HIOKI

MR8740T MEMORY HiCORDER
Driver Function
User's Manual

Revision History

Edition	Contents	Reviser	Date
1.00	First Edition	HIOKI	2019/3/15

Contents

1. Overview

This program can change the settings and query the MEMORY HiCORDER (hereinafter, measurement device) from the computer using the TCP/IP.
The program is divided into multiple VI according to the functions.

2. Precondition

The following requirement needs to be met when using this program.
• Experience in program development using LabVIEW

3. Driver Explanation

3.1 Driver Common Input & Output

3.1.1 Input Items

Name	Data Type	Explanation
VISA Resource		TCP/IP Connection ID
Set/Query		Specify whether to set the program operating mode to the set mode for the device, or to query the settings of the device. Input Range: False (Set: Default), True (Query)
error in		Please refer the LabVIEW online reference's section on error report for a detailed explanation on error input. Default Value: no error

3.1.2 Output Items

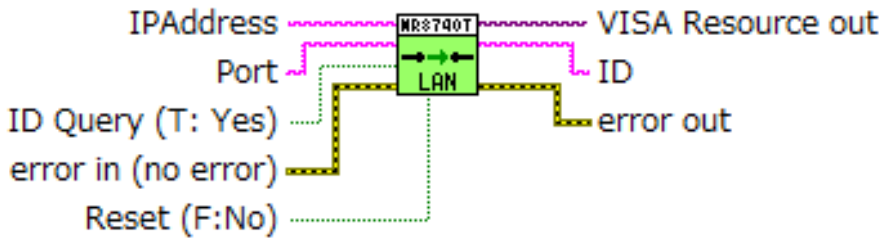
Name	Data Type	Explanation
VISA Resource out		TCP/IP Connection ID
error out		Please refer the LabVIEW online reference's section on error report for a detailed explanation on error output. When MR8740T cannot be set properly, output error code (1300). Errors may be caused by: ・During starting waveform sampling. ・Restrictions imposed by the availability of options ・Affected by other settings for others Please confirm with the MR8740T instruction manual.

3.2 Common VI

Contains VIs for common commands.

3.2.1 HIOKI MR8740T Initialize LAN.vi

Starts the communication with the MR8740T device.



Input

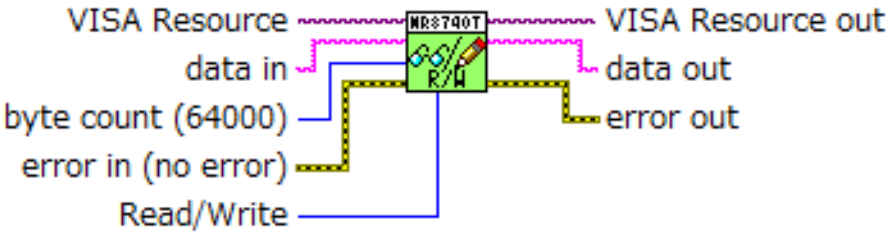
Name	Data Type	Explanation
IP Address	abc	Specify the MR8740T IP Address. The default setting is 192.168.1.1.
Port	abc	Specify the MR8740T Port. The default setting is 8802.
ID Query	TF	Output the connection device's ID.
Reset	TF	Send the *RST command to the connection device and reset the settings. The default setting is False (NO).

Output

Name	Data Type	Explanation
ID	abc	Return the device's ID. Valid when the ID Query is True.

3.2.2 HIOKI MR8740T Read_Write.vi

Transmit the commands (reading and writing the data) to the MR8740T.



Input

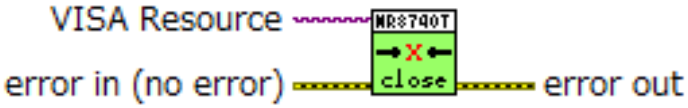
Name	Data Type	Explanation
Read/Write		Set the mode. Input Range: 0 (Read: Default), 1 (Write) Read: Receiving the data. Write: Sending the data.
byte count	U32	Specify the amounts of receiving bytes at the Read mode. The default setting is 64000.
Data in	abc	Specify the sending commands to the MR8740T at the Write mode. Any commands can be sent. Please refer to the Communication commands manual at the HIOKI home page.

Output

Name	Data Type	Explanation
Data out	abc	Output the data received from the MR8740T at the Read mode.

3.2.3 HIOKI MR8740T Close.vi

Disconnects the communication with the MR8740T device.

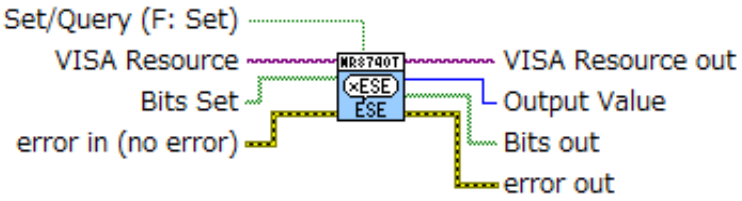


3.2.4 HIOKI MR8740T CLS.vi

Clears the event register.

3.2.5 HIOKI MR8740T ESE.vi

Sets and reads the mask pattern of Standard Event Status Enable Register (SESER).



Input

Name	Data Type	Explanation
Bits Set	[TF]	Set the enable bit pattern for SESER.

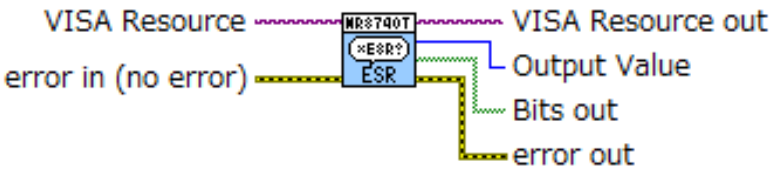
Output

Name	Data Type	Explanation
Output Value	U8	Output the value from the enable bit of SESER
Bits out	[TF]	Output the enable bit pattern of SESER.

Note:
・The initial (power-on) value is 0.
・SESER doesn't affect Standard Event Status Register (SESR), but affect status byte.

3.2.6 HIOKI MR8740T ESR.vi

Returns and clears the contents of the Standard Event Status Register (SESR).



Output

Name	Data Type	Explanation
Output Value	U8	Outputs the query results of the SESR as numerical values.
Bits out	[TF]	Outputs the query results of the SESR in Boolean Array. bit7(PON): Power On Flag Turns to 1 when power is switched on or when power is returned after a blackout. bit6(URQ): User Request Not available in the MR8740T. bit5(CME): Command Error (Ignores commands up to the message terminator) Turns to 1 when there are syntactical and command errors in the received commands. ・When there is an error in the program header ・When the number of data is different from specified. ・When the data type is different from the specified type bit4(EXE): Execution error Turns to 1 when the command cannot be executed for whatever reason. ・When the specified data is outside the set range ・When the specified data cannot be set bit3(DDE): Device-dependent error Turns to 1 when the command cannot be executed due to causes other than a command error, query error or execution error. ・When there is an internal problem and the command could not be executed bit2(QYE): Query error Turns to 1 when the error is detected by the output cue control part. ・When the data inundated the output cue bit1(RQC): Request for controller right Not available in the MR8740T. bit0(OPC): Operation completed Only set for the *OPC command.

3.2.7 HIOKI MR8740T IDN.vi

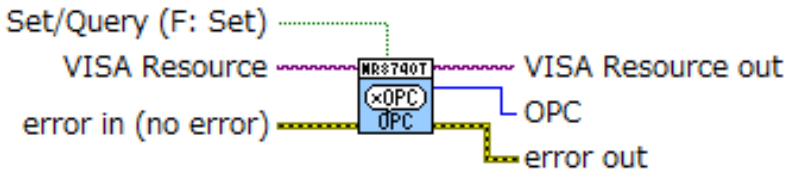
Queries the Device ID.

Output

Name	Data Type	Explanation
ID out	abc	Outputs the query results. Output Items: < Manufacturer >, <Model>, <Serial Number>, <Software Version>

3.2.8 HIOKI MR8740T OPC.vi

At the set mode, this VI sets the LSB (bit 0) of the Standard Event Status Register (SESR) after all commands processing.
At the query mode, this VI outputs 1 after processing all commands before this VI.



Output

Name	Data Type	Explanation
OPC	I32	Returns 1.

3.2.9 HIOKI MR8740T OPT.vi

Queries the option types attached to the MR8740T.

Output

Name	Data Type	Explanation
OPT	abc	Outputs the query results of the options. Output Items: <Unit 1>, <Unit 2>, ... ,<Unit 27>

Note

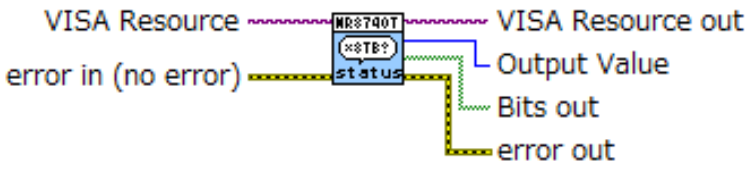
・"NONE" is returned when no input module is present.

3.2.10 HIOKI MR8740T RST.vi

Sets the various device settings to factory defaults.

