_1 to CH4\_30, R1\_1 to R7\_30PLS1 to PLS8,  
LOG, ALARM, W1to W30  
A=0 to

Explanation Sets the input/output point in memory.  
Returns the current input/output point in memory as an NR1  
numerical value.

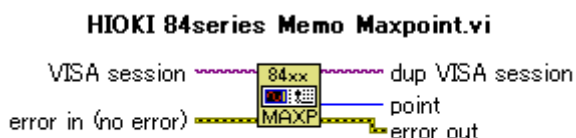
Example :MEMory:APoint CH1\_1,100  
Sets the input/output point for channel 1-1 to the 100th  
location from the start of memory.



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#### 4-3-47. HIOKI 84series Memo Maxpoint.vi

Queries the number of data samples stored.



Name	Data type	Explanation
point		The result of querying the number of data samples stored

Reference command (the 8423,LR8400,LR8401,LR8402, LR8410,LR8416,LR8450command.)

#### (2) Queries the number of data samples stored.

Syntax(8423)

(query) :MEMory:MAXPoint?  
(response) A <NR1>  
A = 0 : no data stored  
1 to 16777215

Syntax(LR8400,LR8401,LR8402,LR8400,LR8416)

(query) :MEMory:MAXPoint?  
(response) A <NR1>  
A = 0 : no data stored  
1 to 8388608

Syntax(LR8450)

(query) :MEMory:MAXPoint?  
(response) A <NR1>  
A = 0 : no data stored  
1 to 268435456

**Explanation** Returns the number of data samples stored in the memory as a numerical value in NR1 format.

**Example** (query) :MEMory:MAXPoint?  
(response) :MEMory:MAXPoint 800 (when headers are on)  
The number of data samples stored in the memory is 800.

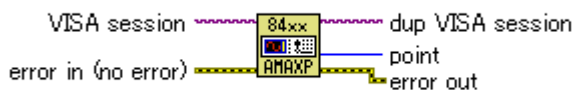
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#### 4-3-48. HIOKI 84series Memo Amaxpoint.vi

Queries the number of data samples stored.

(when longer data is stored than the inside memory)

#### HIOKI 84series Memo Amaxpoint.vi



Name	Data type	Explanation
point		The result of querying the number of data samples stored

Reference command (the 8423,LR8400,LR8401,LR8402, LR8410,LR8416,LR8450command.)

(13) Queries the end of data samples stored.

(when longer data is stored than the inside memory)

Syntax (query) :MEMory:AMAXPoint?

(response) A

A = 0 : no data stored

1 to

Explanation Returns the end of data samples stored in the memory as a numerical value in NR1 format.

Example (query) :MEMory:AMAXPoint?

(response) :MEMory:AMAXPoint 800 (when headers are on)

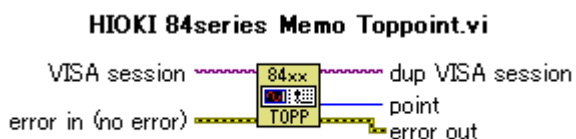
The end of data samples stored in the memory is 800.

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#### 4-3-49. HIOKI 84series Memo Toppoint.vi

Queries the top of data samples stored.

(when longer data is stored than the inside memory)



Name	Data type	Explanation
point		The result of querying the top of data samples stored

Reference command (the 8423,LR8400,LR8401,LR8402, LR8410,LR8416,LR8450command.)

(14) Queries the top of data samples stored.

(when longer data is stored than the inside memory)

Syntax (query) :MEMory:TOPPoint?

(response) A

A = 0 : no data stored

1 to

Explanation Returns the top of data samples stored in the memory as a numerical value in NR1 format.

Example (query) :MEMory:TOPPoint?

(response) :MEMory:TOPPoint 100 (when headers are on)

The top of data samples stored in the memory is 100.

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#### 4-3-50. HIOKI 84series Memo Adata.vi

Inputs data to memory, or outputs stored data.

##### HIOKI 84series Memo Adata.vi



Name	Data type	Explanation
output number		The number of data to output (8423,LR8400,LR8401,LR8402、LR8410,LR8416): Valid range: 1 to 80 (LR8450) : Valid range:1 to storage data num
adata array		The output of stored data *

\* Refer to MEMORY HiLOGGER command manual to get details.

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Reference command (the 8423,LR8400,LR8401,LR8402、LR8410,LR8416、LR8450 command.)

(5) Inputs data to memory, and outputs stored data. (ASCII)

Syntax (8423) (query) :MEMory:ADATa? A  
(response) B,C,... <NR1>  
B,C,... =-32768 to 32767(8949,8948 unit data)  
0 to 1000000000(8996 unit pulse data)  
0,1(8996 unit digital in data)  
0,1(8997 unit alarm out data)  
A=1 to 80(number of data values to be output)

Syntax (LR8400, LR8401, LR8402)

(query) :MEMory:ADATa? A  
(response) B,C,... <NR1>  
B,C,... =-32768 to 32767(CH1\_1 to CH4\_15)  
0 to 1000000000(PLS1 to PLS8)  
0 to 255(LOG)  
0 to 15(ALARM)  
wave calc=NR3(W1 to W30)  
A=1 to 80(number of data values to be output)

Syntax (LR8410, LR8416)

(query) :MEMory:ADATa? A  
(response) B,C,... <NR1>  
B,C,... =-32768 to 32767(CH1\_1 to CH7\_15)  
0 to 15(ALARM)  
wave calc=NR3(W1 to W30)  
A=1 to 80(number of data values to be output)

Syntax (LR8450)

(query) :MEMory:ADATa? A  
(response) B,C,... <NR1>  
B,C,... =-32768 to 32767(Analog)  
0 to 1000000000(Count, Revolve)  
0 to 255(Logic, Alarm)  
wave calc=NR3(W1 to W30)  
A=1 to 2000(number of data values to be output)

Explanation Puts the data of the data portion into the memory at the channel and point set by the :MEMory:POINt command.  
If there are several data values, they are input in order from the point set by the :MEMory:POINt command.  
The input/output point is incremented by the number of data values.  
The number of data values specified by A are output from the memory channel and point set by the :MEMory:POINt command. The input/output point is incremented by the number of data values.

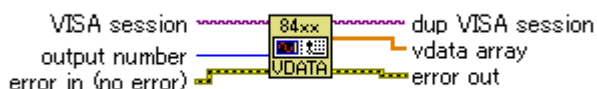
Example :MEMory:POINt CH1\_1,0  
:MEMory:ADATa? 10  
Sets the input/output point to unit 1, channel 1 and data value zero in memory, then outputs 10 stored data values.

