

Source-Sinks NL vs. QL

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This document shows functional and SCPI command differences between NL and QL source-sinks. Refer to user manuals and technical data sheets for detailed analysis.
n.a. = not available

Rev. 1

		
Manufacturer	H&H	H&H
Series	NL	QL
	Production Series A	Production Series B
2- or 4-quadrant models	2Q and 4Q models	2Q and 4Q models
Continuous power max.	3,600 W	3,600 W
Current ranges	1	1
Basic operating modes	CC, CV	CC, CV, CR, CP
Combined operating modes	CC+CV, CV+CC by current and voltage protection	CC+CV, CV+CC, CP+CV, CR+CV by current and voltage protection
AC source	n.a.	only with 4Q models in CC, CV mode (sine, triangular, square, sawtooth, arbitrary) range values are peak values for V and I adjustable offset 0.1 Hz ... 10 kHz, also mains synchronizable
User interface	alphanumeric displays, buttons, rotary setting encoder	4.3" touchscreen, input button, rotary setting encoder
Operation by mouse	n.a.	yes
Voltage setting DC		
Accuracy	±0.1 % of setting ±0.05 % of range	±0.1 % of setting ±0.05 % of range
Resolution	15 bits in each quadrant	15 bits in each quadrant
Current setting DC		
Accuracy	±0.2 % of setting ±0.05 % of range	±0.2 % of setting ±0.05 % of range
Resolution	15 bits in each quadrant	15 bits in each quadrant
Resistance setting DC		
Accuracy	n.a.	±1.4 % of setting ±0.3 % of current range at V > 5 % of pos. voltage range
Resolution	n.a.	15 bits in each quadrant
Power setting DC		
Accuracy	n.a.	±0.35 % of setting, 0.1 % of range (V and I > 30 % of range) ±0.7 % of setting, 0.25 % of range (V or I > 5 % and < 30 % of range)
Resolution	n.a.	15 bits in each quadrant
Voltage setting AC		4Q models only
Accuracy	n.a.	±1 % of setting ±0.25 % of pos. range
Current setting AC		4Q models only
Accuracy	n.a.	±1 % of setting ±0.25 % of pos. range
Protections		
Accuracy adjustable voltage protection	0.1 % of setting 0.05 % of range	0.1 % of setting 0.05 % of range
Accuracy adjustable current protection	0.2 % of setting 0.05 % of range	0.2 % of setting 0.05 % of range
Resolution	15 bits in each quadrant	13 bits in each quadrant
Rise/fall time	model-specific	model-specific
Measurement/display		
Display	4 digits voltage and current	graphical user interface with 4 decimal places
Voltage measurement accuracy	0.1 % of meas. value 0.05 % of range ±1 digit	0.1 % of meas. value 0.05 % of range
Current measurement accuracy	0.2 % of meas. value 0.05 % of range ±1 digit	0.2 % of meas. value 0.05 % of range
External control voltage accuracy	n.a.	0.2 % of meas. value 0.1 % of pos. range
Resistance measurement accuracy	calculated of voltage and current	calculated of voltage and current
Power measurement accuracy	calculated of voltage and current	calculated of voltage and current
Resolution	n.a.	15 bits in each quadrant
Remote measurement in static DC modes		
Voltage measurement accuracy	0.1 % (0.15 % with NL13) of meas. value 0.05 % (0.07 % with NL13) of range	0.1 % of meas. value 0.05 % of range
Current measurement accuracy	0.2 % (0.3 % with NL13) of meas. value 0.05 % (0.07 % with NL13) of range	0.2 % of meas. value 0.05 % of range

