SPDT

Specifications

HP Model	8761A, 8761B	8762A, 8762B	8762C	8762F	8765A, 8765B, 8765C	8765D	8765F
Features	Unterminated Break-before-make Selectable connector configuration	Terminated Break-before-make Current interrupts Position indication capability[1]			Unterminated Break-before-make		
Impedance	50 Ω	50 Ω	50 Ω	75 Ω	50 Ω	50 Ω	75 Ω
Frequency Range	dc to 18 GHz	**A:** dc to 4 GHz **B:** dc to 18 GHz	dc to 26.5 GHz	dc to 4 GHz	**A:** dc to 4 GHz **B:** dc to 20 GHz **C:** dc to 26.5 GHz	dc to 40 GHz	dc to 4 GHz
Insertion Loss (dB)	<0.5 to 12.4 GHz <0.8 to 18 GHz	**A:** <0.20 to 2 GHz <0.25 to 4 GHz **B:** <0.25 to 2 GHz <0.50 to 18 GHz	<0.25 to 2 GHz <0.50 to 18 GHz <1.25 to 26.5 GHz	<0.4	**A & B:** **$0.2 + 0.025f^2$** max **C:** **$0.25 + 0.027f^2$** max 0.2 @ 4 GHz typ. 0.5 @ 20 GHz typ. 0.7 @ 26.5 GHz typ.	**$0.2 + 0.023f^2$** max 0.2 typ. @ 4 GHz 0.5 typ. @ 20 GHz 0.7 typ. @ 26.5 GHz **$0.75 + 0.023\Delta f^3$** max $(26.5 \le f \le 40)$ 1.0 typ. @ 40 GHz	<0.18 to 1 GHz <0.24 to 2 GHz <0.4 to 4 GHz
SWR (Through Line)	See Connector Code Option data on page 93	**A:** <1.2 to 4 GHz **B:** <1.1 to 2 GHz <1.2 to 12.4 GHz <1.3 to 18 GHz	<1.15 to 2 GHz <1.25 to 12.4 GHz <1.40 to 18 GHz <1.8 to 26.5 GHz	<1.30	**A & B:** <1.2 to 4 GHz <1.35 to 12.4 GHz <1.45 to 18 GHz <1.7 to 20 GHz **C:** <1.25 to 4 GHz <1.45 to 18 GHz <1.7 to 26.5 GHz	<1.25 to 4 GHz <1.45 to 18 GHz <1.7 to 40 GHz	<1.15 to 1 GHz <1.20 to 4 GHz
SWR (Into Termination) Option 7:	Add 0.05 to SWR (Through Line) of connector selected	**A:** <1.1 to 2 GHz <1.2 to 4 GHz **B:** <1.15 to 2 GHz <1.20 to 12.4 GHz <1.30 to 18 GHz	<1.15 to 2 GHz <1.25 to 12.4 GHz <1.40 to 18 GHz <1.8 to 26.5 GHz	<1.30	N/A		
Isolation (dB)	>50 to 12.4 GHz >45 to 18 GHz	>100 to 4 GHz >90 to 18 GHz	>90 to 18 GHz >50 to 26.5 GHz	>100	**$110 - 2.25f^2$** min 120 typ. @ 4 GHz 90 typ. @ 20 GHz 60 typ. @ 26.5 GHz	**$110 - 2.25f^2$** min 120 typ. @ 4 GHz 90 typ. @ 20 GHz 60 typ. @ 26.5 GHz 55 typ. @ 40 GHz >50 (26.5 to 40 GHz)	>100 to 1 GHz >90 to 4 GHz

Indicates QuickShip availability. HP 8762A,B,C standard models only. HP 8765A,B,C with Option 024 only. Contact HP Direct or your local HP sales representative to confirm QuickShip.

[1] Provides position sensing when used with HP 87130A/70611A or customer supplied external circuitry.
[2] f is frequency in GHz.
[3] $\Delta f = f\ (GHz) - 26.5$.