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#### 4-3-51. HIOKI 84series Memo Vdata.vi

Inputs voltage data to memory, or outputs voltage data from memory.

##### HIOKI 84series Memo Vdata.vi



Name	Data type	Explanation
output number		The number of voltage data to output (8423,LR8400,LR8401,LR8402、LR8410,LR8416) Valid range: 1 to 40 (LR8450) Valid range: 1 to storage data num
vdata array		The output of voltage data from memory *

\* Refer to MEMORY HiLOGGER command manual to get details.

Reference command (the LR8410,LR8416,LR8450 command.)

#### (5) Output voltage data from memory.

(volt, tc, rtd, humid, resist)

Syntax (LR8410, LR8416)

```

(query)      :MEMory:VDAta? A
(response)   B, C, ... <NR3>
              B, C, ... =volt, tc, rtd, humid, resist, heat, count, revolve,
                  logic, current, temp, findex, fgrowth
                  (CH1_1 to CH7_15 analog data)
                  0 to 15 (ALARM alarm out data)
                  wave calc (W1 to W30 wave calc data)
              A=1 to 40 (data num)
  
```

Syntax (LR8450)

```

(query)      :MEMory:VDAta? A
(response)   B, C, ... <NR3>
              B, C, ... = Measurements
              A=1 to 1000 (data num)
  
```

**Explanation** The number of stored data values specified by A are output as voltage values from the memory channel and point set by the :MEMory:POINt command.  
The output point is incremented by the number of data values.

When scaling, the scaled values are output.

When calculating the waveform, calculated results are output.

**Example**

```

:MEMory:POINt CH1_1,0
:MEMory:VDAta? 10
  
```

Sets the output point to channel 1-1 and data value zero in memory, then outputs 10 stored data values as voltage values.

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Reference command (the 8423,LR8400,LR8401,LR8402 command.)

(6) Input voltage data to memory, and output voltage data from memory.

(volt, tc, rtd, humid, resist, count, revolve)

Syntax (8423)

```
(query)      :MEMory:VDAta? A
(response)    B, C, ... <NR3>
              B, C, ... =volt, tc, rtd, humid(8949, 8948 unit data)
                  count, revolve(8996 unit pulse data)
                  0, 1(8996 unit digital in data)
                  0, 1(8997 unit alarm out data)
              A=1 to 40(data num)
```

Syntax (LR8400, LR8401, LR8402)

```
(query)      :MEMory:VDAta? A
(response)    B, C, ... <NR3>
              B, C, ... =volt, tc, rtd, humid, resist(CH1_1 to CH4_15 analog data)
                  count, revolve(PLS1 to PLS8 pulse data)
                  0 to 255(LOG digital in data)
                  0 to 15(ALARM alarm out data)
                  wave calc(W1 to W30 wave calc data)
              A=1 to 40(data num)
```

Explanation Puts the data values (volt, tc, rtd, humid, resist, count, revolve values) in the data portion into the memory at the channel and point set by the :MEMory:POINt command.

If there are several data values, they are input in order from the point set by the :MEMory:POINt command.

The input/output point is incremented by the number of data values.

The number of stored data values specified by A are output as voltage values from the memory channel and point set by the :MEMory:POINt command.

The input/output point is incremented by the number of data values.

Example :MEMory:POINt CH1\_1,0

:MEMory:VDAta? 10

Sets the input/output point to channel 1-1 and data value zero in memory, then outputs 10 stored data values as voltage values.

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>88</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-3-52. HIOKI 84series Memo Getreal.vi

Captures real time data.



Name	Data type	Explanation
		There is no input and output except common inputs and common outputs

Reference command (the 8423,LR8400,LR8401,LR8402、LR8410,LR8416、LR8450command.)

(7) Captures real time data.

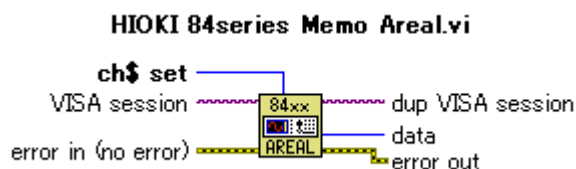
Syntax (command) :MEMory:GETReal

Explanation Captures the values which are currently input on the channel for all the channel.



DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>89</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

4-3-53. HIOKI 84series Memo Areal.vi  
Outputs real time data (in ASCII)



Name	Data type	Explanation
ch\$ set		Specifies the channel  Valid range: (LR8400,LR8401,LR8402) CH1_1 to CH4_15, PLS1 to PLS8,LOG,ALARM,W1 to W30  Valid range: (LR8410,LR8416):CH1_1 to CH7_15,ALARM,W1 to W30  Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)  Valid range(LR8450):CH1_1 to CH4_30,R1_1 to R7_30PLS1 to PLS8, LOG, ALARM, W1to W30
data		The output of real time data

\* When the [Captures real time data.] command is not executed before this command,  
the returned value is not fixed.

Reference command (the 8423 command.)

(8) Outputs real time data(ASCII)

Syntax(8423)

```
(command) :MEMory:AREAI? unit$,ch$
(response) A<NR1>
           unit$=UNIT1 to UNIT8
           ch$=CH1 to CH15
           A=-32768 to 32767(8949,8948 unit data)
           0 to 1000000000(8996 unit pulse data)
           0,1(8996 unit digital in data)
           0,1(8997 unit alarm out data)
```

Explanation Returns the value input on the channel designated by ch\$.

Example :MEMory:AREAI? UNIT1,CH1  
:MEMory:AREAI 2000(HEADER ON)

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>90</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(8) Outputs real time data(ASCII)

Syntax (LR8400, LR8401, LR8402)

(command) :MEMory:AREAI? ch\$

(response) A<NR1>

ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8, LOG, ALARM, W1 to W30

A=-32768 to 32767 (CH1\_1 to CH4\_15)

0 to 1000000000 (PLS1 to PLS8)

0 to 255 (LOG)

0 to 15 (ALARM)

wave calc=NR3 (W1 to W30)

Syntax (LR8410, LR8416)

(command) :MEMory:AREAI? ch\$

(response) A<NR1>

ch\$=CH1\_1 to CH7\_15, ALARM, W1 to W30

A=-32768 to 32767 (CH1\_1 to CH7\_15)

0 to 1000000000 (Count, Revolve)

0 to 1 (Logic)

0 to 15 (ALARM)

wave calc=NR3 (W1 to W30)

Syntax (LR8450)

(command) :MEMory:AREAI? ch\$

(response) A<NR1>

ch\$= CH1\_1toCH4\_30, R1\_1toR7\_30, PLS1toPLS8, LOG, ALARM, W1toW30

A=-32768 to 32767 (Analog)

0 to 1000000000 (Count, Revolve)

0 to 255 (Logic, ALARM)

wave calc=NR3 (W1 to W30)

Explanation Returns the value input on the channel designated by ch\$.

