

Quick Reference Guide

SCPI Command Summary

The following conventions are used for SCPI command syntax for remote interface programming:

- Square brackets ([]) indicate optional keywords or parameters.
- Braces ({ }) enclose parameter choices within a command string.
- Triangle brackets (< >) enclose parameters for which you must substitute a value.
- A vertical bar (|) separates multiple parameter choices.

Rules for Using a Channel List

Many of the SCPI commands for the HP 34970A include a *scan_list* or *ch_list* parameter which allow you to specify one or more channels. The channel number has the form (@*scc*), where *s* is the slot number (100, 200, or 300) and *cc* is the channel number. You can specify a single channel, multiple channels, or a range of channels as shown below.

- The following command configures a scan list to include only channel 10 on the module in slot 300.

```
ROUT:SCAN (@310)
```

- The following command configures a scan list to include multiple channels on the module in slot 200. The scan list now contains only channels 10, 12, and 15 (*the scan list is redefined each time you send a new ROUTe:SCAN command*).

```
ROUT:SCAN (@210,212,215)
```

- The following command configures a scan list to include a range of channels. When you specify a range of channels, the range *may* contain invalid channels (they are ignored), but the first and last channel in the range must be valid. The scan list now contains channels 5 through 10 (slot 100) and channel 15 (slot 200).

```
ROUT:SCAN (@105:110,215)
```

Scan Measurement Commands

(see page 226 in the User's Guide)

S MEASure
:TEMPerature? {**TCouple**|RTD|FRTD|THERmistor|DEF}
 , {<type>|DEF} [, 1 [, {<resolution>|MIN|MAX|DEF}]] , (@<scan_list>)
:VOLTag:DC? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:VOLTag:AC? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:RESistance? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:FRESistance? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:CURRent:DC? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:CURRent:AC? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:FREQUency? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:PERiod? [{<range>|**AUTO**|MIN|MAX|DEF}
 [, <resolution>|MIN|MAX|DEF}] ,] (@<scan_list>)
:DIGital:BYTE? (@<scan_list>)
:TOTalize? {**READ**|RRESet} , (@<scan_list>)

Monitor Commands

(see page 237 in the User's Guide)

ROUTe
:MONitor (@<channel>)
:MONitor?

ROUTe
:MONitor:STATe {**OFF**|ON}
:MONitor:STATe?

ROUTE:MONitor:DATA?

Scan Statistics Commands

(see page 233 in the User's Guide)

CALCulate
:AVERage:MINimum? [(@<ch_list>)]
:AVERage:MINimum:TIME? [(@<ch_list>)]
:AVERage:MAXimum? [(@<ch_list>)]
:AVERage:MAXimum:TIME? [(@<ch_list>)]
:AVERage:AVERage? [(@<ch_list>)]
:AVERage:PTPeak? [(@<ch_list>)]
:AVERage:COUNT? [(@<ch_list>)]
:AVERage:CLEar [(@<ch_list>)]

DATA:LAST? [<num_rdg> ,] [(@<channel>)]

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Scan Configuration Commands

(see page 226 in the User's Guide)

- ROUTE
- S** :SCAN (@<scan_list>)
:SCAN?
:SCAN:SIZE?
 - G** TRIGger
:SOURCE {BUS | **IMMEDIATE** | EXTERNAL | ALARm1 | ALARm2 | ALARm3 | ALARm4 | TIMER}
:SOURCE?
 - G** TRIGger
:TIMER {<seconds> | **MIN** | MAX}
:TIMER?
 - G** TRIGger
:COUNT {<count> | **MIN** | MAX | INFINitY}
:COUNT?
- ROUTE
- :CHANnel:DElay <seconds>[, (@<ch_list>)]
 - :CHANnel:DElay? [(@<ch_list>)]
 - :CHANnel:DElay:AUTO {OFF | ON} [, (@<ch_list>)]
 - :CHANnel:DElay:AUTO? [(@<ch_list>)]
- G** FORMat
:READING:ALARm {**OFF** | ON}
:READING:ALARm?
:READING:CHANnel {**OFF** | ON}
:READING:CHANnel?
:READING:TIME {**OFF** | ON}
:READING:TIME?
:READING:UNIT {**OFF** | ON}
:READING:UNIT?
 - G** FORMat
:READING:TIME:TYPE {ABSolute | **RELative**}
:READING:TIME:TYPE?
- ABORt
- INITiate
- READ?