External control voltage accuracy	n.a.	0.2 % of meas. value 0.1 % of pos. range
Resistance measurement accuracy	--	calculated of voltage and current measurement
Power measurement accuracy	--	calculated of voltage and current measurement
ADC resolution	18 bits (13 bits with NL13)	15 bits
Sampling time	330 ms, not triggerable (min. 200 µs programmable, triggerable with NL13)	200 µs, triggerable
Remote measurement in static AC modes		
Voltage RMS meas. accuracy	n.a.	0.5 % of meas. value 0.1 % of range
Current RMS meas. accuracy	n.a.	0.5 % of meas. value 0.1 % of range
Time constant of RMS measurement	n.a.	ca. 500 ms
Trigger voltage and current		
Accuracy trigger voltage	n.a.	±1 % of positive voltage range
Accuracy trigger current	n.a.	±1 % of positive current range
Sampling time	n.a.	200 µs
Dynamic function (LIST)		
Number of dynamic settings	with Option NL13 50 list points with ramp and dwell times (LIST)	standard 300 list points with ramp and dwell times (LIST)
Time resolution	200 µs	200 µs
Number of measurement points	2,000	40,000
Number of iterations	infinite	infinite
Maximum dwell, ramp and sample time	2,000 s	1,000 s
Voltage measurement accuracy	0.15 % of meas. value 0.07 % of range	0.1 % of meas. value 0.05 % of range
Current measurement accuracy	0.3 % of meas. value 0.07 % of active range	0.2 % of meas. value 0.05 % of range
Resolution	13 bits	15 bits
Rectangle function	no	yes
PWM function	no	yes
Modulation function	no	yes
Watchdog function	yes	yes
Battery test function	no	yes
Internal resistance measurement	no	yes
Internal resistance setting	no	yes
Data acquisition to internal memory	yes, max. 2,000 points	yes, max. 40,000 points
Data logging to USB MSD	no	yes
Trigger system	yes	yes
Keylock function	no	yes
Preset function	no	yes
Save/recall settings	yes	yes
I/V graph, t/I graph	no	yes
V/I characteristic graph	no	yes
Screenshot function	no	yes
Setting toggling	no	yes
Permissible potentials of neg. output		
	±125 V (DC or AC) to PE	±125 V to PE
I/O port		
	standard, not isolated isolated version NL06 optional	standard, not isolated isolated version QL06 optional
Analog control	0 ... 5 V or 0 ... 10 V	0 ... 5 V or 0 ... 10 V
Analog control sampling rate	analog/real time	analog/real time
Ext. setting control	CC, CV	CC, CV, CR, CP
Ext. protection control	current protection, voltage protection	current protection, voltage protection
Monitor signals	I, V	I, V
Monitor sampling rate	analog/real time	analog/real time
Digital control signals (inputs)	output on-off emergency off (remote shut-down) control input for ext. control activation operating mode control trigger input control speed selection	output on-off emergency off (remote shut-down) control input for ext. control activation operating mode control trigger input control speed selection readable logic input
Digital outputs	output activation state high current or voltage protection status low current or voltage protection status trigger output	output activation state high current or voltage protection status low current or voltage protection status trigger output
Digital outputs' voltage levels	5 V / 24 V (selectable)	5 V / 24 V (selectable)
Permissible potential of GNDs at <u>standard</u> I/O port	max. ±2 V to Input- max. ±125 V to PE	max. ±2 V to Input- max. ±125 V to PE
Permissible potential of GNDs at <u>isolated</u> I/O port	max. ±125 V to Input- max. ±125 V to PE	max. ±125 V to Input- max. ±125 V to PE
Sense terminals		
	binding posts	2-pole PHOENIX socket (production series A) 4-pole PHOENIX plug (production series B)
Data interfaces		
	USB standard	USB standard
	RS-232 standard	RS-232 standard
		CAN standard
	external Ethernet optional	Ethernet standard

	GPIO optional	GPIO optional
SCPI syntax	yes	yes
LabVIEW drivers	yes, NI certified	yes, NI certified
Software tools	yes	no
Firmware update	by flashing tool via RS-232	via USB MSD (front)
Operating temperature	5 ... 40 °C	5 ... 40 °C
Power derating	-1.2 %/°C for Ta > 21 °C	-1.2 %/°C for Ta > 21 °C
Master-Slave operation in system connection	no	no
Safety compliance	DIN EN 61010-1 DIN EN 61010-2-030	DIN EN 61010-1 DIN EN 61010-2-030
EMC compliance	DIN EN 61326-1 DIN EN 55011 DIN EN 61000-3-2 DIN EN 61000-3-3	DIN EN 61326-1 DIN EN 55011 DIN EN 61000-3-2 DIN EN 61000-3-3
Front panel color	RAL 7032	RAL 7035
Calibration	Free H&H calibration service for new device, another free calibration after registration within warranty period	Free H&H calibration service for new device, another free calibration after registration within warranty period

SCPI Commands NL vs. QL

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For identical commands/queries, the following notes must be considered:

- The setting values after resetting the system may differ.
- The actual, numeric settings when passing parameters MIN or MAX may differ.
- The format of transferred parameters can differ.
- The format of returned values and strings may differ.
- The assignment of status registers can differ.
- The control behavior with regard to speed and accuracy may differ.
- The scope of commands can differ.