3.2.11 HIOKI MR8740T STB.vi

Reads the status byte. Each bit of the status byte is a summary (logical OR) of the event register corresponding to that bit.

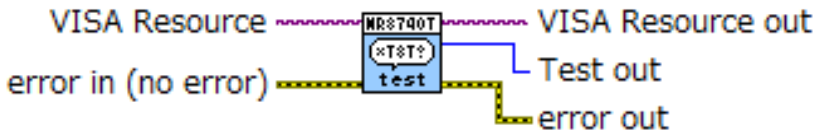


Output

Name	Data Type	Explanation
Output Value	U8	Outputs the query results of the status byte as numerical values.
Bits out	[TF]	Outputs the query results of the status byte in Boolean array. bit 7 Unused: 0 bit 6 (RQS, MSS) Reserved bit 5 (ESB) Event summary bit. This bit shows a summary of the Standard Event Status Register. bit 4 (MAV) Message available. This bit shows that a message is present in the output queue. bit 3 bit 2 bit 1 Unused: 0 bit 0 (ESB0) Event summary bit 0. This bit shows a summary of Event Status Register 0.

3.2.12 HIOKI MR8740T TST.vi

Reads the result of a memory check.



Output

Name	Data Type	Explanation
Test out	I32	Outputs the query results of a memory check as numerical values. Output range: 0(Normal), 1(Abnormal)

Note:

・It takes about several minutes for the response result to be returned.

3.2.13 HIOKI MR8740T WAI.vi

Waits until the previous processing is completed.

3.3 General VI

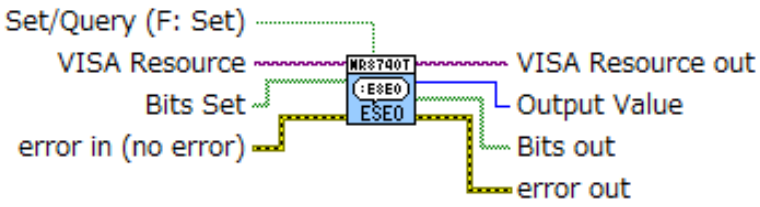
Contains VIs related to execution processing.

3.3.1 HIOKI MR8740T ABORT.vi

Halts operation even if waveform sampling has not yet finished.

3.3.2 HIOKI MR8740T ESE0.vi

Sets and reads the Event Status Enable Register 0 (ESER0).



Input

Name	Data Type	Explanation
Bits Set	[TF]	Sets the mask pattern of ESER0.

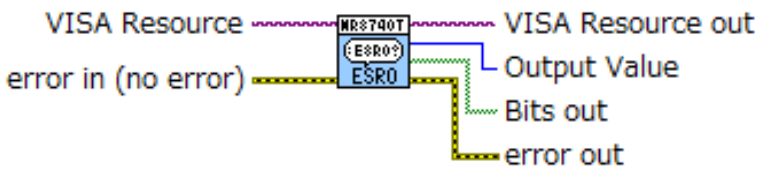
Output

Name	Data Type	Explanation
Output Value	U8	Outputs the query results of the ESER0 as numerical values.
Bits out	[TF]	Outputs the query results of the ESER0 in Boolean array.

Note:
・The initial (power-on) value is 0.
・ESER0 doesn’t affect Event Status Register 0 (ESR0), but affect the status byte.

3.3.3 HIOKI MR8740T ESR0.vi

Reads and clears the Event Status Register 0 (ESR0).



Output

Name	Data Type	Explanation
Output Value	U8	Outputs the query results of the ESR0 as numerical values.
Bits out	TF]	Outputs the query results of the ESR0 in Boolean array. bit 7 Reserved. bit 6 FAIL parameter decision occurred. bit 5 Parameter calculation finished. bit 4 Waveform processing calculation finished. bit 3 Reserved. bit 2 Trigger wait finished. (Set when a trigger event occurs.) bit 1 Measurement operation concluded. (Set by STOP.) bit 0 Error not related to communication.

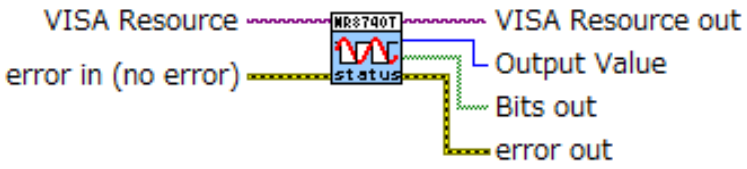
3.3.4 HIOKI MR8740T START.vi

Starts the waveform sampling.

Note:
・Use the STOP.vi and wait for measurement to stop, and then use other VIs.

3.3.5 HIOKI MR8740T Status.vi

Reads the current storage status of the measurement device.



Output

Name	Data Type	Explanation
Output Value	U8	Outputs the query results of the storage status as numerical values.
Bits out	TF	Outputs the query results of the storage status in Boolean array. bit 5: File accessing. bit 4: Reserved. bit 3: Pre-trigger wait period. bit 2: Awaiting trigger. bit 1: Storing. bit 0: Starting.

3.3.6 HIOKI MR8740T STOP.vi

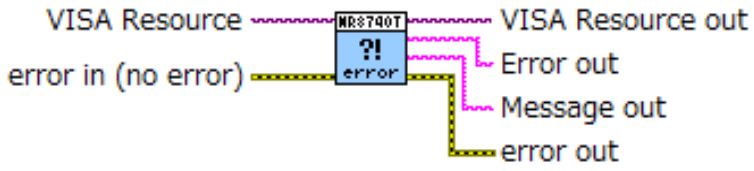
Terminates measurement as soon as the current waveform sampling operation has finished. This VI has the same function as the STOP key on the measurement device.

3.3.7 HIOKI MR8740T Save.vi

Performs the save operation assigned to the SAVE function. This VI works the same as the SAVE function of the measurement device.

3.3.8 HIOKI MR8740T Error.vi

Returns the error or warning number that occurred in the measurement device. For errors or warnings, please refer to the instruction manual of the main unit.



Output

Name	Data type	Explanation
Error out	abc	Output error or warning number.
Message out	abc	Output error or warning message.

3.4 Calculate VI

Contains VIs related to math.

3.4.1 HIOKI MR8740T Calc Answer.vi

Reads the result of numerical operation.

Input

Name	Data type	Explanation
Read Calc		Specify the numerical operation number and CH to be acquired. Input range: Calc No.:No.1～No.108 CH:CH1_1 ～ CH27_4, L25A1 ～ L27D4, Z1～Z16, XY, OPE, ANG

Output

Name	Data type	Explanation
Read Calc out		Outputs the numerical operation number and CH to be acquired. Output range: Calc Kind: Operation type Calc value:Calculation result value

3.4.2 HIOKI MR8740T Calc Judge.vi

Returns the result of numerical judgment.

Input

Name	Data type	Explanation
Read Calc		Specify the numerical operation number and CH to be acquired. Input range: Calc No.:ALL, No.1～No.108 CH:CH1_1 ～ CH27_4, L25A1 ～ L27D4, Z1～Z16, XY, OPE, ANG

Output

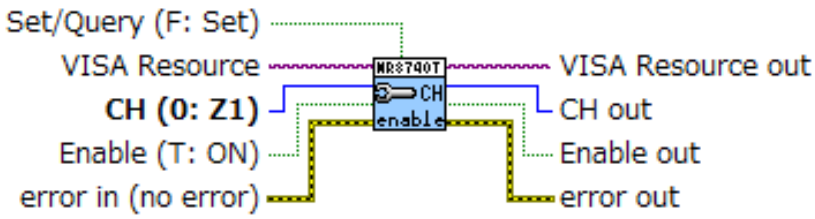
Name	Data type	Explanation
Read Calc out		Outputs the numerical operation number, CH to be acquired and the result of numerical judgement. Output range: Calc Kind:Operation type Calc judge:Calculation judgment value

3.5 Configure VI

Contains VIs related to the device setting.

3.5.1 HIOKI MR8740T Conf CHenable.vi

Sets and reads the ON/OFF of the measurement channels.



Input

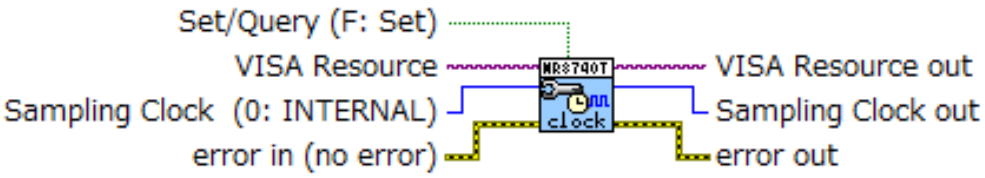
Name	Data Type	Explanation
CH		Specifies the measurement channel. Input Range: 0～15 (Z1～Z16)
Enable		Sets the ON/OFF. Input Range: True (ON: Default), False (OFF)

Output

Name	Data Type	Explanation
CH out		Outputs the query results of the measurement channel specified by CH.
Enable out		Outputs the query results of the ON/OFF of the specified CH.

3.5.2 HIOKI MR8740T Conf Clock.vi

Sets and reads the sampling clock.



