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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)
```

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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>)
  :VOLTage:DC? [{<range>|AUTO|MIN|MAX|DEF}
     [,<resolution>|MIN|MAX|DEF}],] (@<scan_list>)
  :VOLTage: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_rdgs>,][(@<channel>)]
```

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

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Scan Configuration Commands

(*see page 226 in the User's Guide*)

```
ROUTe
  :SCAN (@<scan_list>)
  :SCAN?
  :SCAN:SIZE?
```

S

```
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?
```

G

```
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**.

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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**.

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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}]] ,(@<scan_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**.

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Voltage Configuration Commands

(*see page 223 in the User's Guide*)

S
```
CONFigure
  :VOLTage:DC [{<range>|AUTO|MIN|MAX|DEF}
     [,<resolution>|MIN|MAX|DEF}],] (@<scan_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**.

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Resistance Configuration Commands

(*see page 224 in the User's Guide*)

S
```
CONFigure
  :RESistance [{<range>|AUTO|MIN|MAX|DEF}
     [,<resolution>|MIN|MAX|DEF}],] (@<scan_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}],] (@<scan_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**.

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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}],] (@<scan_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}],] (@<scan_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**.

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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}],] (@<scan_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**.

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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**.

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Digital Input Commands

(*see page 255 in the User's Guide*)

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

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

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

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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**.

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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**.

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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?
```


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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