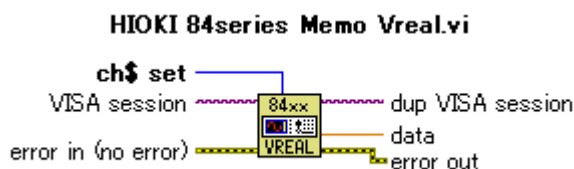
Example :MEMory:AREAI? CH1\_1

:MEMory:AREAI 2000 (HEADER ON)

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>91</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-3-54. HIOKI 84series Memo Vreal.vi

Outputs real time data (voltage values).



Name	Data type	Explanation
ch\$ set		Specifies the channel  Valid range: (LR8400,LR8401,LR8402) CH1_1 to CH4_15, PLS1 to PLS8,LOG,ALARM,W1 to W30  Valid range: (LR8410,LR8416):CH1_1 to CH7_15,ALARM,W1 to W30  Valid range: (8423):0(=UNIT1,CH1) to 119(=UNIT8,CH15)  Valid range(LR8450):CH1_1 to CH4_30,R1_1 to R7_30PLS1 to PLS8, LOG, ALARM, W1to W30
data		The output of real time data  (unit: V、°C)

\* When the [Captures real time data.] command is not executed before this command, the returned value is not fixed.

Reference command (the 8423 command.)

(9) Outputs real time data. (volt,tc,rtd,humid,count,revolve)

Syntax (command) :MEMory:VREAI? unit\$,ch\$  
(response) A<NR3>  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A=volt,tc,rtd,humid(8949,8948 unit data)  
count,revolve(8996 unit pulse data)  
0,1(8996 unit digital in data)  
0,1(8997 unit alarm out data)

Explanation Returns as a voltage value the value input on the channel designated by ch\$.

Example :MEMory:VREAI? UNIT1,CH1  
:MEMory:VREAI 4.7E-2(HEADER ON)

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>92</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

Reference command (the LR8400,LR8401,LR8402, LR8410,LR8416.LR8450 command.)

(9) Outputs real time data. (volt,tc,rtd,humid,resist,count,revolve)

Syntax(LR8400,LR8401,LR8402)

(command) :MEMory:VREAI? ch\$

(response) A<NR3>

ch\$=CH1\_1 to CH4\_15,PLS1 to PLS8,LOG,ALARM,W1 to W30

A=volt,tc,rtd,humid,resist(CH1\_1 to CH4\_15 analog data)

count,revolve(PLS1 to PLS8 pulse data)

0 to 255(LOG digital in data)

0 to 15(ALARM alarm out data)

wave calc(W1 to W30 wave calc data)

Syntax (LR8410,LR8416)

(command) :MEMory:VREAI? ch\$

(response) A<NR3>

ch\$=CH1\_1 to CH7\_15,ALARM,W1 to W30

A=volt,tc,rtd,humid,resist,heat,count,revolve,logic,

current,findex,fgrowth (CH1\_1 to CH7\_15 analog data)

0 to 15(ALARM alarm out data)

wave calc(W1 to W30 wave calc data)

Syntax (LR8450)

(command) :MEMory:VREAI? ch\$

(response) A<NR3>

ch\$= CH1\_1toCH4\_30,R1\_1toR7\_30, PLS1toPLS8,LOG, ALARM, W1toW30

A= Measurements

Explanation Returns as a voltage value the value input on the channel designated by ch\$.

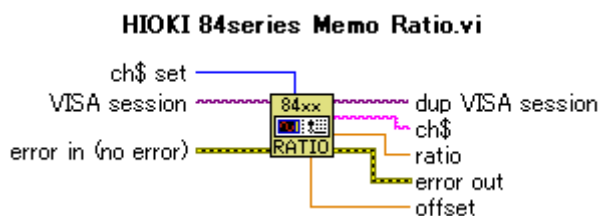
Example :MEMory:VREAI? CH1\_1

:MEMory:VREAI 4.7E-2(HEADER ON)

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>93</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-3-55. HIOKI 84series Memo Ratio.vi

Outputs ratio and offset



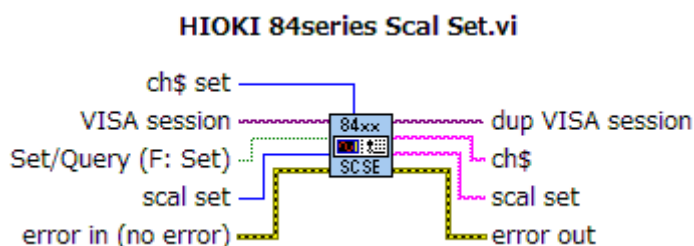
Name	Data type	Explanation
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range:0(=CH1_1) to 59(=CH4_15) (LR8410,LR8416) Valid range:0(=CH1_1) to 104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) to 119(=UNIT8,CH15) (LR8450) Valid range:0(=CH1_1)to119(CH4_30),120(R1_1)to 329(=R7_30)
ch\$		Specified channel
ratio		The output of ratio = A
Offset		The output of offset = B

$$*(\text{Physical value}) = A * (\text{Data}) + B$$

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>94</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-3-56. HIOKI 84series Scal Set.vi

Sets or queries the Scaling Kind.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range:0(=CH1_1) to 59(=CH4_15) (LR8410,LR8416) Valid range:0(=CH1_1) to 104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) to 119(=UNIT8,CH15) (LR8450) Valid range:0(=CH1_1) to119(CH4_30),120(R1_1)to 329(=R7_30) PLS1 to PLS8
scal set		Specifies the Scaling Kind. 0(=OFF),1(=ENG),2(=SCI)
ch\$		Specified channel
scal		The result of querying the Scaling Kind.

#### \*LR8400, LR8401, LR8402

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

#### \* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit.

#### \* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit or 8996 Digital Pulse Unit.

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>95</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(2) Sets and queries the scaling kind.