Input

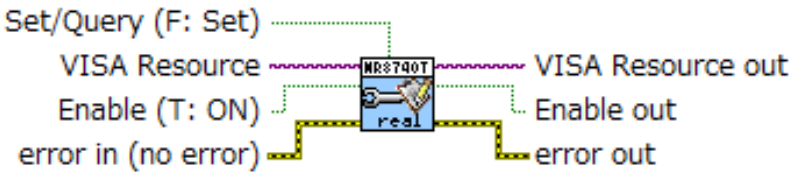
Name	Data Type	Explanation
Sampling Clock		Sets the sampling clock and the slope direction for the EXTERNAL sampling. Input Range: 0 (INTERNAL: Default), 1 (EXTERNAL(↑)), 2(EXTERNAL(↓))

Output

Name	Data Type	Explanation
Sampling Clock out		Outputs the query results of the sampling clock and the slope direction for the EXTERNAL sampling.

3.5.3 HIOKI MR8740T Conf Realtime.vi

Sets and reads the real-time save.



Input

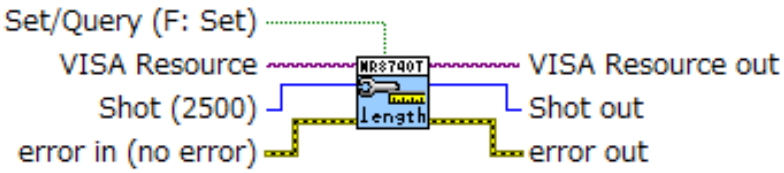
Name	Data Type	Explanation
RealTime	TF	Sets the real-time save. Input range: True (ON: Default), False (OFF)

Output

Name	Data Type	Explanation
RealTime out	TF	Outputs the query results of the real-time save.

3.5.4 HIOKI MR8740T Conf Shot.vi

Sets and reads the size of the recording length.



Input

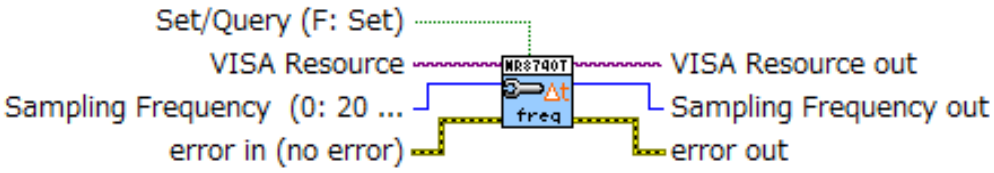
Name	Data Type	Explanation
Shot	I32	Sets the size of the recording length. Input range: 100～16777200 (2500: Default)

Output

Name	Data Type	Explanation
Shot out	I32	Outputs the query results of the size of the recording length.

3.5.5 HIOKI MR8740T Conf SamplingFreq.vi

Sets and reads the measurement sampling rate. This VI can be selected from the selector of the polymorphic VI, “Conf Sampling.vi”.



Input

Name	Data type	Explanation
Sampling Frequency		Sets the measurement sampling rate. Input range：1S/s～ 20MS/s (20MS/s: Default)

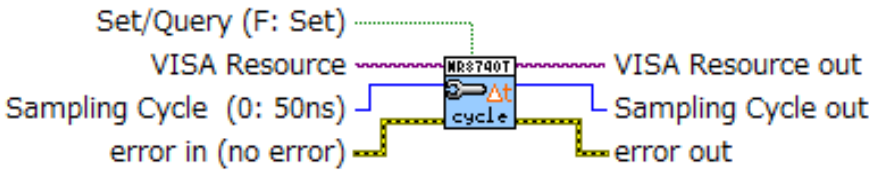
Output

Sampling Frequency out		Outputsthe query results of the measurement sampling rate.

Note:
・If a value not specified in the setting is specified, if there is a range higher than the value to be set, the closest range is set.
・The setting status of real-time storage limits the range that can be set.

3.5.6 HIOKI MR8740T Conf SamplingCycle.vi

Sets and reads out the measurement sampling cycle. This VI can be selected from the selector of the polymorphic VI, “Conf Sampling.vi”.



Input

Name	Data type	Explanation
Sampling Cycle		Sets the measurement sampling cycle. Input range: 50ns～ 1s (50ns: Default)

Output

Sampling Cycle out		Outputs the query results of the measurement sampling cycle.

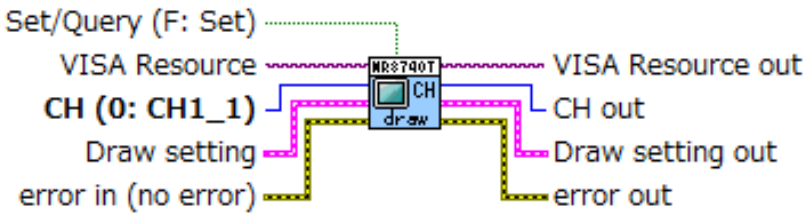
Note:
・If a value not specified in the setting is specified, if there is a range higher than the value to be set, the closest range is set.
・The setting status of real-time storage limits the range that can be set.

3.6 Display VI

Contains VIs related to the display setting.

3.6.1 HIOKI MR8740T Disp Draw.vi

Set and read out the waveform display color.



Input

Name	Data type	Explanation
CH		Specify the channel to set the waveform display color. Input range: 0～107 (CH1_1 ～ CH27_4), 108～155 (L25A1 ～ L27D4), 156～171 (Z1～Z16)
Draw setting		Specify waveform display and color Input range: Enable:True (ON: Default), False (OFF) Color: Select from the palette.

Output

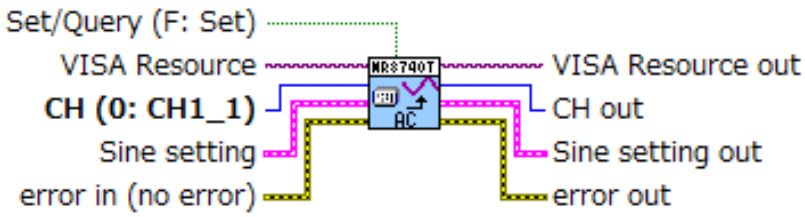
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
Draw setting out		Outputs the query result of the waveform color of the channel specified by CH is output.

3.7 Generator VI

Includes VIs for waveform generation.

3.7.1 HIOKI MR8740T GEN Sine.vi

Sets and reads out sine wave output. This VI can be selected from the selector of the polymorphic VI “GEN WaveGenerate.vi”.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～107 (CH1_1 ～ CH27_4)
Sine setting		Set the sine wave output. Input range： Output：True (ON: Default), False (OFF) Amplitude (Vpp)：0.000～20.000 Offset (V)：-10.000～10.000 Frequency (Hz)：0～20000

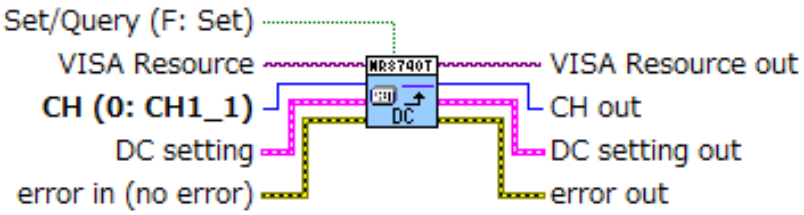
Output

Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
Sine setting out		Output the sine wave output result of the channel specified by CH.

Note:
・It can be used with the waveform generation unit (MR8790).
・The voltage that can be generated is "amplitude + offset", and the upper limit is + 10V and the lower limit is -10V.

3.7.2 HIOKI MR8740T GEN DC.vi

Set and read DC output. This VI can be selected from the selector of the polymorphic VI “GEN WaveGenerate.vi”.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～107 (CH1_1 ～ CH27_4)
DC setting		Set the DC output. Input range： Output：True (ON: Default), False (OFF) Voltage (V)：-10.000～10.000

Output

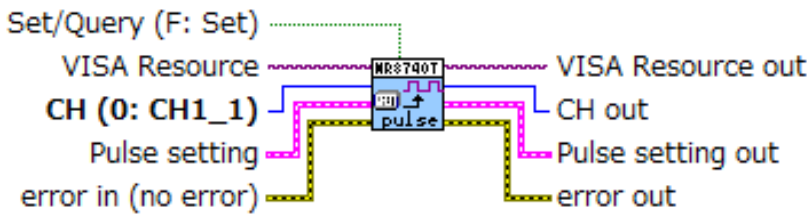
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
DC setting out		Output the DC output result of the channel specified by CH.

Note:

・It can be used with the waveform generation unit (MR8790).

3.7.3 HIOKI MR8740T GEN Pulse.vi

Set and read out pulse wave output.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)
Pulse setting		Set the pulse wave output. Input range： Output：True (ON: Default), False (OFF) Duty (%)：0.0～100.00 Frequency (Hz)：0.0～20000.0 Output Config: 0(TTL: Default), 1(OC)

Output

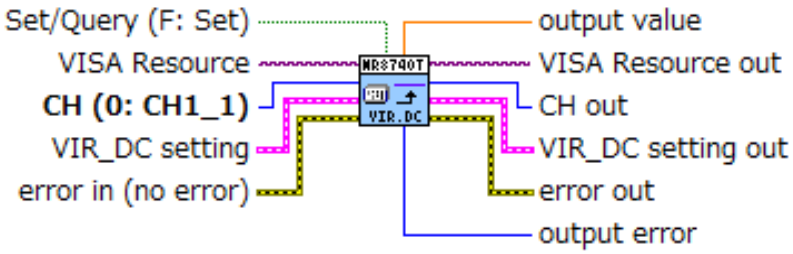
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
Pulse setting out		Output the pulse wave output result of the channel specified by CH.