Use the user manuals to analyze the detailed differences between the NL and QL series commands/queries.

n. a. = not available

NL	QL	Remark
Common Commands		
*CLS	*CLS	
*ESE	*ESE	
*ESE?	*ESE?	
*ESR?	*ESR?	
*IDN?	*IDN?	
*OPC	*OPC	
*OPC?	*OPC?	
n. a.	*OPT?	
n. a.	*RCL	
*RST	*RST	
n. a.	*SAV	
*SRE	*SRE	With NL series no service request is generated regardless of the set register
*SRE?	*SRE?	
*STB?	*STB?	
*TRG	*TRG	
*TST?	*TST?	
*WAI	*WAI	

Device-dependent Commands		
Subsystem ACQuisition		
n.a.	ACQuisition[:STATE]	
n.a.	ACQuisition[:STATE]?	
n.a.	ACQuisition:STIME	
n.a.	ACQuisition:STIME?	
n.a.	ACQuisition:TRIGger:ENABle	
n.a.	ACQuisition:TRIGger:ENABle?	
Subsystem CURRent		
CURRent[:LEVel][:IMMediate]	CURRent[:LEVel][:IMMediate]	
CURRent[:LEVel][:IMMediate]?	CURRent[:LEVel][:IMMediate]?	
CURRent[:LEVel]:TRIGgered	CURRent[:LEVel]:TRIGgered	
CURRent[:LEVel]:TRIGgered?	CURRent[:LEVel]:TRIGgered?	
CURRent:MODE	n.a.	
CURRent:MODE?	n.a.	
CURRent:PROTection[:LEVel][:HIGH]	CURRent:PROTection[:LEVel]:HIGH	
CURRent:PROTection[:LEVel][:HIGH]?	CURRent:PROTection[:LEVel]:HIGH?	
CURRent:PROTection[:LEVel]:LOW	CURRent:PROTection[:LEVel]:LOW	
CURRent:PROTection[:LEVel]:LOW?	CURRent:PROTection[:LEVel]:LOW?	
CURRent:RANGe	n.a.	
CURRent:RANGe?	n.a.	
CURRent:RANGe:AUTO	n.a.	With NL series only present for compatibility.
Subsystem DATA		
n.a.	DATA:DELeTe	
n.a.	DATA:LAST?	
DATA:POINts?	DATA:POINts?	
TRACe:POINts?		
DATA:REMOve?	DATA:REMOve?	
TRACe:REMOve?		
Subsystem DELay		
DELay	n.a.	
Subsystem DISPlay		
n.a.	DISPlay:TEXT	
n.a.	DISPlay:TEXT?	
Subsystem FORMat		
n.a.	FORMat[:DATA]	

n.a.	FORMat[:DATA]?
n.a.	FORMat:SREGister
n.a.	FORMat:SREGister?