Scan Memory Commands

(see page 235 in the User's Guide)

- DATA:POINTs?
- DATA:REMOve? <num_rdgs>
- SYSTEM:TIME:SCAN?
- FETCh?
- R? [<max_count>]

- S** *This command redefines the scan list when executed.*
- G** *This command applies to all channels in the instrument (Global setting). Default parameters are shown in **bold**.*

Scanning With an External Instrument

(see page 239 in the User's Guide)

- ROUTE
- S** :SCAN (@<scan_list>)
:SCAN?
:SCAN:SIZE?
 - G** TRIGger
:SOURce {BUS | IMMEDIATE | EXTERNAL | **TIMER**}
:SOURCE?
 - G** TRIGger
:TIMER {<seconds> | **MIN** | MAX}
:TIMER?
 - G** TRIGger
:COUNT {<count> | MIN | MAX | **INFINITY**}
:COUNT?
- ROUTE
- :CHANNEL:DELAY <seconds> [, (@<ch_list>)]
:CHANNEL:DELAY? [(@<ch_list>)]
- G** ROUTE
:CHANNEL:ADVance:SOURce {**EXTERNAL** | BUS | IMMEDIATE}
:CHANNEL:ADVance:SOURCE?
- ROUTE
- :CHANNEL:FWIRE {OFF | ON} [, (@<ch_list>)]
:CHANNEL:FWIRE? [(@<ch_list>)]
- G** INSTRument
:DMM {OFF | ON}
:DMM?
:DMM:INSTALLED?

- S** *This command redefines the scan list when executed.*
- G** *This command applies to all channels in the instrument (Global setting). Default parameters are shown in **bold**.*

Temperature Configuration Commands

(see page 219 in the User's Guide)

```
S CONFigure
    :TEMPerature {TCouple|RTD|FRTD|THERmistor|DEF}
      , {<type>|DEF}[ , 1[ , {<resolution>|MIN|MAX|DEF}]] , (@<ch_list>)
CONFigure? [ (@<ch_list>)]

UNIT
    :TEMPerature {C|F|K}[ , (@<ch_list>)]
    :TEMPerature? [ (@<ch_list>)]

[SENSE:]TEMPerature:TRANsducer
    :TYPE {TCouple|RTD|FRTD|THERmistor|DEF}[ , (@<ch_list>)]
    :TYPE? [ (@<ch_list>)]

[SENSE:]TEMPerature:TRANsducer
    :TCouple:TYPE {B|E|J|K|N|R|S|T}[ , (@<ch_list>)]
    :TCouple:TYPE? [ (@<ch_list>)]
    :TCouple:CHECK {OFF|ON}[ , (@<ch_list>)]
    :TCouple:CHECK? [ (@<ch_list>)]

[SENSE:]TEMPerature:TRANsducer
    :TCouple:RJUNction:TYPE {INTernal|EXtErnal|FIXed}[ , (@<ch_list>)]
    :TCouple:RJUNction:TYPE? [ (@<ch_list>)]
    :TCouple:RJUNction {<temperature>|MIN|MAX}[ , (@<ch_list>)]
    :TCouple:RJUNction? [ (@<ch_list>)]

[SENSE:]TEMPerature:RJUNction? [ (@<ch_list>)]

[SENSE:]TEMPerature:TRANsducer
    :RTD:TYPE {85|91}[ , (@<ch_list>)]
    :RTD:TYPE? [ (@<ch_list>)]
    :RTD:RESistance[:REFerence] <reference>[ , (@<ch_list>)]
    :RTD:RESistance[:REFerence]? [ (@<ch_list>)]

[SENSE:]TEMPerature:TRANsducer
    :FRTD:TYPE {85|91}[ , (@<ch_list>)]
    :FRTD:TYPE? [ (@<ch_list>)]
    :FRTD:RESistance[:REFerence] <reference>[ , (@<ch_list>)]
    :FRTD:RESistance[:REFerence]? [ (@<ch_list>)]

[SENSE:]TEMPerature:TRANsducer
    :THERmistor:TYPE {2252|5000|10000}[ , (@<ch_list>)]
    :THERmistor:TYPE? [ (@<ch_list>)]

[SENSE:]
    TEMPerature:NPLC {0.02|0.2|1|2|10|20|100|200|MIN|MAX}[ , (@<ch_list>)]
    TEMPerature:NPLC? [ { (@<ch_list>)|MIN|MAX}]
```

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Voltage Configuration Commands