Note

・It can be used with pulse generation unit (MR8791).

3.7.4 HIOKI MR8740T GEN VIR_DC.vi

Sets and reads out the DC output of the VIR unit. This VI can be selected from the selector of the polymorphic VI “GEN VIR_Generate.vi”.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)
VIR_DC setting		Set the DC output. Input range： Output：True (ON: Default), False (OFF) Level (V)：-0.1000～5.5000

Output

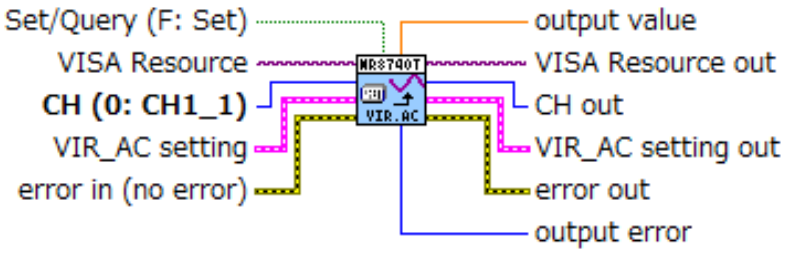
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
VIR_DC setting out		Output the DC output result of the channel specified by CH.
output value		Outputs the signal level being output.
output error		Output the output status.

Note:

・It can be used with the VIR unit (U8794).

3.7.5 HIOKI MR8740T GEN VIR_AC.vi

Sets and reads out the AC output of the VIR unit. This VI can be selected from the selector of the polymorphic VI “GEN VIR_Generate.vi”.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)
VIR_AC setting		Set AC output. Input range： Output：True (ON: Default), False (OFF) Amplitude (Vpp)：0.0～5.0 Offset (V)：0.0～2.5 Frequency (Hz)：10, 20, 50, 100

Output

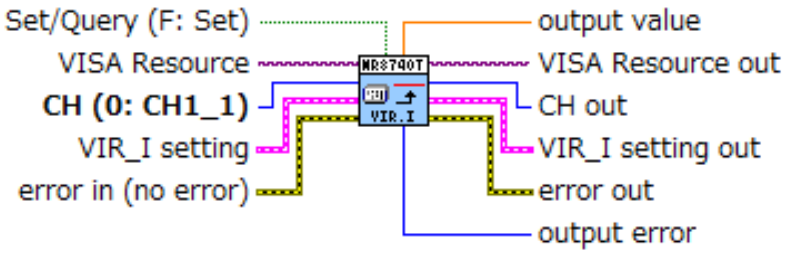
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
VIR_AC setting out		Output the AC output result of the channel specified by CH.
output value		Outputs the signal level being output.
output error		Output the output status.

Note:

・It can be used with the VIR unit (U8794).

3.7.6 HIOKI MR8740T GEN VIR_I.vi

Sets and reads DC current output of VIR unit. This VI can be selected from the selector of the polymorphic VI “GEN VIR_Generate.vi”.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)
VIR_I setting		Set the DC current output. Input range： Output：True (ON: Default), False (OFF) Level (A)：-5.000000～5.000000

Output

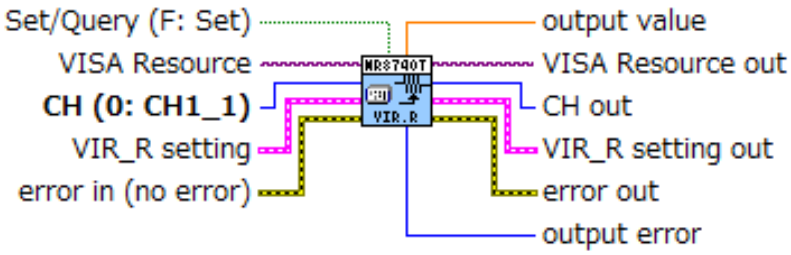
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
VIR_I setting out		Output the DC current output result of the channel specified by CH.
output value		Outputs the signal level being output.
output error		Output the output status.

Note:

・It can be used with the VIR unit (U8794).

3.7.7 HIOKI MR8740T GEN VIR_R.vi

Sets and reads resistance mode of VIR unit. This VI can be selected from the selector of the polymorphic VI “GEN VIR_Generate.vi”.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)
VIR_R setting		Set the resistance mode. Input range： Output：True (ON: Default), False (OFF) Level (Ω)：10～1000000

Output

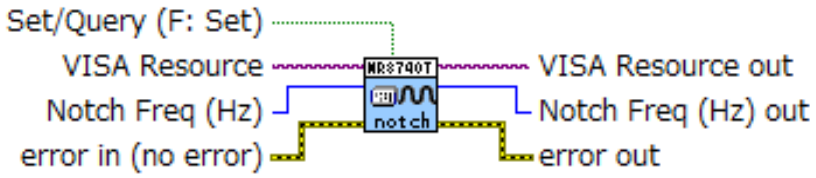
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
VIR_R setting out		Outputs the resistance mode result of the channel specified by CH.
output value		Outputs the signal level being output.
output error		Output the output status.

Note:

・It can be used with the VIR unit (U8794).

3.7.8 HIOKI MR8740T GEN VIR_Notch.vi

Set and read out the notch frequency of the VIR unit.



Input

Name	Data type	Explanation
Notch Freq (Hz)		Specify the notch frequency. Input range：0(50: Default), 1 (60)

Output

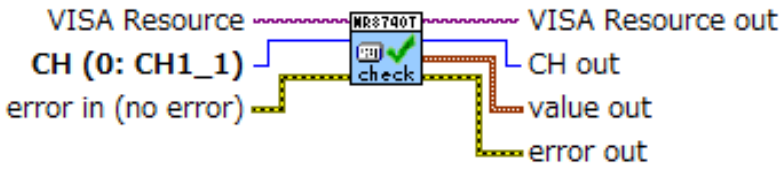
Name	Data type	Explanation
Notch Freq (Hz) out		Outputs the query results of the notch frequency.

Note:

・It can be used with the VIR unit (U8794).

3.7.9 HIOKI MR8740T GEN VIR_LDCheck.vi

Perform network estimation of VIR unit and read resistance, capacitance and voltage.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)

Output

Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
value out		Outputs the resistance, capacitance, and voltage of the channel specified by CH.

Note:

・It can be used with the VIR unit (U8794).

・It can be used when the channel is in resistance mode and the signal output is off.

3.7.10 HIOKI MR8740T GEN VIR_LDClear.vi

Clear the network estimation result of VIR unit.

Input

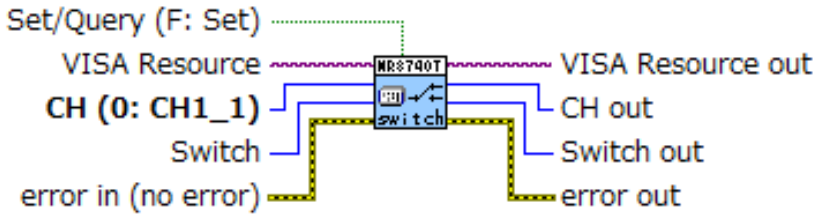
Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)

Note:

・It can be used with the VIR unit (U8794).

3.7.11 HIOKI MR8740T GEN VIR_Switch.vi

Sets and reads out switch switching during output of VIR unit.



Input

Name	Data type	Explanation
CH		Specify the CH. Input range：0～215 (CH1_1 ～ CH27_8)
Switch		Set the switch switching during output. Input range：0 (OPEN: Default), 1 (SHORT), 2 (NORMAL)

Output

Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
Switch out		Outputs the query result of switch switching during output of the channel specified by CH is output.

Note:
・It can be used with the VIR unit (U8794).

3.8 Memory VI

Contains VIs related to memorize data.

3.8.1 HIOKI MR8740T Mem MaxPoint.vi

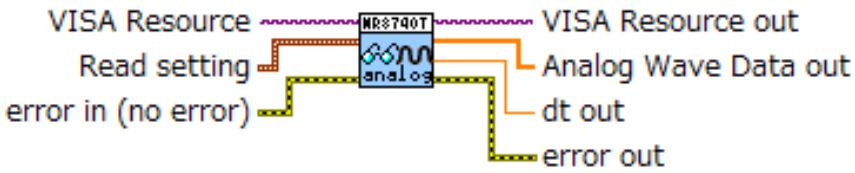
Reads the number of data stored in memory.

Output

Name	Data Type	Explanation
MaxPoint out	I32	Outputs the number of data stored in memory.

3.8.2 HIOKI MR8740T Mem ReadWaveData_Analog.vi

Read storage data. Only analog data can be read out. This VI can be selected from the selector of the polymorphic VI “Mem ReadWaveData.vi”.