Syntax (LR8400, LR8401, LR8402)

(command) :SCALing:SET ch\$,A\$  
(query) :SCALing:SET? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8  
A\$=OFF, ENG, SCI  
(ENG=Dec, SCI=Exp)

Syntax (LR8410, LR8416)

(command) :SCALing:SET ch\$,A\$  
(query) :SCALing:SET? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH7\_15  
A\$=OFF, ENG, SCI  
(ENG=Dec, SCI=Exp)

Syntax (LR8450)

(command) :SCALing:SET ch\$,A\$  
(query) :SCALing:SET? ch\$  
(response) ch\$,A\$  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30, PLS1 to PLS8  
A\$=OFF, ENG, SCI  
(ENG=Dec, SCI=Exp)

Explanation Sets the scaling kind designated by ch\$.  
Returns the current scaling kind designated  
by ch\$ as a character string.

Example :SCALing:SET CH1\_1,ENG  
Sets the scaling kind for channel 1-1 to ENG(=Dec).

Reference command (the 8423 command.)

(2) Sets and queries the scaling kind.

Syntax (command) :SCALing:SET unit\$,ch\$,A\$  
(query) :SCALing:SET? unit\$,ch\$  
(response) unit\$,ch\$,A\$  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A\$=OFF,SCI,ENG

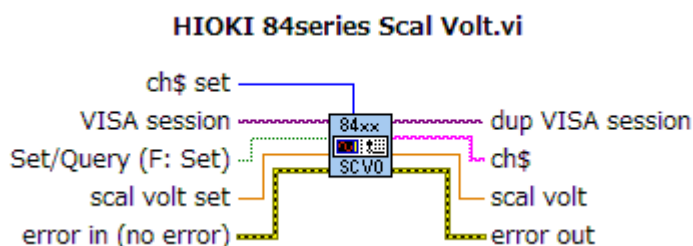
Explanation Sets the scaling kind designated by unit\$,ch\$.  
Returns the current scaling kind designated  
by unit\$,ch\$ as a character string.

Example :SCALing:SET UNIT1,CH1,ENG  
Sets the scaling kind for unit 1,channel 1 to ENG.

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>96</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-3-57. HIOKI 84series Scal Volt.vi

Sets or queries the scaling conversion value.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range:0(=CH1_1) to 59(=CH4_15) (LR8410,LR8416) Valid range:0(=CH1_1) to 104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) to 119(=UNIT8,CH15) (LR8450) Valid range:0(=CH1_1) to 119(CH4_30),120(R1_1)to 329(=R7_30) PLS1 to PLS8
scal volt set		Specifies the scaling conversion value
ch\$		Specified channel
scal volt		The result of querying the scaling conversion value

#### \*LR8400, LR8401, LR8402

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

#### \* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit.

#### \* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit or 8996 Digital Pulse Unit.



DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>97</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

Reference command (the LR8400,LR8401,LR8402, LR8410,LR8416,LR8450 command.)

(3) Sets and queries the scaling conversion value.

Syntax (LR8400, LR8401, LR8402)

(command) :SCALing:VOLT ch\$, A  
(query) :SCALing:VOLT? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8  
A=-9.9999E+9 to +9.9999E+9

Syntax (LR8410, LR8416)

(command) :SCALing:VOLT ch\$, A  
(query) :SCALing:VOLT? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH7\_15  
A=-9.9999E+9 to +9.9999E+9

Syntax (LR8450)

(command) :SCALing:VOLT ch\$, A  
(query) :SCALing:VOLT? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH4\_30, R1\_1 to R7\_30, PLS1 to PLS8  
A=-9.9999E+9 to +9.9999E+9

Explanation Sets the scaling conversion value for the channel designated by ch\$.

Returns the current scaling conversion value setting for the channel designated by ch\$ as an NR3 numerical value.

Example :SCALing:VOLT CH1\_1,+2.0E-3

Sets the scaling conversion value (eu/V) for channel 1-1 to +2.0E-3.

When allowed when the conversion scaling is set to RATIO.

Reference command (the 8423 command.)

(3) Sets and queries the scaling conversion value.

Syntax (command) :SCALing:VOLT unit\$,ch\$,A  
(query) :SCALing:VOLT? unit\$,ch\$  
(response) unit\$,ch\$,A<NR3>  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A=-9.9999E+9 to +9.9999E+9

Explanation Sets the scaling conversion value for the channel designated by unit\$,ch\$.

Returns the current scaling conversion value setting for the channel designated by unit\$,ch\$ as an NR3 numerical value.

Example :SCALing:VOLT UNIT1,CH1,+2.0E-3

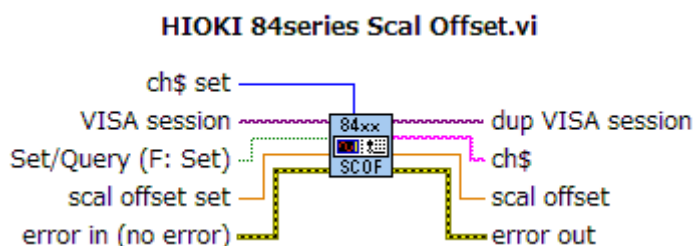
Sets the scaling conversion value (eu/V) for unit 1,channel 1 to +2.0E-3.

When allowed when the conversion scaling is set to RATIO.

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>98</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-3-58. HIOKI 84series Scal Offset.vi

Sets or queries the scaling offset.



Name	Data type	Explanation
Set/Query(F:Set)		Selects the setting or the querying function Valid range; False(=set: Default), True(=Query)
ch\$ set		Specifies the channel (LR8400,LR8401,LR8402) Valid range:0(=CH1_1) to 59(=CH4_15) (LR8410,LR8416) Valid range:0(=CH1_1) to 104(=CH7_15) (8423) Valid range:0(=UNIT1,CH1) to 119(=UNIT8,CH15) (LR8450) Valid range:0(=CH1_1) to 119(CH4_30),120(R1_1)to 329(=R7_30) PLS1 to PLS8
scal offset set		Specifies the scaling offset
ch\$		Specified channel
scal offset		The result of querying the scaling offset

#### \*LR8400, LR8401, LR8402

This command is effective only when LR8501 Universal Unit or LR8500 Volt/Temp Unit.

#### \* LR8410, LR8416

This command is effective only when LR8511 Wireless Universal Unit or LR8510 Wireless Volt/Temp Unit.