(see page 223 in the User's Guide)

```
S CONFigure
    :VOLTage:DC [ {<range>|AUTO|MIN|MAX|DEF}
      [ ,<resolution>|MIN|MAX|DEF} ] , ] (@<ch_list>)
CONFigure? [ (@<ch_list>)]

[SENSE:]
    VOLTage:DC:RANGE {<range>|MIN|MAX}[ , (@<ch_list>)]
    VOLTage:DC:RANGE? [ { (@<ch_list>)|MIN|MAX} ]
    VOLTage:DC:RANGE:AUTO {OFF|ON}[ , (@<ch_list>)]
    VOLTage:DC:RANGE:AUTO? [ (@<ch_list>)]

[SENSE:]
    VOLTage:DC:RESolution {<resolution>|MIN|MAX}[ , (@<ch_list>)]
    VOLTage:DC:RESolution? [ { (@<ch_list>)|MIN|MAX} ]

[SENSE:]
    VOLTage:DC:APERture {<time>|MIN|MAX}[ , (@<ch_list>)]
    VOLTage:DC:APERture? [ { (@<ch_list>)|MIN|MAX} ]

[SENSE:]
    VOLTage:DC:NPLC {0.02|0.2|1|2|10|20|100|200|MIN|MAX}[ , (@<ch_list>)]
    VOLTage:DC:NPLC? [ { (@<ch_list>)|MIN|MAX} ]

INPut
    :IMPedance:AUTO {OFF|ON}[ , (@<ch_list>)]
    :IMPedance:AUTO? [ (@<ch_list>)]

[SENSE:]
    ZERO:AUTO {OFF|ONCE|ON}[ , (@<ch_list>)]
    ZERO:AUTO? [ (@<ch_list>)]

S CONFigure
    :VOLTage:AC [ {<range>|AUTO|MIN|MAX|DEF}
      [ ,<resolution>|MIN|MAX|DEF} ] , ] (@<scan_list>)
CONFigure? [ (@<ch_list>)]

[SENSE:]
    VOLTage:AC:RANGE {<range>|MIN|MAX}[ , (@<ch_list>)]
    VOLTage:AC:RANGE? [ { (@<ch_list>)|MIN|MAX} ]
    VOLTage:AC:RANGE:AUTO {OFF|ON}[ , (@<ch_list>)]
    VOLTage:AC:RANGE:AUTO? [ (@<ch_list>)]

[SENSE:]
    VOLTage:AC:BANDwidth {3|20|200|MIN|MAX}[ , (@<ch_list>)]
    VOLTage:AC:BANDwidth? [ { (@<ch_list>)|MIN|MAX} ]
```

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Resistance Configuration Commands

(see page 224 in the User's Guide)

```
S CONFigure
    :RESistance [ {<range>|AUTO|MIN|MAX|DEF}
      [ ,<resolution>|MIN|MAX|DEF} ] , ] (@<ch_list>)
CONFigure? [ (@<ch_list>)]

[SENSE:]
RESistance:RANGE {<range>|MIN|MAX}[ , (@<ch_list>)]
RESistance:RANGE? [ { (@<ch_list>)|MIN|MAX} ]
RESistance:RANGE:AUTO {OFF|ON}[ , (@<ch_list>)]
RESistance:RANGE:AUTO? [ (@<ch_list>)]

[SENSE:]
RESistance:RESolution {<resolution>|MIN|MAX}[ , (@<ch_list>)]
RESistance:RESolution? [ { (@<ch_list>)|MIN|MAX} ]
RESistance:APERTure {<time>|MIN|MAX}[ , (@<ch_list>)]
RESistance:APERTure? [ { (@<ch_list>)|MIN|MAX} ]
RESistance:NPLC {0.02|0.2|1|2|10|20|100|200|MIN|MAX}[ , (@<ch_list>)]
RESistance:NPLC? [ { (@<ch_list>)|MIN|MAX} ]

[SENSE:]
RESistance:OCOMPensated {OFF|ON}[ , (@<ch_list>)]
RESistance:OCOMPensated? [ (@<ch_list>)]

S CONFigure
    :FRESistance [ {<range>|AUTO|MIN|MAX|DEF}
      [ ,<resolution>|MIN|MAX|DEF} ] , ] (@<ch_list>)
CONFigure? [ (@<ch_list>)]

[SENSE:]
FRESistance:RANGE {<range>|MIN|MAX}[ , (@<ch_list>)]
FRESistance:RANGE? [ { (@<ch_list>)|MIN|MAX} ]
FRESistance:RANGE:AUTO {OFF|ON}[ , (@<ch_list>)]
FRESistance:RANGE:AUTO? [ (@<ch_list>)]

[SENSE:]
FRESistance:RESolution {<resolution>|MIN|MAX}[ , (@<ch_list>)]
FRESistance:RESolution? [ { (@<ch_list>)|MIN|MAX} ]
FRESistance:APERTure {<time>|MIN|MAX}[ , (@<ch_list>)]
FRESistance:APERTure? [ { (@<ch_list>)|MIN|MAX} ]
FRESistance:NPLC {0.02|0.2|1|2|10|20|100|200|MIN|MAX}[ , (@<ch_list>)]
FRESistance:NPLC? [ { (@<ch_list>)|MIN|MAX} ]

[SENSE:]
FRESistance:OCOMPensated {OFF|ON}[ , (@<ch_list>)]
FRESistance:OCOMPensated? [ (@<ch_list>)]
```

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Current Configuration Commands

(see page 224 in the User's Guide)