Input

Name	Data type	Explanation
Read setting		Set the waveform read from storage data. Input range: CH:CH1_1～CH27_4, Z1～Z16 Start Point:0～Number of storage data Data Point:1～Number of storage data

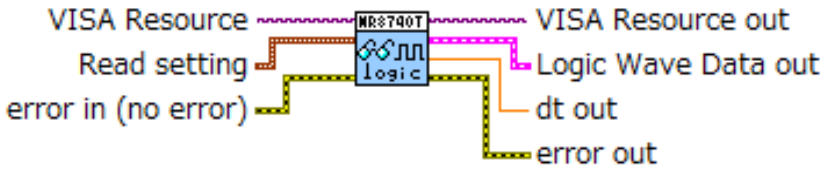
Output

Name	Data type	Explanation
Analog Wave Data out	SGL	Outputs the storage data.
dt out	DBL	Outputs the time between samplings.

Note:
・The start operation is not in progress.
・The output data is within storage data.

3.8.3 HIOKI MR8740T Mem ReadWaveData_Logic.vi

Read storage data. Only logic data can be read out. This VI can be selected from the selector of the polymorphic VI “Mem ReadWaveData.vi”.



Input

Name	Data type	Explanation
Read setting		Set the waveform read from storage data. Input range: CH:L25～L27 Start Point:0～Number of storage data Data Point:1～Number of storage data

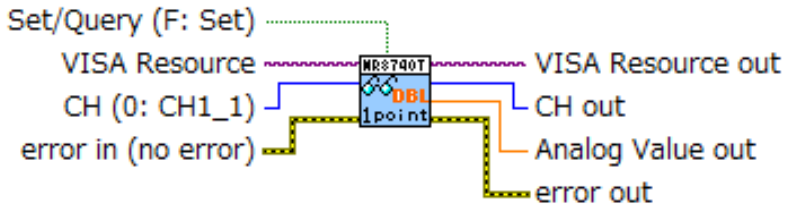
Output

Name	Data type	Explanation
Logic Wave Data out		Outputs the storage data.
dt out		Outputs the time between samplings.

Note:
・The start operation is not in progress.
・The output data is within storage data.

3.8.4 HIOKI MR8740T Mem Real_Analog.vi

Acquires and reads the real-time measurement value on all channels. When reading the real-time data before acquiring data, returned values are undetermined. This VI can output only analog data.



Set mode

Acquires the real-time measurement values on all channels.

Query mode

Input

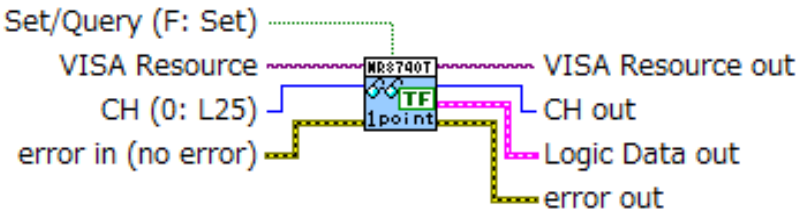
Name	Data Type	Explanation
CH		Specifies the channel for outputting the real-time data acquired at the set mode. Input range: 0～107 (CH1_1 ～ CH27_4)

Output

Name	Data Type	Explanation
CH out		Outputs the channel specified by CH.
Analog Value out	DBL	Outputs the real-time data.

3.8.5 HIOKI MR8740T Mem Real_Logic.vi

Acquires and reads the real-time measurement value on all channels. When reading the real-time data before acquiring data, returned values are undetermined. This VI can output only logic data.



Set mode

Acquires the real-time measurement values on all channels.

Query mode

Input

Name	Data Type	Explanation
CH		Specifies the channel for outputting the real-time data acquired at the set mode. Input range: 0 ～ 2 (L25 ～ L27)

Output

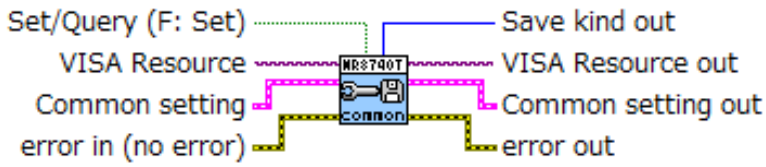
Name	Data type	Explanation
CH out		Outputs the channel specified by CH.
Logic Data out		Outputs the real-time data.

3.9 System VI

Contains the system related VIs.

3.9.1 HIOKI MR8740T SYST Save_COMMON.vi

Make common settings and read out when saving. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.



Input

Name	Data type	Explanation
Common setting		Set the common setting. Input range: Destination:SSD, USB1～USB8, MAIL, FTP Custom Name:(When Custom setting) file name

Output

Name	Data type	Explanation
Common setting out		Output query result of common setting.
Save kind out		Output query result of save file type.

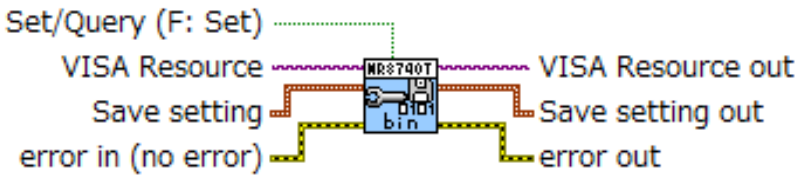
3.9.2 HIOKI MR8740T SYST Save_SET.vi

Make settings for saving settings. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.

Note:
・Execute Save.vi to execute save.

3.9.3 HIOKI MR8740T SYST Save_BIN.vi

Sets and reads at binary save. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.



Input

Name	Data type	Explanation
Save setting		Set the binary save setting. Input range: Save CH:0(ALL), 1(DISP: Default) Area:0(ALL: Default), 1(A_B), 2(C_D) Division:0(OFF: Default), 1(16MB), 2(32MB)

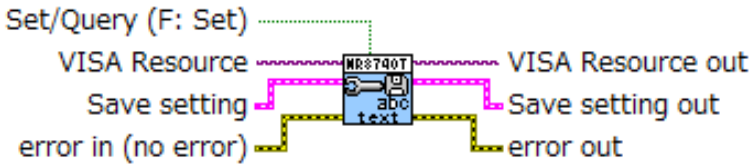
Output

Name	Data type	Explanation
Save setting out		Output the query results of the binary save setting.

Note:
・Execute Save.vi to execute save.

3.9.4 HIOKI MR8740T SYST Save_TEXT.vi

Sets and reads out when saving text. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.



Input

Name	Data type	Explanation
Save setting		Set the text save setting. Input range: Save CH:0(ALL), 1(DISP: Default) Thinning out:True (ON), False (OFF: Default) Interval:(Thinning out: ON) 1～1000 Area:0(ALL: Default), 1(A_B), 2(C_D) Save Data:0(ALL: Default), 1(Event only) Division:0(OFF: Default), 1(60000 data), 2(1000000 data)

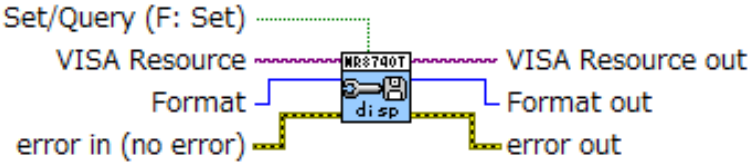
Output

Name	Data type	Explanation
Save setting out		Output the query results of the text save setting.

Note:
・Execute Save.vi to execute save.

3.9.5 HIOKI MR8740T SYST Save_DISPLAY.vi

Make settings and read when saving the display screen. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.



Input

Name	Data type	Explanation
Format		Set the image data format. Input range：0(BMP: Default), 1(PNG), 2(JPEG)

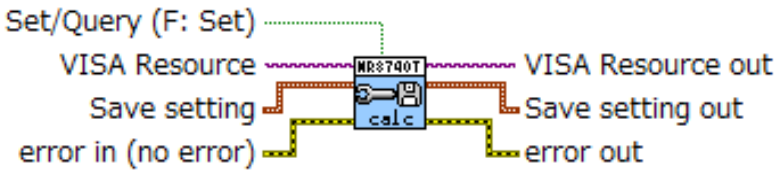
Output

Name	Data type	Explanation
Format out		Outputs query results in image data format.

Note:
・Execute Save.vi to execute save.

3.9.6 HIOKI MR8740T SYST Save_CALC.vi

Sets and reads out when saving the numerical operation result. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.



Input

Name	Data type	Explanation
Save setting		Make settings for saving numerical calculation results. Input range: Save File:0(NEW: Default), 1(EXIST) Division:0(OFF: Default), 1(Calc No.)

Output

Name	Data type	Explanation
Save setting out		Outputs the query result of the calculation result save setting.

Note:

・Execute Save.vi to execute save.

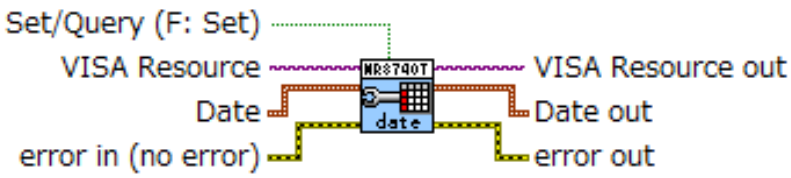
3.9.7 HIOKI MR8740T SYST Save_FLOAT.vi

Set float save. This VI can be selected from the selector of “SYST Save.vi”, which is a polymorphic VI.