#### \* 8423

This command is effective only when 8949 Universal Unit or 8948 Volt/Temp Unit or 8996 Digital Pulse Unit.

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>99</b>
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Reference command (the LR8400,LR8401,LR8402,LR8410,LR8416,LR8450 command.)

(4) Sets and queries the scaling offset.

Syntax (LR8400, LR8401, LR8402)

(command) :SCALing:OFFSet ch\$, A  
(query) :SCALing:OFFSet? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH4\_15, PLS1 to PLS8  
A=-9.9999E+9 to +9.9999E+9

Syntax (LR8410, LR8416)

(command) :SCALing:OFFSet ch\$, A  
(query) :SCALing:OFFSet? ch\$  
(response) ch\$, A<NR3>  
ch\$=CH1\_1 to CH7\_15  
A=-9.9999E+9 to +9.9999E+9

Syntax (LR8450)

(command) :SCALing:OFFSet ch\$, A  
(query) :SCALing:OFFSet? ch\$  
(response) ch\$, A<NR3>  
ch\$= CH1\_1 to CH4\_30, R1\_1 to R7\_30, PLS1 to PLS8  
A=-9.9999E+9 to +9.9999E+9

Explanation Sets the scaling offset for the channel designated by ch\$.  
Returns the current scaling offset for the channel  
designated by ch\$ as an NR3 numerical value.

Example :SCALing:OFFSet CH1\_1, +1.0E-3  
Sets the scaling offset (eu offset) for channel 1-1 to +1. 0E-3.

When allowed when the conversion scaling is set to RATIO.

Reference command (the 8423 command.)

(4) Sets and queries the scaling offset.

Syntax (command) :SCALing:OFFSet unit\$,ch\$,A  
(query) :SCALing:OFFSet? unit\$,ch\$  
(response) unit\$,ch\$,A<NR3>  
unit\$=UNIT1 to UNIT8  
ch\$=CH1 to CH15  
A=-9.9999E+9 to +9.9999E+9

Explanation Sets the scaling offset for the channel designated by unit\$,ch\$.  
Returns the current scaling offset for the channel  
designated by unit\$,ch\$ as an NR3 numerical value.

Example :SCALing:OFFSet UNIT1,CH1,+1.0E-3  
Sets the scaling offset (eu offset) for unit 1,channel 1 to +1. 0E-3.

When allowed when the conversion scaling is set to RATIO.

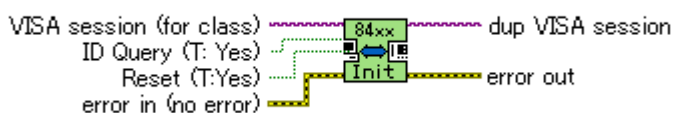
DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>100</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

4-4. The VI which is not in the program library.

4-4-1. HIOKI 84Series Initialize.vi

Opens the VISA session, Initializes the interface or the MEMORY HiLOGGER.

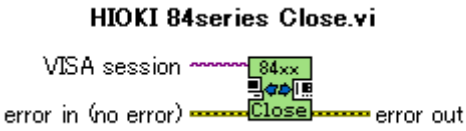
#### HIOKI 84series Initialize.vi



Name	Data type	Explanation
dup VISA session error in error out		The inputs and output are the same as the ones of the VI which is in the program library.
Instrument Descriptor (GPIP...		Specifies the resource name of unit.  The form:  TCP/IP : TCP/IP[number]::ip address::port number::SOCKET  USB : COM[number]
ID Query		Identifies the ID of unit.  Valid range: False, True(Default).
Reset		Resets the unit.  Valid range: False, True(Default).

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>101</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

4-4-2. HIOKI 84series Close.vi  
Closes the VISA session.




Name	Explanation
dup VISA session error in error out	The inputs and output are the same as the ones of the VI which is in the program library.

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HILOGGER</b>	PAGE <b>102</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-4-3. Wait.vi

Sets the waiting time.

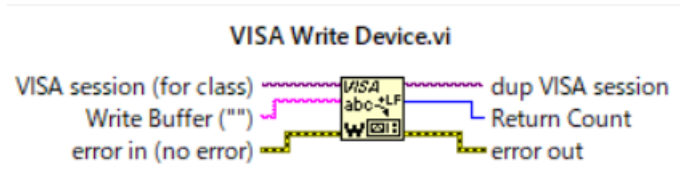




Name	Data type	Explanation
times(ms)		Specifies the waiting time (unit: ms)

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>103</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-4-4. Write.vi

Send the command to the instrument.