Valid only on channels 21 and 22 on the HP 34901A multiplexer module.

```
S CONFigure
    :CURRENT:DC [ { <range> | AUTO | MIN | MAX | DEF }
        [ , <resolution> | MIN | MAX | DEF ] ] , ( @<ch_list> )
CONFigure? [ ( @<ch_list> ) ]

[ SENSE: ]
CURRENT:DC:RANGE { <range> | MIN | MAX } [ , ( @<ch_list> ) ]
CURRENT:DC:RANGE? [ { ( @<ch_list> ) | MIN | MAX } ]
CURRENT:DC:RANGE:AUTO { OFF | ON } [ , ( @<ch_list> ) ]
CURRENT:DC:RANGE:AUTO? [ ( @<ch_list> ) ]

[ SENSE: ]
CURRENT:DC:RESolution { <resolution> | MIN | MAX } [ , ( @<ch_list> ) ]
CURRENT:DC:RESolution? [ { ( @<ch_list> ) | MIN | MAX } ]

[ SENSE: ]
CURRENT:DC:APERTure { <time> | MIN | MAX } [ , ( @<ch_list> ) ]
CURRENT:DC:APERTure? [ { ( @<ch_list> ) | MIN | MAX } ]

[ SENSE: ]
CURRENT:DC:NPLC { 0.02 | 0.2 | 1 | 2 | 10 | 20 | 100 | 200 | MIN | MAX } [ , ( @<ch_list> ) ]
CURRENT:DC:NPLC? [ { ( @<ch_list> ) | MIN | MAX } ]

S CONFigure
    :CURRENT:AC [ { <range> | AUTO | MIN | MAX | DEF }
        [ , <resolution> | MIN | MAX | DEF ] ] , ( @<ch_list> )
CONFigure? [ ( @<ch_list> ) ]

[ SENSE: ]
CURRENT:AC:RANGE { <range> | MIN | MAX } [ , ( @<ch_list> ) ]
CURRENT:AC:RANGE? [ { ( @<ch_list> ) | MIN | MAX } ]
CURRENT:AC:RANGE:AUTO { OFF | ON } [ , ( @<ch_list> ) ]
CURRENT:AC:RANGE:AUTO? [ ( @<ch_list> ) ]

[ SENSE: ]
CURRENT:AC:BANDwidth { 3 | 20 | 200 | MIN | MAX } [ , ( @<ch_list> ) ]
CURRENT:AC:BANDwidth? [ { ( @<ch_list> ) | MIN | MAX } ]
```

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Frequency and Period Configuration Commands

(see page 214 in the User's Guide)

```
S CONFigure
    :FREQuency [ { <range> | AUTO | MIN | MAX | DEF }
                [ , <resolution> | MIN | MAX | DEF ] , ] ( @ <ch_list> )
CONFigure? [ ( @ <ch_list> ) ]

[SENSE:]
FREQuency:VOLTage:RANGe { <range> | MIN | MAX } [ , ( @ <ch_list> ) ]
FREQuency:VOLTage:RANGe? [ { ( @ <ch_list> ) | MIN | MAX } ]
FREQuency:VOLTage:RANGe:AUTO { OFF | ON } [ , ( @ <ch_list> ) ]
FREQuency:VOLTage:RANGe:AUTO? [ ( @ <ch_list> ) ]

[SENSE:]
FREQuency:APERTure { 0.01 | 0.1 | 1 | MIN | MAX } [ , ( @ <ch_list> ) ]
FREQuency:APERTure? [ { ( @ <ch_list> ) | MIN | MAX } ]

[SENSE:]
FREQuency:RANGe:LOWer { 3 | 20 | 200 | MIN | MAX } [ , ( @ <ch_list> ) ]
FREQuency:RANGe:LOWer? [ { ( @ <ch_list> ) | MIN | MAX } ]

S CONFigure
    :PERiod [ { <range> | AUTO | MIN | MAX | DEF }
            [ , <resolution> | MIN | MAX | DEF ] , ] ( @ <scan_list> )
CONFigure? [ ( @ <ch_list> ) ]

[SENSE:]
PERiod:VOLTage:RANGe { <range> | MIN | MAX } [ , ( @ <ch_list> ) ]
PERiod:VOLTage:RANGe? [ { ( @ <ch_list> ) | MIN | MAX } ]
PERiod:VOLTage:RANGe:AUTO { OFF | ON } [ , ( @ <ch_list> ) ]
PERiod:VOLTage:RANGe:AUTO? [ ( @ <ch_list> ) ]

[SENSE:]
PERiod:APERTure { 0.01 | 0.1 | 1 | MIN | MAX } [ , ( @ <ch_list> ) ]
PERiod:APERTure? [ { ( @ <ch_list> ) | MIN | MAX } ]
```

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Mx+B Scaling Commands

(see page 244 in the User's Guide)

```
CALCulate
:SCALE:GAIN <gain>[ , (@<ch_list> ) ]
:SCALE:GAIN? [ (@<ch_list> ) ]
:SCALE:OFFSET <offset>[ , (@<ch_list> ) ]
:SCALE:OFFSET? [ (@<ch_list> ) ]
:SCALE:UNIT <quoted_string>[ , (@<ch_list> ) ]
:SCALE:UNIT? [ (@<ch_list> ) ]

CALCulate:SCALE:OFFSET:NULL [ (@<ch_list> ) ]

CALCulate
:SCALE:STATE {OFF|ON}[ , (@<ch_list> ) ]
:SCALE:STATE? [ (@<ch_list> ) ]
```