Note:
・Execute Save.vi to execute save.

3.9.8 HIOKI MR8740T SYST Date.vi

Set and read the date.



Input

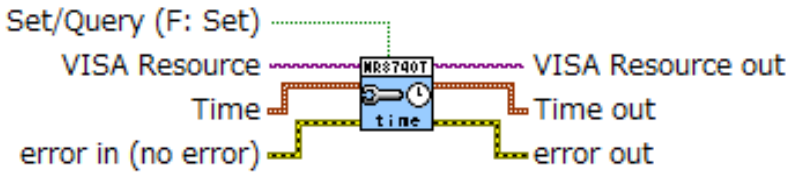
Name	Data type	Explanation
Date		Set the date. Input range: Year:2000～2080 Month:1～12 Day:1～31

Output

Name	Data type	Explanation
Date out		Outputs the query results of the date.

3.9.9 HIOKI MR8740T SYST Time.vi

Set and read the clock.



Input

Name	Data type	Explanation
Time		Set the clock. Input range: Hour:0～23 Minute:0～59 Second:0～59

Output

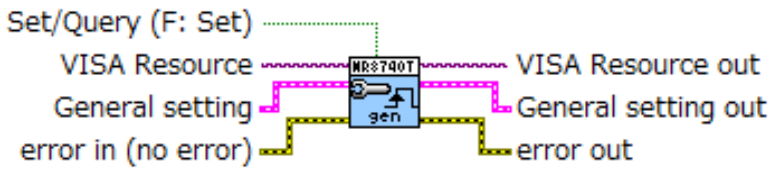
Name	Data type	Explanation
Time out		Output the query results of the clock.

3.10 Trigger VI

Contains VIs related to trigger setting.

3.10.1 HIOKI MR8740T Trig Common_General.vi

Sets and reads the pre-trigger, trigger priority mode and AND/OR logical operator. When this is used by set mode, the trigger function is turned on. This VI is selectable from the “Trig Common.vi”.



Input

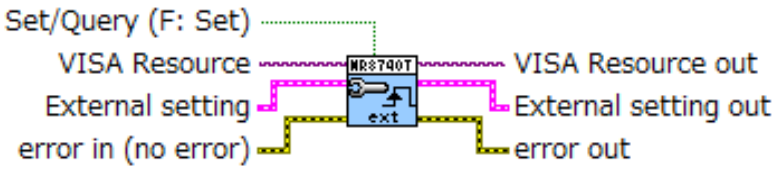
Name	Data type	Explanation
General setting		Includes the following controls:
Type		Set the pretrigger specification method. Input range: 0 (%: Default), 1 (POINT)
Value		Set the amount of pre-trigger.
Priority		Set the trigger priority mode. Input range: True (ON), False (OFF: Default)
Trigger AND/OR		Sets AND / OR between trigger sources in start trigger. Input range: 0 (OR: Default), 1 (AND)

Output

Name	Data type	Explanation
General setting out		Includes the following controls:
Type		Output the query result of the pretrigger specification method.
Value		Outputs the query result of the pretrigger amount.
Priority		Outputs query results in trigger priority mode.
Trigger AND/OR		Outputs AND / OR query results between trigger sources in start trigger.

3.10.2 HIOKI MR8740T Trig Common_External.vi

Sets and reads the external trigger, filter and input terminal. When this is used by set mode, the trigger function is turned on. This VI is selectable from the “Trig Common.vi”.



Input

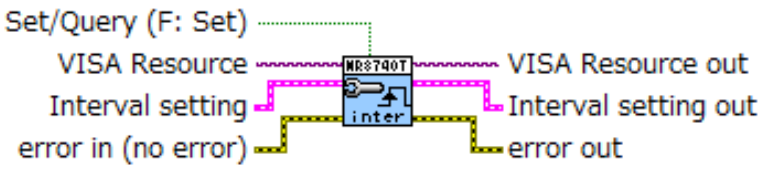
Name	Data Type	Explanation
External setting		Following controllers are included.
Enable		Sets the ON/OFF. Input range: Ture (ON: Default), False (OFF)
Slope		Sets the external trigger input terminal. Input range: 0 (UP), 1 (DOWN: Default)
Filter		Sets the external trigger filter. Input range: True (ON), False (OFF: Default)

Output

Name	Data Type	Explanation
External setting out		Following indicators are included. This outputs the setting for trigger group specified by Start/Stop.
Enable		Outputs the query results of the external trigger function.
Slope		Outputs the query results of the external trigger input terminal.
Filter		Outputs the query results of the external trigger filter.

3.10.3 HIOKI MR8740T Trig Common_Interval.vi

Sets and reads the interval trigger, time interval, combination of interval trigger and other trigger. When this is used by set mode, the trigger function is turned on. This VI is selectable from the “Trig Common.vi”.



Input

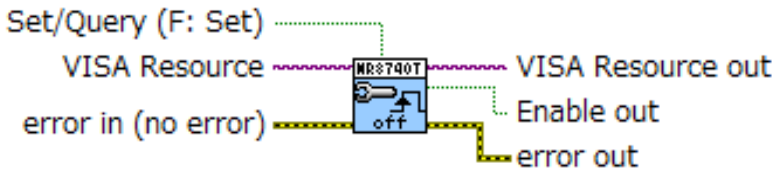
Name	Data Type	Explanation
Interval setting		Following controllers are included.
Enable		Sets the ON/OFF. Input range:: Ture (ON: Default), False (OFF)
Time		Sets the time interval of the interval trigger. Input range: hour: 0 - 23 minute: 0 - 59 second: 0 - 59
Interval AND/OR		Sets the combination of interval trigger and other trigger. Input range: 0 (OR: Default), 1 (AND)

Output

Name	Data Type	Explanation
Interval setting out		Following indicators are included.
Enable		Outputs the query results of the interval trigger function.
Time		Outputs the query results of the time interval.
Interval AND/OR		Outputs the query results of the combination of interval trigger and other trigger.

3.10.4 HIOKI MR8740T Trig Common_OFF.vi

When this is used by set mode, the trigger function is turned off. When this is used by query mode, this reads the trigger function. This VI is selectable from the “Trig Common.vi”.

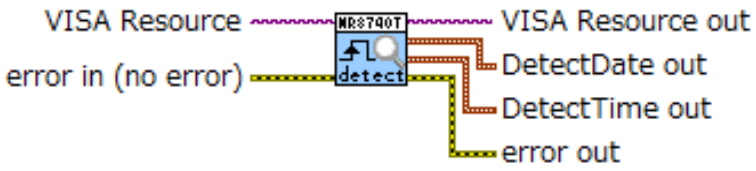


Output

Name	Data Type	Explanation
Enable out	TF	Outputs the query results of the trigger function.

3.10.5 HIOKI MR8740T Trig Detect.vi

Reads the trigger detection date and time.

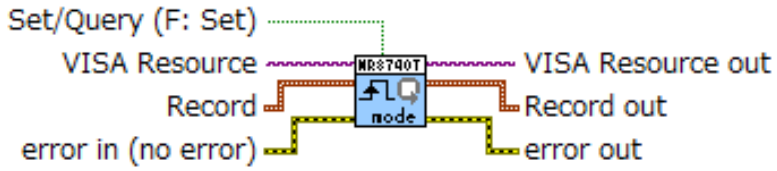


Output

Name	Data Type	Explanation
DetectDate out		Outputs the query results of the trigger detection date. Output range: Year: 2000 - 2080 Month: 1 - 12 Day: 1 – 31
DetectTime out		Outputs the query results of the trigger detection time. Output range: Hour: 0 - 23 Minute: 0 - 59 Second: 0 – 59.999

3.10.6 HIOKI MR8740T Trig Mode.vi

Sets and reads the trigger mode.



Input

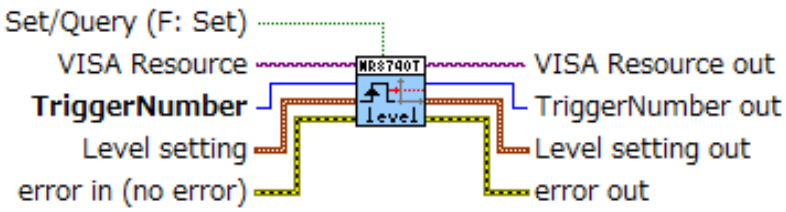
Name	Data Type	Explanation
Record		Includes the following controls:
Mode		Sets the trigger mode. Input range: 0 (SINGLE: Default), 1 (REPEAT)
Repeat Count		When the trigger mode is “REPEAT”, set the repeat count. Input range: 0 – 10000 (0: Default)

Output

Name	Data Type	Explanation
Record out		Includes the following controls:
Mode		Outputs the query results of the trigger mode.
Repeat Count		When the trigger mode is “REPEAT”, output the query results of the repeat count.

3.10.7 HIOKI MR8740T Trig Source_Level.vi

Sets and reads the Level trigger. This VI is selectable from the “Trig Source.vi”.