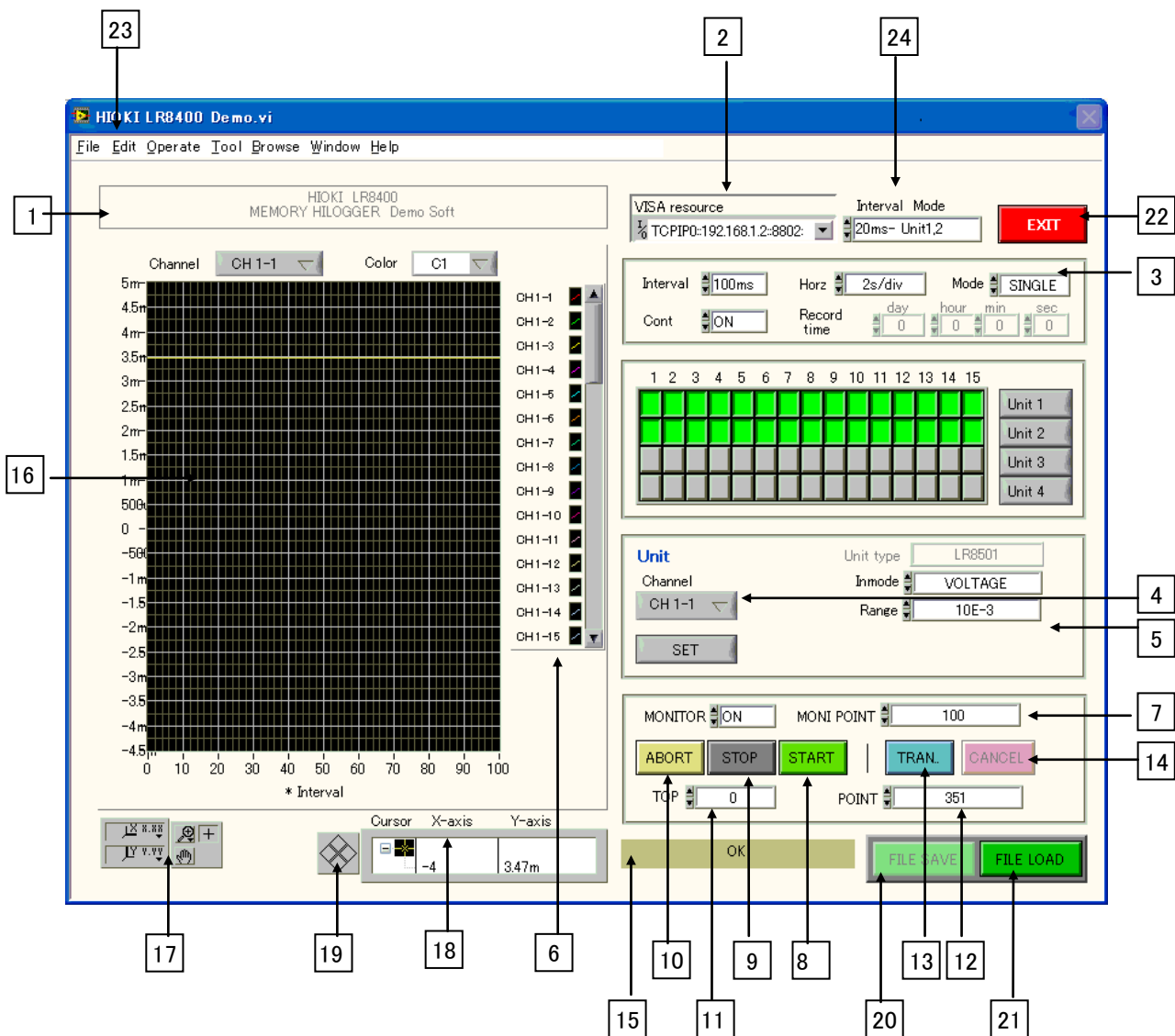
Name	Data type	Explanation
Write Buffer(")		The string of the command to send
Return Count		Actual number of bytes written

DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>104</b>
BACKGROUND	<b>HIOKI 84series LabVIEW Driver Manual (English)</b>	

#### 4-4-5 HIOKI LR8400 Demo.vi

It is a demo program for LR8400,LR8401,LR8402 MEMORY HiLOGGER

#### HIOKI LR8400 Demo.vi





DOCUMENT No.	TITLE <b>LR8410 WIRELESS LOGGING STATION, LR8416 HEAT FLOW LOGGER LR8400,LR8401,LR8402,LR8450,8423 MEMORY HiLOGGER</b>	PAGE <b>105</b>
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No	Function
1	It is a title.
2	Sets the TCPIP(LAN) or USB(COM)
3	(1) Shows and sets the Time Interval. (2) Shows and sets recording Time.
4	Sets the Channel Number.
5	Sets and queries items about channel. (1) RangeCH: Specified the channel. (2) Kind of unit: Shows the kind of unit. (3) Range: Shows and Specifies voltage axis range. (Unit: V,°C, Refer to LR8400 MEMORY HiLOGGER manual to get details.) ( It is necessary to press the SET button if the items have been specified.)
6	Sets the color of wave, and so on. Note: It is a standard function of LabVIEW
7	Sets the Graph Plot at START. MONITOR:OFF (Do not Graph Plot at START.) MONITOR:ON (Do Graph Plot of the newest data set up by MONI POINT at START.)
8	Performs starting (Same as the START key of the unit).
9	Performs stopping (Same as the STOP key of the unit).
10	Aborts processing
11	Sets start point for transmitting
12	Set the transmitting points of data
13	Transmits data
14	Cancels transmission.
15	Shows the performing condition of this program.
16	Shows Waveform Graph.
17	Changes the graph (enlargement, and so on) Note: It is a standard function of LabVIEW
18	Sets the kind of cursor, and so on. Note: It is a standard function of LabVIEW.
19	Moves the cursor. Note: It is a standard function of LabVIEW.
20	Saves data in a file. Note: It is invalid when there is no data in the graph.
21	Reads saved data from a file.
22	Exits this program
23	It is a menu Note: It is a standard function of LabVIEW
24	Time Interval Mode(Use Unit Mode) 10ms- Unit1: Only in the unit 1, the measurement from 10ms is possible. 20ms- Unit1,2: Only in the unit 1,2, the measurement from 20ms is possible. 50ms- Unit1,2,3,4: In the unit 1,2,3,4 the measurement from 50ms is possible.

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The process of transmitting data from unit.

1. Opens the HIOKI 84series DEMO\_LR8400.vi.
2. Sets the TCP/IP(LAN) or USB(COM) address.
3. Runs the HIOKI 84series DEMO\_LR8400.vi.
4. Sets necessary items for LR8400 MEMORY HiLOGGER.
5. Sets transmitting channel.
6. Presses the START button and Presses the STOP button, then presses the TRAN. Button.
7. In Demo Program, scaling does not start a measurement voltage value. For acquiring the measurement voltage value which required scaling, it is :MEMory:ADATa? Please use :MEMory:VDATa? that there is nothing then. In this case, a data transfer rate will become slow 3 times.

**Note:**

The maximum transmitting points of data is set to 100001.

It is necessary to set the header to OFF before running HIOKI 84series DEMO\_LR8400.vi

All the button are invalid except for FILE LOOD button/FILE SAVE button/EXIT button, when there is a error in communication.

All the button are invalid except for CANNEL button, when the No15 is displaying "Transmitting".

All the button are invalid except for ABORT button/STOP button/EXIT button/TRANS button, when the No15 is displaying "Storing".

The FILE SAVE button is invalid when there is no data in the graph.

It can be aborted if the Ctrl key and the . key are pressed at the same time.

It is necessary to close LabVIEW then perform 1-6 if the HIOKI 84series DEMO\_LR8400.vi is aborted or the VISA of LabVIEW is in error, before running the HIOKI 84series DEMO\_LR8400.vi again.

The top data number which remains in the internal memory, and the data number of an end are displayed No.15 like "Storing 0-1000" the case where data is acquired by "TRANS" during measurement.

When a top data number is not 0, it is in the state which has overwritten data new to the oldest data of an internal memory. in this case -- the data number specified by TOP -- first number + the number of data for about ten seconds. if it does not do so, it will be displayed, as the acquired data may be returned by the data of zero of 16-bit A/D and the waveform displayed shook off to the direction under a screen.