Alarm Limit Commands

(see page 247 in the User's Guide)

```
OUTPut
:ALARm[1|2|3|4]:SOURce (@<ch_list>)
:ALARm[1|2|3|4]:SOURce?

CALCulate
:LIMit:UPPer <hi_limit>[ , (@<ch_list> ) ]
:LIMit:UPPer? [ (@<ch_list> ) ]
:LIMit:UPPer:STATE {OFF|ON}[ , (@<ch_list> ) ]
:LIMit:UPPer:STATE? [ (@<ch_list> ) ]

CALCulate
:LIMit:LOWer <lo_limit>[ , (@<ch_list> ) ]
:LIMit:LOWer? [ (@<ch_list> ) ]
:LIMit:LOWer:STATE {OFF|ON}[ , (@<ch_list> ) ]
:LIMit:LOWer:STATE? [ (@<ch_list> ) ]

SYSTem:ALARm?

G OUTPut
:ALARm:MODE {LATCh|TRACK}
:ALARm:MODE?
:ALARm:SLOPe {NEGative|POSitive}
:ALARm:SLOPe?

OUTPut
:ALARm{1|2|3|4}:CLEar
:ALARm:CLEar:ALL

STATus
:ALARm:CONDition?
:ALARm:ENABle <enable_value>
:ALARm:ENABle?
:ALARm[:EVENT]?
```

Ch 01	Ch 02	Ch 03	Ch 04	Ch 05
DIO (LSB)	DIO (MSB)	Totalizer	DAC	DAC

```
CALCulate
:COMPare:TYPE {EQUAL|NEQual}[ , (@<ch_list> ) ]
:COMPare:TYPE? [ (@<ch_list> ) ]
:COMPare:DATA <data>[ , (@<ch_list> ) ]
:COMPare:DATA? [ (@<ch_list> ) ]
:COMPare:MASK <mask>[ , (@<ch_list> ) ]
:COMPare:MASK? [ (@<ch_list> ) ]
:COMPare:STATE {OFF|ON}[ , (@<ch_list> ) ]
:COMPare:STATE? [ (@<ch_list> ) ]
```

G This command applies to all channels in the instrument (Global setting).
Default parameters are shown in **bold**.

Digital Input Commands

(see page 255 in the User's Guide)

Ch 01	Ch 02	Ch 03	Ch 04	Ch 05
DIO (LSB)	DIO (MSB)	Totalizer	DAC	DAC

S CONFigure:DIgital:BYTE (@<scan_list>
CONFigure? [(@<ch_list>)]
[SENSE:]DIgital:DATA:{**BYTE**|WORD}? [(@<ch_list>)]

Totalizer Commands

(see page 256 in the User's Guide)

Ch 01	Ch 02	Ch 03	Ch 04	Ch 05
DIO (LSB)	DIO (MSB)	Totalizer	DAC	DAC

S CONFigure:TOTalize {**READ**|RRESet} ,(@<scan_list>
CONFigure? [(@<ch_list>)]
[SENSE:]
TOTalize:TYPE {**READ**|RRESet}[,(@<ch_list>)]
TOTalize:TYPE? [(@<ch_list>)]
[SENSE:]
TOTalize:SLOPe {NEGative|**POSitive**}[,(@<ch_list>)]
TOTalize:SLOPe? [(@<ch_list>)]
[SENSE:]TOTalize:CLEar:IMMediate [(@<ch_list>)]
[SENSE:]TOTalize:DATA? [(@<ch_list>)]

Digital Output Commands

(see page 258 in the User's Guide)

Ch 01	Ch 02	Ch 03	Ch 04	Ch 05
DIO (LSB)	DIO (MSB)	Totalizer	DAC	DAC

SOURce
:DIgital:DATA[:{**BYTE**|WORD}] <data> ,(@<ch_list>)
:DIgital:DATA[:{**BYTE**|WORD}]? (@<ch_list>)
SOURce:DIgital:STATE? (@<ch_list>)

DAC Output Commands

(see page 258 in the User's Guide)

Ch 01	Ch 02	Ch 03	Ch 04	Ch 05
DIO (LSB)	DIO (MSB)	Totalizer	DAC	DAC

SOURce
:VOLTage <voltage> ,(@<ch_list>)
:VOLTage? (@<ch_list>)

S This command redefines the scan list when executed.
Default parameters are shown in **bold**.