Subsystem FUNCTION

n.a.	FUNCTION:CHARge[:STATe]
n.a.	FUNCTION:CHARge[:STATe]?
n.a.	FUNCTION:CHARge:CHARge?
n.a.	FUNCTION:CHARge:ENERgy?
n.a.	FUNCTION:CHARge:STOP:CHARge
n.a.	FUNCTION:CHARge:STOP:CHARge
n.a.	FUNCTION:CHARge:STOP:CURRENT
n.a.	FUNCTION:CHARge:STOP:CURRENT?
n.a.	FUNCTION:CHARge:STOP:ENABLE
n.a.	FUNCTION:CHARge:STOP:ENABLE?
n.a.	FUNCTION:CHARge:STOP:ENERgy
n.a.	FUNCTION:CHARge:STOP:ENERgy?
n.a.	FUNCTION:CHARge:STOP:EVENT?
n.a.	FUNCTION:CHARge:STOP:TIME
n.a.	FUNCTION:CHARge:STOP:TIME?
n.a.	FUNCTION:CHARge:STOP:VOLTage[:LEVel]
n.a.	FUNCTION:CHARge:STOP:VOLTage[:LEVel]?
n.a.	FUNCTION:CHARge:TIME?
n.a.	FUNCTION:DISCharge[:STATe]
n.a.	FUNCTION:DISCharge[:STATe]?
n.a.	FUNCTION:DISCharge:CHARge?
n.a.	FUNCTION:DISCharge:ENERgy?
n.a.	FUNCTION:DISCharge:STOP:CHARge
n.a.	FUNCTION:DISCharge:STOP:CHARge?
n.a.	FUNCTION:DISCharge:STOP:CURRENT[:LEVel]
n.a.	FUNCTION:DISCharge:STOP:CURRENT[:LEVel]?
n.a.	FUNCTION:DISCharge:STOP:ENABLE
n.a.	FUNCTION:DISCharge:STOP:ENABLE?
n.a.	FUNCTION:DISCharge:STOP:ENERgy
n.a.	FUNCTION:DISCharge:STOP:ENERgy?
n.a.	FUNCTION:DISCharge:STOP:EVENT?
n.a.	FUNCTION:DISCharge:STOP:TIME
n.a.	FUNCTION:DISCharge:STOP:TIME?
n.a.	FUNCTION:DISCharge:STOP:VOLTage[:LEVel]
n.a.	FUNCTION:DISCharge:STOP:VOLTage[:LEVel]?

n.a.	FUNCTION:DISCharge:TIME?
n.a.	FUNCTION:MEASure:IRESistance[:STATe]
n.a.	FUNCTION:MEASure:IRESistance[:STATe]?
n.a.	FUNCTION:MEASure:IRESistance:CURREnt
n.a.	FUNCTION:MEASure:IRESistance:CURREnt?
n.a.	FUNCTION:MEASure:IRESistance:DWELL
n.a.	FUNCTION:MEASure:IRESistance:DWELL?
n.a.	FUNCTION:MEASure:IRESistance:RESistance?
n.a.	FUNCTION:MEASure:IRESistance:TIME?
n.a.	FUNCTION:MODE
n.a.	FUNCTION:MODE?
n.a.	FUNCTION:MODE:TRIGgered
n.a.	FUNCTION:MODE:TRIGgered?
n.a.	FUNCTION:MODulate[:STATe]
n.a.	FUNCTION:MODulate[:STATe]?
n.a.	FUNCTION:MODulate:MODE
n.a.	FUNCTION:MODulate:MODE?
n.a.	FUNCTION:MODulate:WAVEform:AMPLitude
n.a.	FUNCTION:MODulate:WAVEform:AMPLitude?
n.a.	FUNCTION:MODulate:WAVEform:ARBitrary[:LEVel]
n.a.	FUNCTION:MODulate:WAVEform:ARBitrary[:LEVel]?
n.a.	FUNCTION:MODulate:WAVEform:FREQuency
n.a.	FUNCTION:MODulate:WAVEform:FREQuency?
n.a.	FUNCTION:MODulate:WAVEform:TYPE
n.a.	FUNCTION:MODulate:WAVEform:TYPE?

Subsystem GTL

GTL	SYSTEM:LOCAl
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Subsystem ICONductance

n.a.	ICONductance[:LEVel][:IMMediate]
n.a.	ICONductance[:LEVel][:IMMediate]?

Subsystem INPut

INPut[:STATe]	n.a.
INPut[:STATe]?	n.a.

Subsystem IRESistance

n.a.	IRESistance[:LeVel][:IMMediate]
n.a.	IRESistance[:LeVel][:IMMediate]?