Input

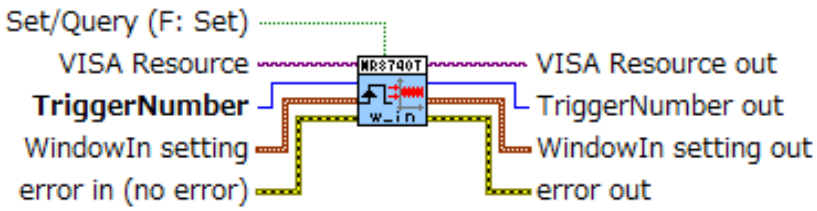
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
Level setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Level		Sets the trigger level.
Slope		Sets the trigger slope direction of channel. Input range: 0 (UP: Default), 1 (DOWN)
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)
Filter		Sets the trigger filter. Input range: 0 (0: Default), 1 (10), 2 (20), 3 (50), 4 (100), 5 (150), 6 (200), 7 (250), 8 (500), 9 (1000), 10 (2000), 11 (5000), 12 (10000)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
Level setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Level out		Outputs the query results of the trigger level.
Slope out		Outputs the query results of the trigger slope direction of channel.
Event out		Outputs the query results of the trigger event count.
Filter out		Outputs the query results of the trigger filter.

3.10.8 HIOKI MR8740T Trig Source_WindowIn.vi

Sets and reads the Window-In trigger. This VI is selectable from the “Trig Source.vi”.



Input

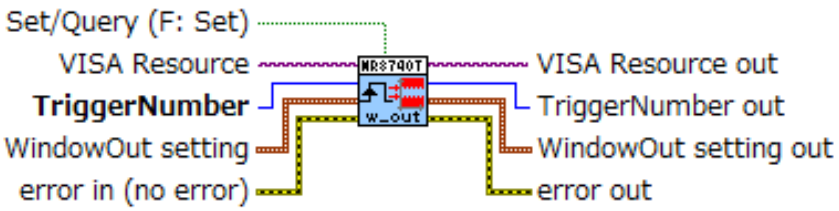
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
WindowIn setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Upper Level		Sets the upper limit of window trigger.
Lower Level		Sets the lower limit of window trigger.
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)
Filter		Sets the trigger filter. Input range: 0 (0: Default), 1 (10), 2 (20), 3 (50), 4 (100), 5 (150), 6 (200), 7 (250), 8 (500), 9 (1000), 10 (2000), 11 (5000), 12 (10000)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
WindowIn setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Upper Level out		Outputs the query results of the upper limit of window trigger.
Lower Level out		Outputs the query results of the lower limit of window trigger.
Event out		Outputs the query results of the trigger event count.
Filter out		Outputs the query results of the trigger filter.

3.10.9 HIOKI MR8740T Trig Source_WindowOut.vi

Sets and reads the Window-Out trigger. This VI is selectable from the “Trig Source.vi”.



Input

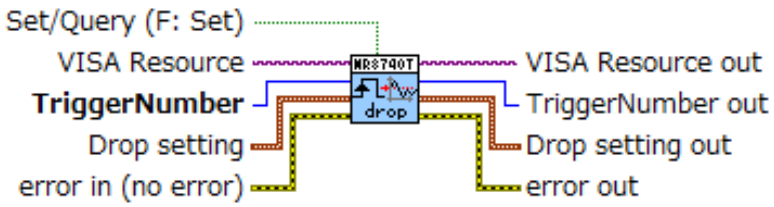
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
WindowOut setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Upper Level		Sets the upper limit of window trigger.
Lower Level		Sets the lower limit of window trigger.
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)
Filter		Sets the trigger filter. Input range: 0 (0: Default), 1 (10), 2 (20), 3 (50), 4 (100), 5 (150), 6 (200), 7 (250), 8 (500), 9 (1000), 10 (2000), 11 (5000), 12 (10000)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
WindowOut setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Upper Level out		Outputs the query results of the upper limit of window trigger.
Lower Level out		Outputs the query results of the lower limit of window trigger.
Event out		Outputs the query results of the trigger event count.
Filter out		Outputs the query results of the trigger filter.

3.10.10 HIOKI MR8740T Trig Source_VoltageDrop.vi

Sets and reads the Voltage drop trigger. This VI is selectable from the “Trig Source.vi”.



Input

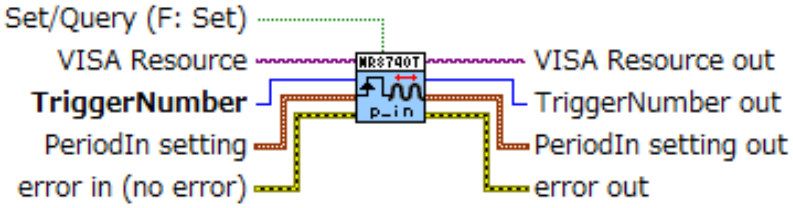
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
Drop setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Level		Sets the trigger level.
Frequency		Sets the measurement frequency. Input range: 0 (50: Default), 1 (60)
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
Drop setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Level out		Outputs the query results of the trigger level.
Frequency out		Outputs the query results of the measurement frequency.
Event out		Outputs the query results of the trigger event count.

3.10.11 HIOKI MR8740T Trig Source_PeriodIn.vi

Sets and reads the Period-In trigger. This VI is selectable from the “Trig Source.vi”.



Input

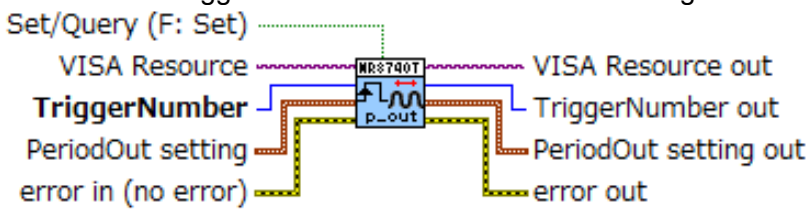
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
PeriodIn setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Level		Sets the trigger level.
Slope		Sets the trigger slope direction of channel. Input range: 0 (UP: Default), 1 (DOWN)
Upper period		Sets the upper limit of the period trigger.
Lower period		Sets the lower limit of the period trigger.
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)
Filter		Sets the trigger filter. Input range: 0 (0: Default), 1 (10), 2 (20), 3 (50), 4 (100), 5 (150), 6 (200), 7 (250), 8 (500), 9 (1000), 10 (2000), 11 (5000), 12 (10000)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
PeriodIn setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Level out		Outputs the query results of the trigger level.
Slope out		Outputs the query results of the trigger slope direction of channel.
Upper period out		Outputs the query results of the upper limit of the period trigger.
Lower period out		Outputs the query results of the lower limit of the period trigger.
Event out		Outputs the query results of the trigger event count.
Filter out		Outputs the query results of the trigger filter.

3.10.12 HIOKI MR8740T Trig Source_PeriodOut.vi

Sets and reads the Period-Out trigger. This VI is selectable from the “Trig Source.vi”.



Input

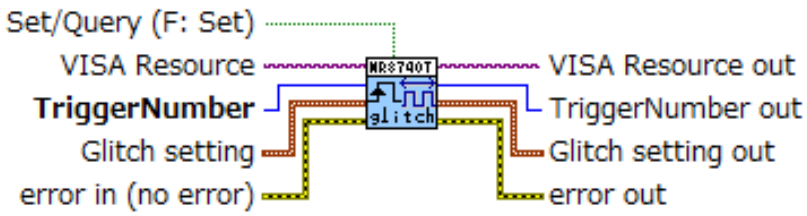
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
PeriodOut setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Level		Sets the trigger level.
Slope		Sets the trigger slope direction of channel. Input range: 0 (UP: Default), 1 (DOWN)
Upper period		Sets the upper limit of the period trigger.
Lower period		Sets the lower limit of the period trigger.
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)
Filter		Sets the trigger filter. Input range: 0 (0: Default), 1 (10), 2 (20), 3 (50), 4 (100), 5 (150), 6 (200), 7 (250), 8 (500), 9 (1000), 10 (2000), 11 (5000), 12 (10000)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
PeriodOut setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Level out		Outputs the query results of the trigger level.
Slope out		Outputs the query results of the trigger slope direction of channel.
Upper period out		Outputs the query results of the upper limit of the period trigger.
Lower period out		Outputs the query results of the lower limit of the period trigger.
Event out		Outputs the query results of the trigger event count.
Filter out		Outputs the query results of the trigger filter.

3.10.13 HIOKI MR8740T Trig Source_Glitch.vi

Sets and reads the Glitch trigger. This VI is selectable from the “Trig Source.vi”.