Switch Control Commands

(see page 259 in the User's Guide)

```
ROUTe
  :CLOSe (@<ch_list>)
  :CLOSe:EXCLusive (@<ch_list>)
  :CLOSe? (@<ch_list>)
```

```
ROUTe
  :OPEN (@<ch_list>)
  :OPEN? (@<ch_list>)
```

```
ROUTe:DONE?
```

```
SYSTem:CPON {100|200|300|ALL}
```

Scan Triggering Commands

(see page 228 in the User's Guide)

```
G TRIGger
  :SOURce {BUS|IMMEDIATE|EXTernal|ALARm1|ALARm2|ALARm3|ALARm4|TIMer}
  :SOURce?
```

```
G TRIGger
  :TIMer {<seconds>|MIN|MAX}
  :TIMer?
```

```
G TRIGger
  :COUNT {<count>|MIN|MAX|INFINity}
  :COUNT?
```

```
*TRG
```

```
INITiate
```

```
READ?
```

State Storage Commands

(see page 261 in the User's Guide)

```
*SAV {0|1|2|3|4|5}
*RCL {0|1|2|3|4|5}
```

```
MEMory:STATe
  :NAME {1|2|3|4|5} [, <name>]
  :NAME? {1|2|3|4|5}
```

```
MEMory:STATe:DELeTe {0|1|2|3|4|5}
```

```
MEMory:STATe
  :RECall:AUTO {OFF|ON}
  :RECall:AUTO?
```

```
MEMory:STATe:VALid? {0|1|2|3|4|5}
```

```
MEMory:NStates?
```

G This command applies to all channels in the instrument (Global setting).
Default parameters are shown in **bold**.

System-Related Commands

(see page 264 in the User's Guide)

```
SYSTem
:DATE <yyyy> , <mm> , <dd>
:DATE?
:TIME <hh> , <mm> , <ss.sss>
:TIME?

FORMat
:READING:TIME:TYPE {ABSolute|RELative}
:READING:TIME:TYPE?

*IDN?

SYSTem:CTYPe? {100|200|300}

DIAGnostic
:POKE:SLOT:DATA {100|200|300} , <quoted_string>
:PEEK:SLOT:DATA? {100|200|300}

DISPlay {OFF|ON}
DISPlay?

DISPlay
:TEXT <quoted_string>
:TEXT?
:TEXT:CLear

*RST

SYSTem:PRESet

SYSTem:CPON {100|200|300|ALL}

SYSTem:ERRor?

SYSTem:ALARm?

SYSTem:VERSion?

*TST?
```

Interface Configuration Commands

(see page 269 in the User's Guide)

```
SYSTem:INTERface {GPIB|RS232}

SYSTem:LOCal

SYSTem:REMOte

SYSTem:RWLock
```

Default parameters are shown in **bold**.

Status System Commands

(see page 286 in the User's Guide)

```
*STB?
*SRE <enable_value>
*SRE?

STATus
:QUEStionable:CONDition?
:QUEStionable[:EVENT]?
:QUEStionable:ENABle <enable_value>
:QUEStionable:ENABle?

*ESR?
*ESE <enable_value>
*ESE?

STATus
:ALARm:CONDition?
:ALARm[:EVENT]?
:ALARm:ENABle <enable_value>
:ALARm:ENABle?

STATus
:OPERation:CONDition?
:OPERation[:EVENT]?
:OPERation:ENABle <enable_value>
:OPERation:ENABle?

DATA:POINTs
:EVENT:THREshold <num_rdgs>
:EVENT:THREshold?

*CLS

*PSC {0|1}
*PSC?

*OPC
```

Calibration Commands

(see page 292 in the User's Guide)

```
CALibration?

CALibration:COUNT?

CALibration
:SECure:CODE <new_code>
:SECure:STATe {OFF|ON}, <code>
:SECure:STATe?

CALibration
:STRing <quoted_string>
:STRing?

CALibration
:VALue <value>
:VALue?
```

Service-Related Commands

(see page 294 in the User's Guide)

```
INSTRument
: DMM {OFF|ON}
: DMM?
: DMM:INSTALLED?

DIAGnostic
: DMM:CYCLES?
: DMM:CYCLES:CLEAR (1|2|3}

DIAGnostic
: RELay:CYCLES? [(@<ch_list>)]
: RELay:CYCLES:CLEAR [(@<ch_list>)]

*RST

SYSTEM:PRESet

SYSTEM:CPON {100|200|300|ALL}

SYSTEM:VERSion?

*TST?
```