Subsystem LIST

n.a.	LIST:ACQuisition[:STATe]
n.a.	LIST:ACQuisition[:STATe]?
LIST:COUNT	LIST:COUNT
n.a.	LIST:COUNT?
LIST:CURRent[:LeVel]	LIST:CURRent[:LeVel]
n.a.	LIST:CURRent[:LeVel]?
n.a.	LIST:CURRent[:LeVel]:POINTs?
LIST:CURRent:RTIME	LIST:RTIME
LIST:CURRent:DWELL	LIST:DWELL
LIST:CURRent:STRamp	LIST:STIME:RTIME
LIST:CURRent:STDWell	LIST:STIME:DWELL
n.a.	LIST:DWELL?
n.a.	LIST:DWELL:POINTs?
n.a.	LIST:MODE
n.a.	LIST:MODE?
n.a.	LIST:POWer[:LeVel]
n.a.	LIST:POWer[:LeVel]?
n.a.	LIST:POWer[:LeVel]:POINTs?
n.a.	LIST:RESistance[:LeVel]
n.a.	LIST:RESistance[:LeVel]?
n.a.	LIST:RESistance[:LeVel]:POINTs?
n.a.	LIST:STIME:RTIME
n.a.	LIST:STIME:DWELL
n.a.	LIST:RTIME?
n.a.	LIST:RTIME:POINTs?
LIST:STATe	LIST[:STATe]
LIST:STATe?	LIST[:STATe]?
n.a.	LIST:STIME:DWELL?
n.a.	LIST:STIME:DWELL:POINTs?
n.a.	LIST:STIME:RTIME?
n.a.	LIST:STIME:RTIME:POINTs?
LIST:VOLTage[:LeVel]	LIST:VOLTage[:LeVel]
n.a.	LIST:VOLTage[:LeVel]?
n.a.	LIST:VOLTage[:LeVel]:POINTs?
LIST:VOLTage:RTIME	LIST:RTIME
LIST:VOLTage:DWELL	LIST:DWELL
LIST:VOLTage:STRamp	LIST:STIME:RTIME

LIST:VOLTage:STDWell

n.a.

n.a.

LIST:STIME:DWELL

LIST:TRIGger[:ENABle]

LIST:TRIGger[:ENABle]?

Subsystem MEASure

MEASure:CURRent[:DC]?

MEASure:EXternal[:DC]?

MEASure:POWer[:DC]?

MEASure:RESistance[:DC]?

n.a.

MEASure:VOLTage[:DC]?

MEASure:CURRent?

MEASure:VOLTage:EXternal?

MEASure:POWer?

MEASure:RESistance?

MEASure:TEMPerature?

MEASure:VOLTage?

Subsystem MODE

MODE:CURRent[:DC]

FUNCTION:CURRent[:DC]

MODE:VOLTage[:DC]

FUNCTION:VOLTage[:DC]

MODE?

FUNCTION?

FUNCTION:MODE

FUNCTION:MODE

FUNCTION:MODE?

Subsystem OUTPut

OUTPut

OUTPut?

n.a.

n.a.

n.a.

n.a.

n.a.

n.a.

n.a.

n.a.

n.a.

OUTPut[:STATE]

OUTPut[:STATE]?

OUTPut[:STATE]:TRIGgered

OUTPut[:STATE]:TRIGgered?

OUTPut:MODE

OUTPut:MODE?

OUTPut:WDOG[:STATE]

OUTPut:WDOG[:STATE]?

OUTPut:WDOG:RESet

OUTPut:WDOG:TIMEout

OUTPut:WDOG:TIMEout?

Subsystem PORT

n.a.

PORT:IO:IPIN?

Subsystem POWer

n.a.

n.a.

n.a.

n.a.

POWer[:LEVel][:IMMediate]

POWer[:LEVel][:IMMediate]?

POWer[:LEVel][:TRIGgered]

POWer[:LEVel][:TRIGgered]?

POWer:RANGe? n.a.

Subsystem PROGram

PROGram[:SElected]:BEGin n.a.
PROGram[:SElected]:DElete[:SElected] n.a.
PROGram[:SElected]:DElete:ALL n.a.
PROGram[:SElected]:END n.a.
PROGram[:SElected]:NAME n.a.
PROGram[:SElected]:STATe n.a.

Subsystem RECTangle

n.a. RECTangle[:STATe]
n.a. RECTangle[:STATe]?
n.a. RECTangle:CURRent[:LEVel]
n.a. RECTangle:CURRent[:LEVel]?
n.a. RECTangle:DWELL
n.a. RECTangle:DWELL?
n.a. RECTangle:MODE
n.a. RECTangle:MODE?
n.a. RECTangle:VOLTag[:LEVel]
n.a. RECTangle:VOLTag[:LEVel]?

Subsystem RESistance

n.a. RESistance[:LEVel][:IMMediate]
n.a. RESistance[:LEVel][:IMMediate]?
n.a. RESistance[:LEVel]:TRIGgered
n.a. RESistance[:LEVel]:TRIGgered?
RESistance:RANGe? n.a.

Subsystem SERvice

n.a. SERvice:CALibration[:STATe]
n.a. SERvice:CALibration[:STATe]?