(Although the number of data for 10 seconds is added by this DEMO soft in consideration of the above, please increase, when insufficient.)

Since the ABORT key and the STOP key are hard coming to be effective when MONITOR is turned ON, in that case, please turn OFF MONITOR and use it.

LR8400 can be measured in the units 1, 2, 3, and 4 from 50 ms, which can measure only the units 1 and 2 in 20ms, which can measure only the unit 1 in 10ms.

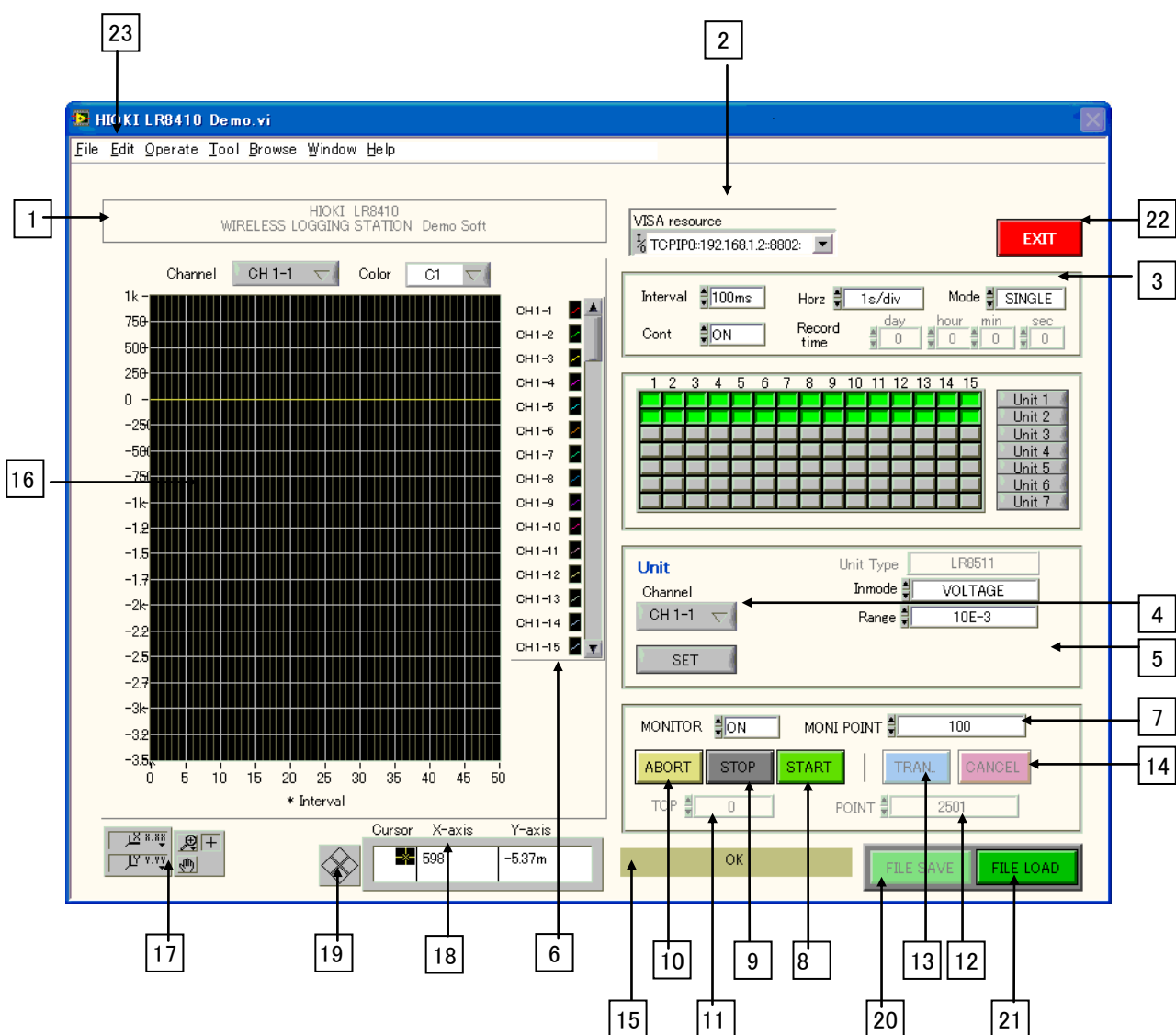
Please perform HIOKI 84series DEMO\_LR8400.vi after setting up such record interval modes (use unit mode) by Interval Mode.

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#### 4-4-6 HIOKI LR8410 Demo.vi