IEEE 488.2 Common Commands

```
*CLS

*ESR?
*ESE <enable_value>
*ESE?

*IDN?

*OPC

*OPC?

*PSC {0|1}
*PSC?

*RST

*SAV {0|1|2|3|4|5}
*RCL {0|1|2|3|4|5}

*STB?
*SRE <enable_value>
*SRE?

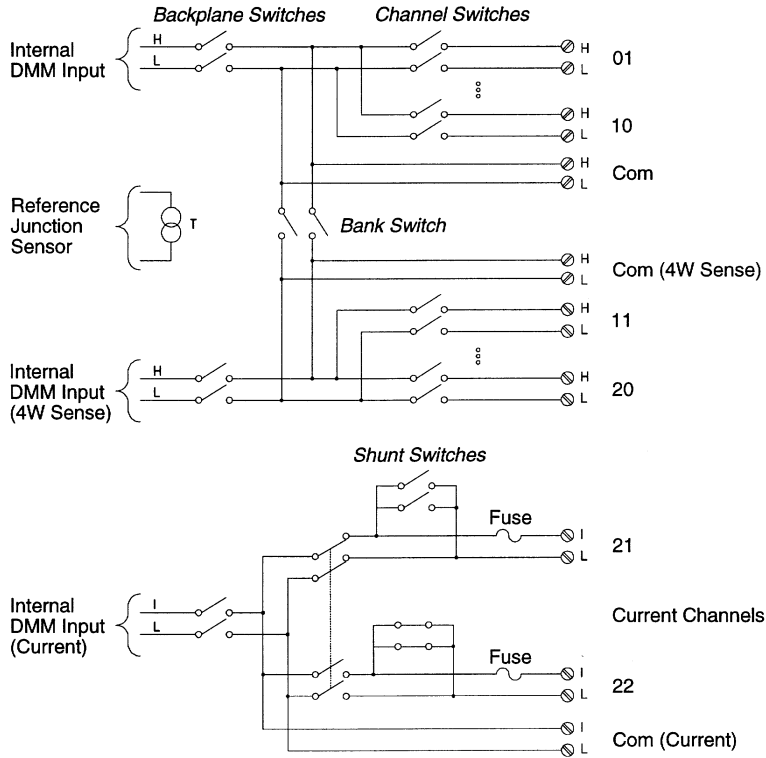
*TRG

*TST?
```

Default parameters are shown in **bold**.

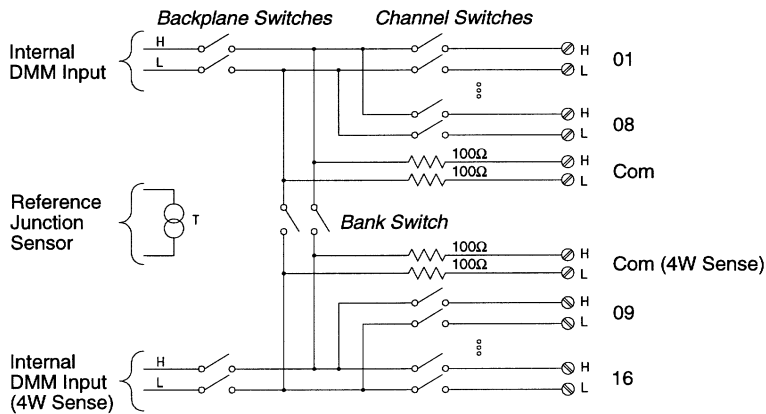
HP 34901A 20-Channel Multiplexer

(see page 164 in the User's Guide)



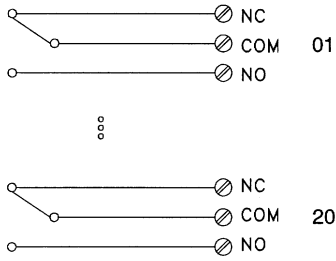
HP 34902A 16-Channel Multiplexer

(see page 166 in the User's Guide)



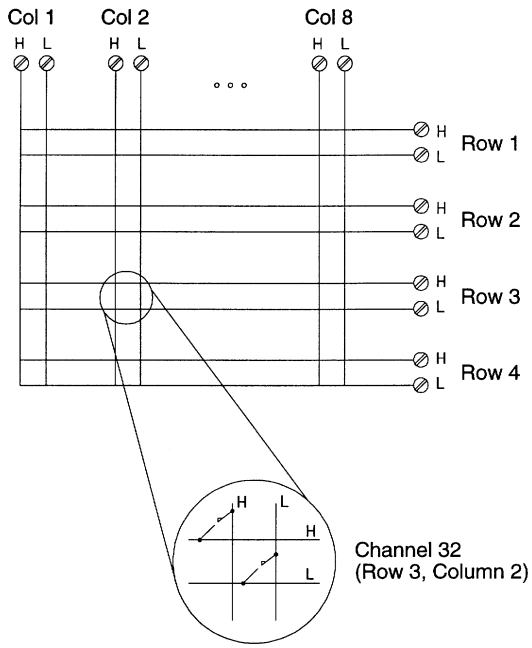
HP 34903A 20-Channel Actuator

(see page 168 in the User's Guide)