Subsystem SETup

SETup:ADC n.a.
SETup:ADC? n.a.
SETup? n.a.

Subsystem STATus

STATus:OPERation:CONDition? STATus:OPERation:CONDition?
STATus:OPERation:ENABLe STATus:OPERation:ENABLe

STATUS:OPERation:ENABLE?
STATUS:OPERation[:EVENT]?
STATUS:PRESet
STATUS:QUEStionable:CONDition?
STATUS:QUEStionable:ENABLE
STATUS:QUEStionable:ENABLE?
STATUS:QUEStionable[:EVENT]?

STATUS:OPERation:ENABLE?
STATUS:OPERation[:EVENT]?
STATUS:PRESet
STATUS:QUEStionable:CONDition?
STATUS:QUEStionable:ENABLE
STATUS:QUEStionable:ENABLE?
STATUS:QUEStionable[:EVENT]?

Subsystem SYSTEM

n.a.	SYSTEM:BEEP
n.a.	SYSTEM:COMMunicate:CAN:ADdResS
n.a.	SYSTEM:COMMunicate:CAN:ADdResS?
n.a.	SYSTEM:COMMunicate:CAN:BAUD
n.a.	SYSTEM:COMMunicate:CAN:BAUD?
n.a.	SYSTEM:COMMunicate:CAN:TERMination
n.a.	SYSTEM:COMMunicate:CAN:TERMination?
n.a.	SYSTEM:COMMunicate:GPIB:ADdResS
n.a.	SYSTEM:COMMunicate:GPIB:ADdResS?
n.a.	SYSTEM:COMMunicate:LAN:DHCP[:STATe]
n.a.	SYSTEM:COMMunicate:LAN:DHCP[:STATe]?
n.a.	SYSTEM:COMMunicate:LAN:DNS[:ADdResS]
n.a.	SYSTEM:COMMunicate:LAN:DNS[:ADdResS]?
n.a.	SYSTEM:COMMunicate:LAN:GATeway[:ADdResS]
n.a.	SYSTEM:COMMunicate:LAN:GATeway[:ADdResS]?
n.a.	SYSTEM:COMMunicate:LAN:HOSTname?
n.a.	SYSTEM:COMMunicate:LAN:IP[:ADdResS]
n.a.	SYSTEM:COMMunicate:LAN:IP[:ADdResS]?
n.a.	SYSTEM:COMMunicate:LAN:MAC[:ADdResS]?
n.a.	SYSTEM:COMMunicate:LAN:PORT
n.a.	SYSTEM:COMMunicate:LAN:PORT?
n.a.	SYSTEM:COMMunicate:LAN:SUBNet[:MASK]
n.a.	SYSTEM:COMMunicate:LAN:SUBNet[:MASK]?
n.a.	SYSTEM:COMMunicate:SERial:BAUD
n.a.	SYSTEM:COMMunicate:SERial:BAUD?
n.a.	SYSTEM:COMMunicate:SERial:BITs?
SYSTEM:COMMunicate:SERial:CONTRol:RTS	n.a.
SYSTEM:COMMunicate:SERial[:RECeive]:PACE	n.a.
n.a.	SYSTEM:COMMunicate:SERial:PARity
n.a.	SYSTEM:COMMunicate:SERial:PARity?
n.a.	SYSTEM:COMMunicate:SERial:SBITs
n.a.	SYSTEM:COMMunicate:SERial:SBITs?