It is a demo program for LR8410 WIRELESS LOGGING STATION

#### HIOKI LR8410 Demo.vi

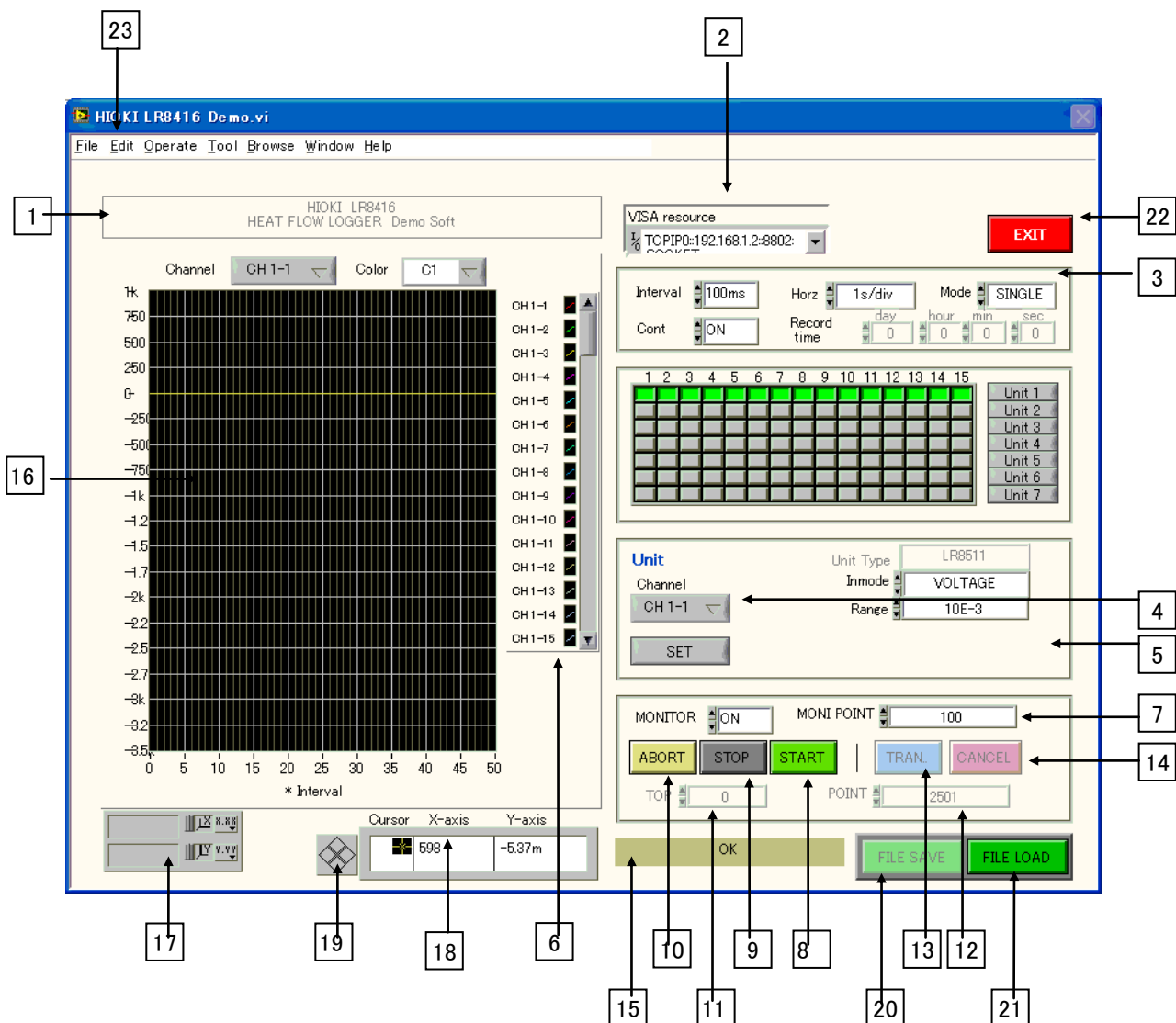


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#### 4-4-7 HIOKI LR8416 Demo.vi

It is a demo program for LR8416 HEAT FLOW LOGGER

#### HIOKI LR8416 Demo.vi

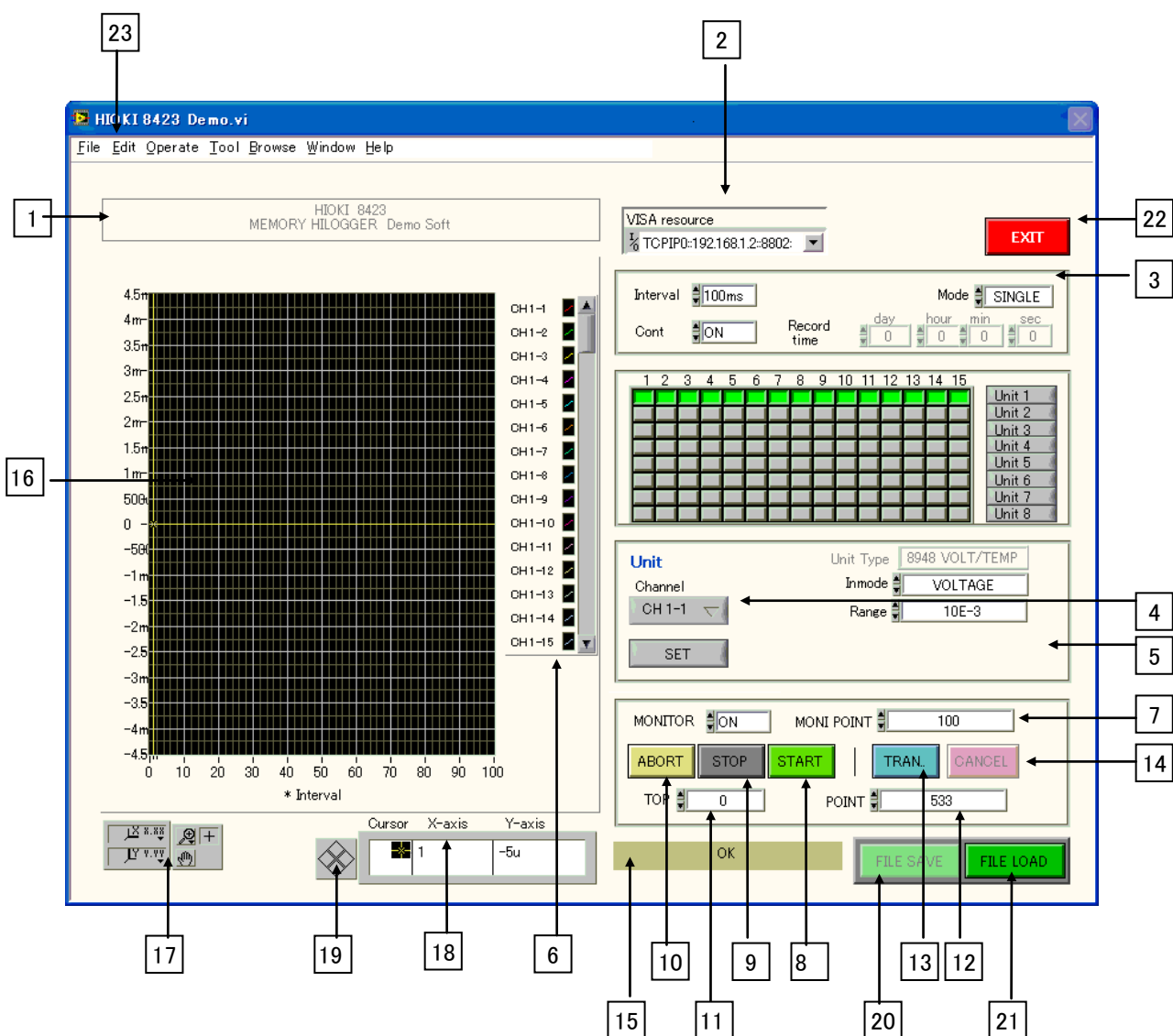


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#### 4-4-8 HIOKI 8423 Demo.vi

It is a demo program for 8423 MEMORY HILOGGER

#### HIOKI 8423 Demo.vi



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#### 4-4-9 HIOKI LR8450 Demo.vi

It is a demo program for LR8450 MEMORY HILOGGER

#### HIOKI LR8450 Demo.vi