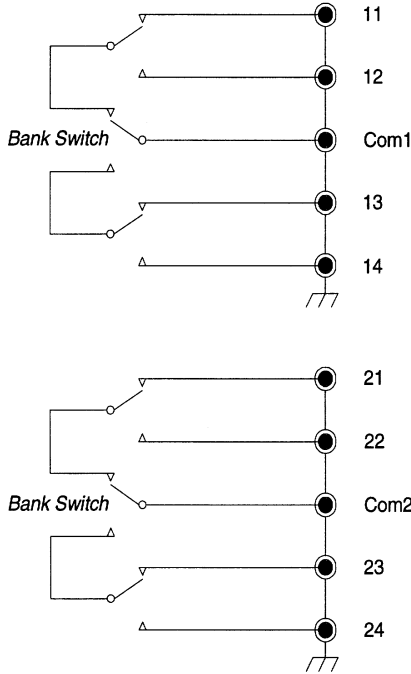
HP 34904A 4x8 Matrix

(see page 170 in the User's Guide)



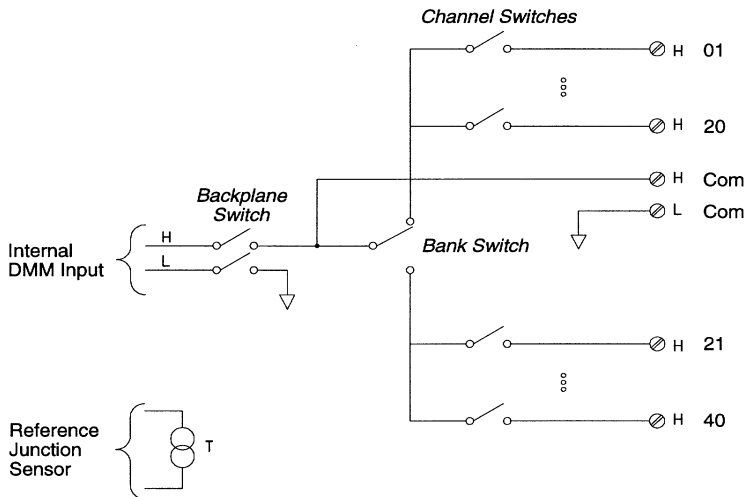
HP 34905A/6A Dual 4-Channel RF Multiplexers

(see page 172 in the User's Guide)



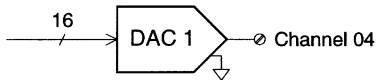
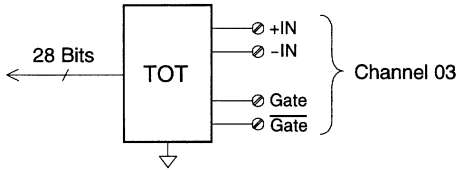
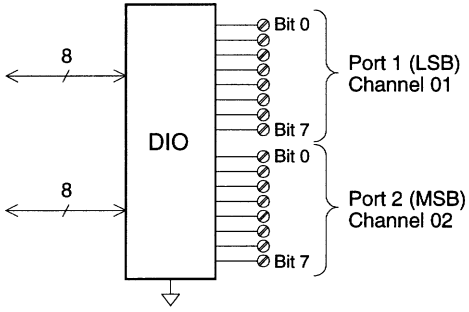
HP 34908A 40-Channel Single-Ended Multiplexer

(see page 174 in the User's Guide)



HP 34907A Multifunction Module

(see page 176 in the User's Guide)



Factory Reset State

The table below shows the state of the instrument after a FACTORY RESET from the *Sto/Rcl* menu or *RST command from the remote interface.

Measurement Configuration	Factory Reset State
Function	DC Volts
Range	Autorange
Resolution	5½ digits
Integration Time	1 PLC
Input Resistance	10 M Ω (fixed for all DCV ranges)
Channel Delay	Automatic Delay
Totalizer Reset Mode	Count Not Reset When Read
Totalizer Edge Detect	Rising Edge
Scanning Operations	Factory Reset State
Scan List	Empty
Reading Memory	All Readings are Cleared
Min, Max, and Average	All Statistical Data is Cleared
Scan Interval Source	Immediate
Scan Interval	Front Panel = 10 Seconds Remote = Immediate
Scan Count	Front Panel = Continuous Remote = 1 Scan Sweep
Scan Reading Format	Reading Only (No Units, Channel, Time)
Monitor in Progress	Stopped
Mx+B Scaling	Factory Reset State
Gain Factor ("M")	1
Scale Factor ("B")	0
Scale Label	Vdc
Alarm Limits	Factory Reset State
Alarm Queue	Not Cleared
Alarm State	Off
HI and LO Alarm Limits	0
Alarm Output	Alarm 1
Alarm Output Configuration	Latched Mode
Alarm Output State	Output Lines are Cleared
Alarm Output Slope	Fail = Low
Module Hardware	Factory Reset State
HP 34901A, 34902A, 34908A	Reset: All Channels Open
HP 34903A, 34904A	Reset: All Channels Open
HP 34905A, 34906A	Reset: Channels s11 and s21 Selected
HP 34907A	Reset: Both DIO Ports = Input, Count = 0, Both DACs = 0 Vdc
System-Related Operations	Factory Reset State
Display State	On
Error Queue	Errors Not Cleared
Stored States	No Change

Part Number 34970-90007
October 1997

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