n.a.	SYSTem:COMMunicate:VCP:BAUD
n.a.	SYSTem:COMMunicate:VCP:BAUD?
n.a.	SYSTem:COMMunicate:VCP:BITS?
n.a.	SYSTem:COMMunicate:VCP:PARity
n.a.	SYSTem:COMMunicate:VCP:PARity?
n.a.	SYSTem:COMMunicate:VCP:SBITs
n.a.	SYSTem:COMMunicate:VCP:SBITs?
n.a.	SETTing:EXTErnal:ENABle
n.a.	SETTing:EXTErnal:ENABle?
SYSTem:CONTRol	SETTing:EXTErnal[:STATe]
SYSTem:CONTRol?	SETTing:EXTErnal[:STATe]?
n.a.	SYSTem:DATE
n.a.	SYSTem:DATE?
n.a.	SYSTem:ERRor:ALL?
n.a.	SYSTem:ERRor:COUNt?
SYSTem:ERRor?	SYSTem:ERRor[:NEXT]?
SYSTem:FAN	SYSTem:COOLing[:MODE]
SYSTem:FAN?	SYSTem:COOLing[:MODE]?
n.a.	SYSTem:HELp:HEADers?
n.a.	SYSTem:KLOCK
n.a.	SYSTem:KLOCK?
SYSTem:LANGuage	n.a.
SYSTem:LANGuage?	n.a.
SYSTem:PARAmeter	SERVice[:PARAmeter]:VALue
SYSTem:PARAmeter?	SERVice[:PARAmeter]:VALue?
n.a.	SYSTem:PRESet
SYSTem:PROTEction[:LEVel]	OUTPut:WDOG:DELay
SYSTem:PROTEction[:LEVel]?	OUTPut:WDOG:DELay?
n.a.	OUTPut:WDOG:RESet
SYSTem:PROTEction:STATe	OUTPut:WDOG[:STATe]
SYSTem:PROTEction:STATe?	OUTPut:WDOG[:STATe]?
SYSTem:PROTEction:TRIPped?	n.a.
n.a.	SYSTem:REMote
SYSTem:SPEEd	FUNCTion:SPEEd
SYSTem:SPEEd?	FUNCTion:SPEEd?
SYSTem:STRing	n.a.
n.a.	SYSTem:TIME
n.a.	SYSTem:TIME?
SYSTem:VERSion?	SYSTem:VERSion?

Subsystem TRIGger

n.a.	ABORt
n.a.	INITiate[:IMMediate]
n.a.	INITiate:CONTinuous
n.a.	INITiate:CONTinuous?
n.a.	TRIGger[:IMMediate]
n.a.	TRIGger:DELay
n.a.	TRIGger:DELay?
n.a.	TRIGger:HOLDoff
n.a.	TRIGger:HOLDoff?
n.a.	TRIGger:LEVel:CURRent
n.a.	TRIGger:LEVel:CURRent?
n.a.	TRIGger:LEVel:VOLTagE
n.a.	TRIGger:LEVel:VOLTagE?
n.a.	TRIGger:SLOPe
n.a.	TRIGger:SLOPe?
TRIGger[:SEquence]:SOURce	TRIGger:SOURce
TRIGger[:SEquence]:SOURce?	TRIGger:SOURce?
TRIGger[:SEquence]:TIMer	n.a.
TRIGger[:SEquence]:TIMer?	n.a.

Subsystem VOLTagE

VOLTagE[:LEVel][:IMMediate]	VOLTagE[:LEVel][:IMMediate]
VOLTagE[:LEVel][:IMMediate]?	VOLTagE[:LEVel][:IMMediate]?
VOLTagE[:LEVel]:TRIGgered	VOLTagE[:LEVel]:TRIGgered
VOLTagE[:LEVel]:TRIGgered?	VOLTagE[:LEVel]:TRIGgered?
VOLTagE:MODE	n.a.
VOLTagE:MODE?	n.a.
VOLTagE:PROTection[:LEVel]:HIGH	VOLTagE:PROTection[:LEVel]:HIGH
VOLTagE:PROTection[:LEVel]:HIGH?	VOLTagE:PROTection[:LEVel]:HIGH?
VOLTagE:PROTection[:LEVel]:LOW	VOLTagE:PROTection[:LEVel]:LOW
VOLTagE:PROTection[:LEVel]:LOW?	VOLTagE:PROTection[:LEVel]:LOW?
VOLTagE:RANGe	n.a.
VOLTagE:RANGe?	n.a.
VOLTagE:RANGe:AUTO	n.a.

With NL series only present for compatibility.

Subsystem WAVeform

n.a.	WAVeform:ARBitrary[:LEVel]
n.a.	WAVeform:ARBitrary[:LEVel]?
n.a.	WAVeform:FREQuency

n.a.	WAVeform:FREQuency?
n.a.	WAVeform:OFFSet:CURRent
n.a.	WAVeform:OFFSet:CURRent?
n.a.	WAVeform:OFFSet:VOLTage
n.a.	WAVeform:OFFSet:VOLTage?
n.a.	WAVeform:SYNChronize
n.a.	WAVeform:SYNChronize?
n.a.	WAVeform:TYPE
n.a.	WAVeform:TYPE?