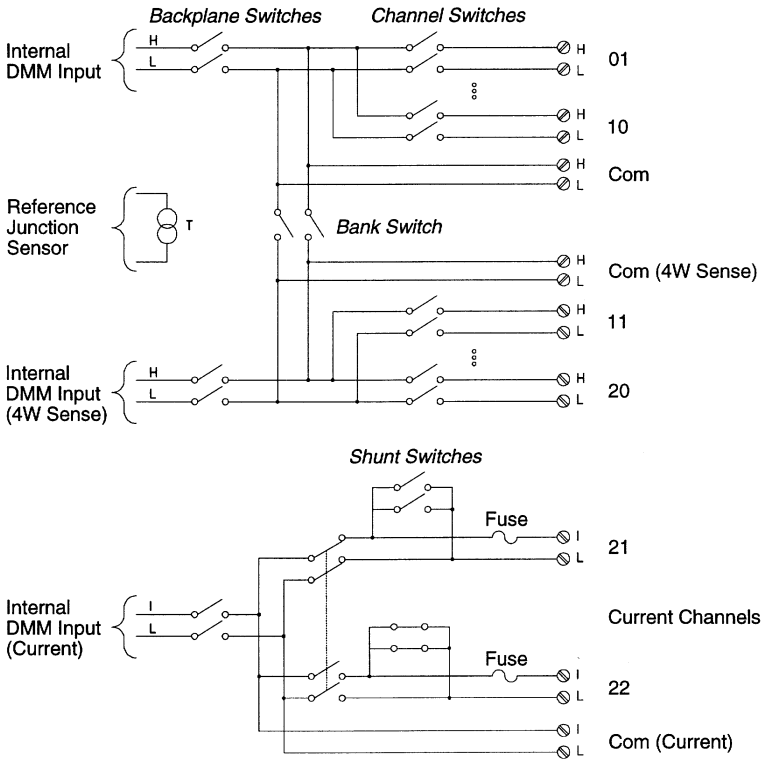
*TST?
```

Default parameters are shown in **bold**.

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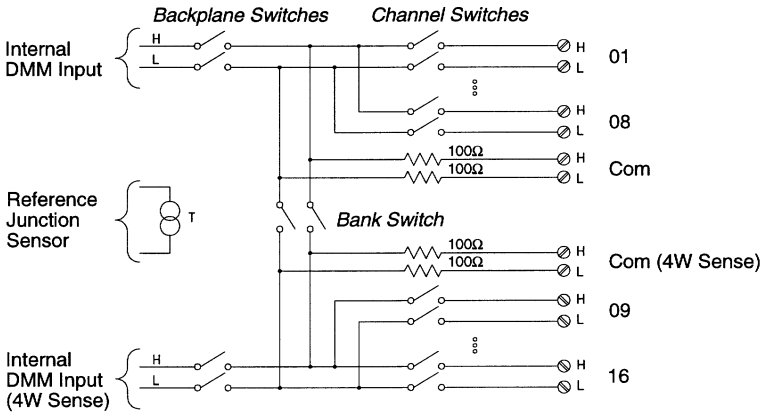
HP 34901A 20-Channel Multiplexer

(*see page 164 in the User's Guide*)



HP 34902A 16-Channel Multiplexer

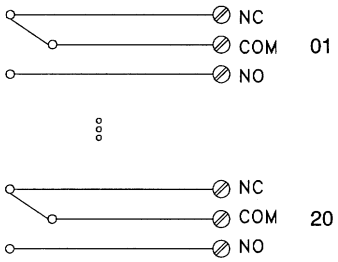
(*see page 166 in the User's Guide*)



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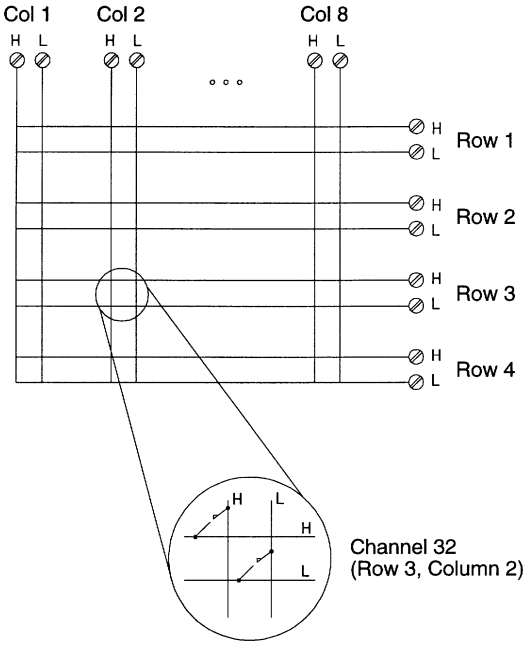
HP 34903A 20-Channel Actuator

(*see page 168 in the User's Guide*)



HP 34904A 4x8 Matrix

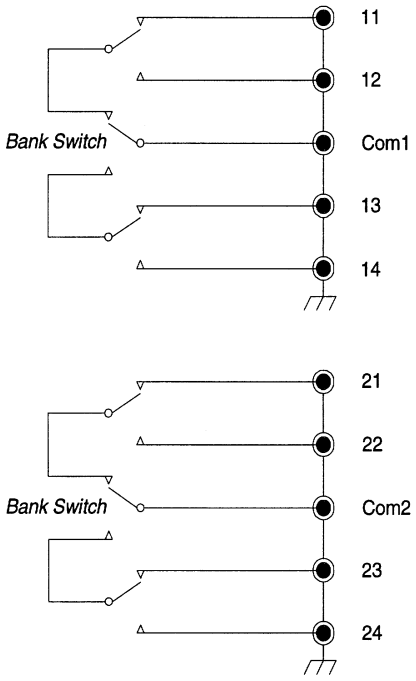
(*see page 170 in the User's Guide*)



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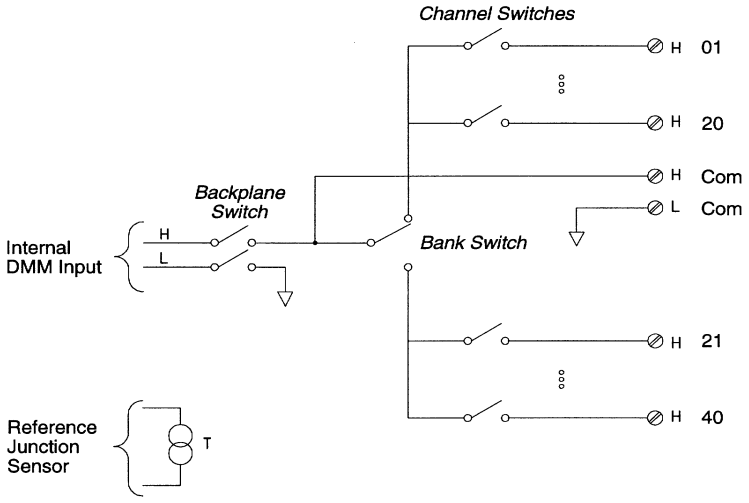
HP 34905A/6A Dual 4-Channel RF Multiplexers

(*see page 172 in the User's Guide*)



HP 34908A 40-Channel Single-Ended Multiplexer

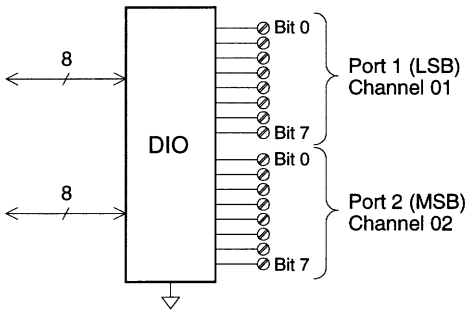
(*see page 174 in the User's Guide*)

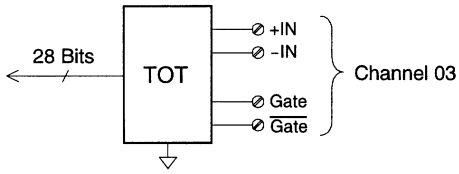


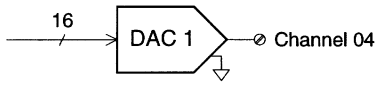
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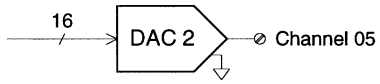
HP 34907A Multifunction Module

(*see page 176 in the User's Guide*)









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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 MΩ (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 **s**11 and **s**21 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

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