Input

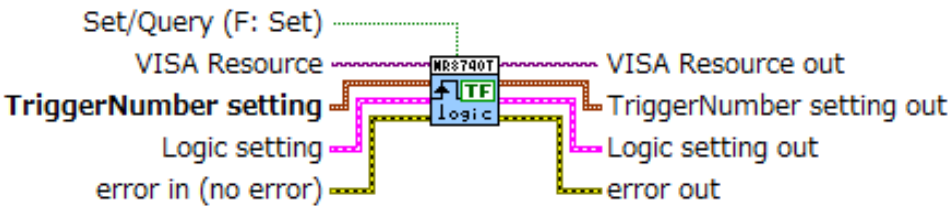
Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
Glitch setting		Following controllers are included.
CH		Sets the channels to apply the triggers. Valid only when UNIT/DSP sets UNIT. Input range: 0 - 3 (1 - 4)
Level		Sets the trigger level.
Slope		Sets the trigger slope direction of channel. Input range: 0 (UP: Default), 1 (DOWN)
Width		Set the glitch width (seconds).
Event		Sets the trigger event count. Input range: 1 - 4000 (1: Default)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
Glitch setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
CH out		Outputs the query results of the channel to apply the trigger.
Level out		Outputs the query results of the trigger level.
Slope out		Outputs the query results of the trigger slope direction of channel.
Width out		Outputs the query results of the glitch width.
Event out		Outputs the query results of the trigger event count.

3.10.14 HIOKI MR8740T Trig Source_Logic.vi

Sets and reads the Logic trigger. This VI is selectable from the “Trig Source.vi”.



Input

Name	Data Type	Explanation
TriggerNumber setting		Following controllers are included.
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 11 (UNIT25-T1 ～ UNIT27-T4)
CH		Sets the channels to apply the triggers. Input range: 0 - 3 (A - D)
Logic setting		Following controllers are included.
EstablishmentCondition		Sets the AND/OR logical operator for the logic trigger. Input range: 0 (OFF: Default), 1 (OR), 2 (AND)
Filter		Sets the logic trigger filter width. Input range: 0 (0: Default), 1 (10), 2 (20), 3 (50), 4 (100), 5 (150), 6 (200), 7 (250), 8 (500), 9 (1000), 10 (2000), 11 (5000), 12 (10000)
LogicPattern		Sets the trigger pattern (4 bits) of the logic trigger. Input range: 0 (0 (Trigger at low level)), 1 (1 (Trigger at high level)), 2 (X (Ignore signal): Default),

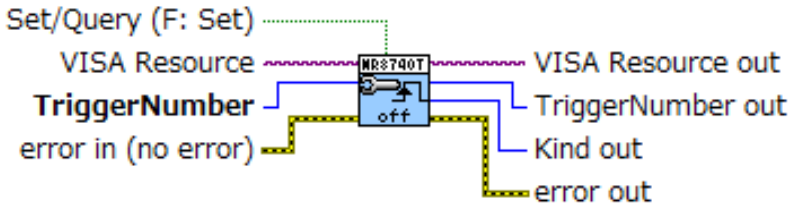
Output

Name	Data Type	Explanation
TriggerNumber setting out		Following indicators are included.
TriggerNumber		Outputs the trigger number.
CH		Outputs the query results of the channel to apply the trigger.
Logic setting out		Following indicators are included. It is output about setting of trigger number specified by TriggerNumber.
EstablishmentCondition		Outputs the query results of the AND/OR logical operator for the logic trigger.
Filter		Outputs the query results of the logic trigger filter width.
LogicPattern		Outputs the query results of the trigger pattern of the logic trigger.

Note:
・Valid only for logic units.

3.10.15 HIOKI MR8740T Trig Source_OFF.vi

When this is used by set mode, the trigger type of the specified trigger number is turned off. When this is used by query mode, this reads the trigger type of the specified trigger number. This VI is selectable from the “Trig Source.vi”.



Input

Name	Data Type	Explanation
TriggerNumber		Specifies the trigger number. Input range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)

Output

Name	Data Type	Explanation
TriggerNumber out		Outputs the trigger number.
Kind out		Outputs the query results of the type of the trigger specified by TriggerNumber. Output range: 0 (OFF), 1 (LEVEL), 2 (IN), 3 (OUT), 4 (DROP), 5 (PERIIN), 6 (PERIOUT), 7 (GLITCH)

3.10.16 HIOKI MR8740T Trig Manual.vi

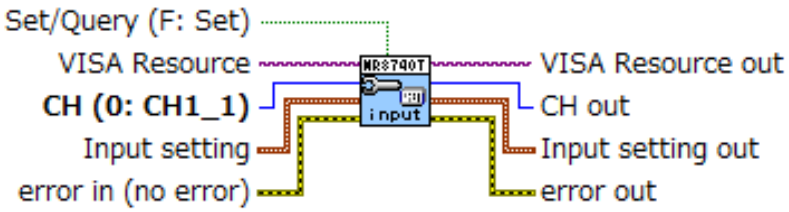
If this command is executed while waiting for a trigger, you can trigger it.

3.11 Unit VI

Contains VIs related to unit setting.

3.11.1 HIOKI MR8740T Unit Input.vi

Sets and reads the type of input .



Input

Name	Data Type	Explanation
CH		Specifies the channel for setting the type of input coupling. Input Range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
Input setting		Set the input setting. Input range： Range：measurement range Coupling：0(DC: Default), 1(AC), 2(GND) L.P.F：0, 5～500000 Probe ratio：0(x1: Default), 1(x10), 2(x100), 3(x1000)

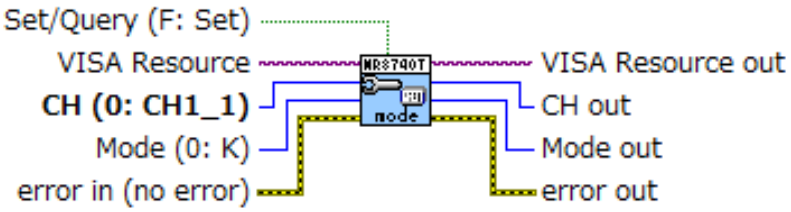
Output

Name	Data Type	Explanation
CH out		Outputs the query results of the channel specified by CH.
Input setting out		Output the query result of the input of the channel specified by CH.

Note:
・The setting depends on the type of module.

3.11.2 HIOKI MR8740T Unit Mode.vi

Sets and reads the measurement mode of the channel.



Input

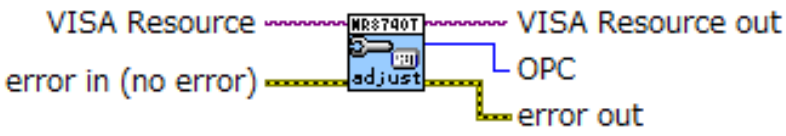
Name	Data Type	Explanation
CH		Specifies the channel for setting the measurement mode. Input Range: 0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
Mode		Sets the measurement mode. Input Range: [Module 8967 (Temperature)] 0 (K), 1 (J), 2 (E), 3 (T), 4 (N), 5 (R), 6 (S), 7 (B), 8 (W) [Module 8970 (Frequency)] 9 (FREQ), 10 (RPM), 11 (POWER), 12 (COUNT), 13 (DUTY), 14 (PULSE) [Module 8972 (DC / RMS), U8974 (High voltage)] 15 (DC), 16 (RMS)

Output

Name	Data Type	Explanation
CH out		Outputs the query results of the channel specified by CH.
Mode out		Outputs the query results of the measurement type.

3.11.3 HIOKI MR8740T Unit Adjust.vi

Perform unit zero adjustment.



Output

Name	Data type	Explanation
OPC	U8	After the zero adjustment, 1 is returned.

Note

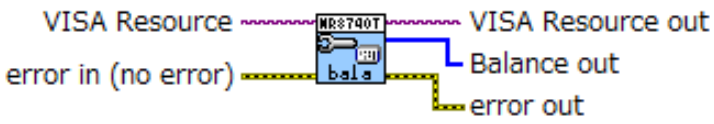
• Perform zero adjustment on all channels and all ranges.

・It takes time to execute the command.

・The start operation is not in progress

3.11.4 HIOKI MR8740T Unit Balance.vi

Perform auto balance on all strain units. Returns the auto balance execution result.



Output

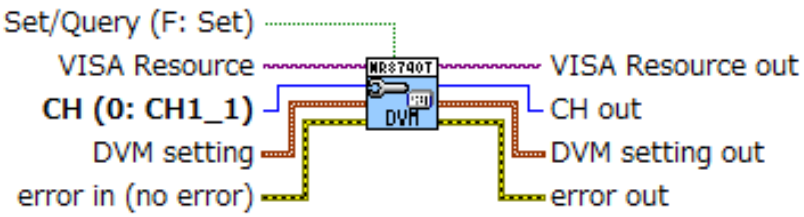
Name	Data type	Explanation
Balance out		Returns the auto balance execution result. Output range：0(Not covered), 1(OK), 2(NG)

Note

・Not applicable for units other than strain units.

3.11.5 HIOKI MR8740T Unit DVM.vi

Set up and read out the DVM unit.



Input

Name	Data type	Explanation
CH		Specify the channel to set the measurement mode. Input range：0 ～ 107 (UNIT1-T1 ～ UNIT27-T4)
DVM setting		Set the measurement mode. Input range： Notch Freq：0(50 Hz: Default), 1(60 Hz) NPLC：0.1, 0.2～0.9, 1(Default), 2～9, 10, 20～90, 100 Fast response：0(OFF: Default), 1(ON) Calibration：0(OFF: Default), 1(ON), 2(SYNC)

Output

Name	Data type	Explanation
CH out		Outputs the channel specified by CH as a character string.
DVM setting out		Outputs the query result of the measurement mode of the channel specified by CH.

Note

・Available with DVM unit (MR8990).