

HP 3468A

Quick Reference Card

The 3468A command set consists of several commands. Each command performs a function.

Command codes can also be found on the label on the underside of the 3468A.

Commands

[] means optional parameter
 <> means mandatory parameter

C	Calibrate (see Service Manual)
D<1 or 2[message]>	Display mode 1 = normal 2 =display the message on the LCD
F<1 to 7>	Function (see table on back) F1 = DCV F2 = ACV F3 = 2 Wire Ohms F4 = 4 Wire Ohms F5 = DC Amps F6 = AC Amps F7 Extended Ohms
M<h[]>	Set the lower 6 bits of the SRQ Mask to octal value. 'h' Sets the bits 3-5 and 'l' sets the lower 3 bits bits 0-2 of the mask.
N<3, 4, or 5>	Number of digits of resolution N3 = 3-½, N4 = 4-½, N5 = 5-½

R<1 to 6> RA	Range (see table on back) RA = Autorange
T<1 or 2>	Trigger T1 =Internal trigger T2 =Software single trigger
Z<0 or 1>	Voltmeter Autozero Z0 = Autozero off, Z1 = Autozero on.
B1	Initiate binary status output. When addressed as a Talker immediately after receiving the B1 command the 3468A will output 5 bytes. Also clears the error register.
	Byte 1: Function, Range <u>Bits 7,6,5 (octal): Function</u> 1 = DC Volts 2 = AC Volts 3 = 2-Wire Ohms 4 = 4-Wire Ohms 5 = DC Amps 6 = AC Amps 7 = Extended Ohms <u>Bits 4,3,2 (octal): Range</u> 1 = Range R1 2 = Range R2 3 = Range R3 4 = Range R4 5 = Range R5 6 = Range R6 <u>Bits 1,0 (octal): Display</u> 0 = invalid 1 = 5 ½ digits 2 = 4 ½ digits 3 = 3 ½ digits
	Byte 2: Status <u>Bits 7,6,5 (octal): Function</u> 0 = always: not used <u>Bit 4</u> 1 = calibration RAM enabled <u>Bit 3</u> 0 = line freq. SW=60 Hz 1 = line freq. SW=50Hz <u>Bit 2</u>

	0 = Autozero = OFF 1 = Autozero = ON <u>Bit 1</u> 0 = Autorange=OFF 1 = Autorange=ON <u>Bit 0</u> 0 = single trigger 1 = internal trigger
	Byte 3: SRQ Mask <u>Bit 7</u> 1 = SRQ on power-on or Test/Reset by rear SW 3. <u>Bit 6</u> 0 = not used (always 0) <u>Bit 5</u> 1 = SRQ on calibration failure <u>Bit 4</u> 1 = SRQ on SRQ key <u>Bit 3</u> 1 = SRQ on hardware error <u>Bit 2</u> 1 = SRQ on syntax error <u>Bit 1</u> 1 = SRQ on invalid syntax <u>Bit 0</u> 1 = SRQ on each reading
	Byte 4: Error Info <u>Bit 7,6,5,4</u> 0 = not used (always 0) <u>Bit 3</u> 1 = A/D error <u>Bit 2</u> 1 = ROM error <u>Bit 1</u> 1 = RAM error <u>Bit 0</u> 1 = calibration error
	Byte 5: DAC Value The setting of the internal D/A converter, a value between 0 and 63. Only useful for system debugging.

Function	Code	Range Codes							
		R1	R2	R3	R4	R5	R6	RA	
DC Volts	F1	0.3V	3V	30V	300V	*	*	*	Auto Range
AC Volts	F2	0.3V	3V	30V	300V	*	*	*	
Two Wire Ohms	F3	300Ω	3kΩ	30kΩ	300kΩ	3MΩ	30MΩ	*	
Four Wire Ohms	F4	300Ω	3kΩ	30kΩ	300kΩ	3MΩ	30MΩ	*	
DC Amps	F5	3A	*	*	*	*	*	*	
AC Amps	F6	300 mA	3A	*	*	*	*	*	
Ext. Ohms	F7	10MΩ	*	*	*	*	*	*	

* indicates an invalid combination of function and range.

Examples

Spaces in command strings are optional.

The HP 75 examples use the HPILCMDs LEX file.

Example 1a: Perform a measurement (HP 85):

```
REMOTE 901
OUTPUT 901 ; "F1 RA Z1 N4 T2"
ENTER ; A$
```

- F1 = DC Volts
- RA = auto range, starting from current range
- Z1 = Autozero on
- N4 = 4-½ digits
- T2 = perform single trigger now

Example 1b: Perform a measurement (HP 75):

```
10 SENDIO ":vm", "un1,lad#,ren", "F1RAZ1N4"
20 SENDIO ":vm", "un1,lad#", "T2"
30 A$=ENTIO$(":vm", "un1,tad#,sda")
```

Example 2a Read status (HP 85):

```
10 REMOTE 901
20 OUTPUT 901 ; "B1"
30 ENTER USING "5(1B)" ; B1,B2,B3,B4,B5
```

Example 2b: Read status (HP 75)

```
10 SENDIO ":vm", "un1,lad#,ren", "B1"
20 A$=ENTIO$(":vm", "tad#,sda")
```

Example 3a: Use front panel SRQ key (HP 85)

```
10 REMOTE 901
20 OUTPUT 901 ; "M20"
30 ON ONTR 9 GOSUB 80
40 ENABLE INTR 9
50 GOTO 50 ! do something else
60 END
70 ! --- interrupt service routine ---
80 P=SPOLL(901)
90 IF BIT(P,4) THEN DISP "SRQ Pressed."
100 RETURN
```

Example 3b: Use front panel SRQ key (HP 75)

```
10 SENDIO ":vm", "un1,lad#,ren", "M20"
20 FOR I=1 TO 32768
30 A$=ENTIO$(":vm", "tad#,sst")
40 A=NUM(A$)
50 IF A#81 THEN 80
60 DISP "SRQ pressed: ";A
70 WAIT 0.5 @ DISP
80 NEXT I
100 END
(HP 75 with HPILCMDs does not handle interrupts)
```

HP-IL Message Response

CLEAR (SDC, DCL)
if listener, reset to power on state

LOCAL (GTL)
if listener, enable front panel controls

LOCAL LOCKOUT (LLO)
if listener, disable front panel until a LOCAL command is received

REMOTE (REN)
if listener, disable front panel controls

SPOLL (SST)
if talker: send status byte

TRIGGER (GET)
if listener, this triggers a measurement

DEVID\$ (SDI)
if talker: send "HP3468A"

DEVAID\$ (SAI)
if talker: send 0

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