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Specifications (continued)

HP Model	8761A,B	8762A,B	8762C	8762F	8765A,B,C	8765D	8765F
Input Power							
Average	10 W	1 W			2 W		
Peak [1]	5 kW [2]	100 W (10 µs max)			100 W (10 µs max)		
Switching Time (max)	50 ms	30 ms			15 ms		
Repeatability (max) [3]	0.03 dB	0.03 dB	0.03 dB to 18 GHz 0.5 dB to 26.5 GHz	0.03 dB	0.03 dB		
Life (min)	1,000,000 cycles	1,000,000 cycles			5,000,000 cycles		
RF Connectors	See connector options in ordering example	SMA (f)	3.5 mm (f)	Mini SMB (m) [4] (75 Ω)	A & B: SMA (f) C: 3.5 mm (f)	2.4 mm (f) See options	Mini SMB (m) [4] (75 Ω)
DC Connectors	Solder terminals	Solder terminals			Ribbon cable		

[1] Not to exceed average power (non-switching).
[2] Option 7: 2 W average, 100 W peak (10 µs max).
[3] Measured at 25 °C.
[4] 75 Ω Mini SMB does not mate with 75 Ω SMB. See data sheet for more information.

Options

HP Model	8761A	8761B	8762A,B,C,F			8765A,B,C,D,F			
Supply Voltage, Current and Impedance [5]			**Std. / Opt. T24**	**Opt. 011**	**Opt. 015/Opt. T15**	**Opt. 005**	**Opt. 010**	**Opt. 015**	**Opt. 024**
Supply Voltage Range	12 to 15 Vdc	24 to 30 Vdc	20 to 32 Vdc	4.5 to 7 Vdc	12 to 20 Vdc	4.5 to 7 Vdc	7 to 12 Vdc	12 to 20 Vdc	20 to 32 Vdc
Supply Voltage (nom)	12 Vdc	24 Vdc	24 Vdc	5 Vdc	15 Vdc	5 Vdc	10 Vdc	15 Vdc	24 Vdc
Current (nom)	80 mA	65 mA	120 mA	400 mA	182 mA	385 mA	300 mA	200 mA	120 mA
Impedance (nom)	150 Ω, 90 mH	400 Ω, 300 mH	200 Ω, 127 mH	13 Ω, 8 mH	82 Ω, 57 mH	13 Ω, 8 mH	33 Ω, 25 mH	75 Ω, 55 mH	200 Ω, 135 mH
Control Logic	N/A		**Opt. T15:** TTL/5V CMOS compatible logic with 15 Vdc supply [6] **Opt. T24:** TTL/5V CMOS compatible logic with 24 Vdc supply [6]			N/A			
RF Connector	See ordering information		N/A			**D (Opt. 292):** 2.92 mm (f)			
DC Connectors	N/A					**Opt. 100:** Solder terminals **Opt. 108:** 8-inch ribbon cable extension **Opt. 116:** 16-inch ribbon cable extension			
Calibration Documentation	See ordering information								

[5] Must specify option for HP 8765 series products.
[6] Not available with HP 8762F.

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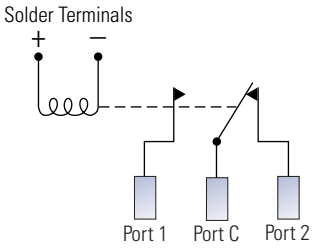
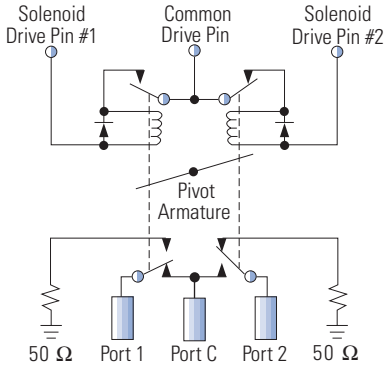
Schematics

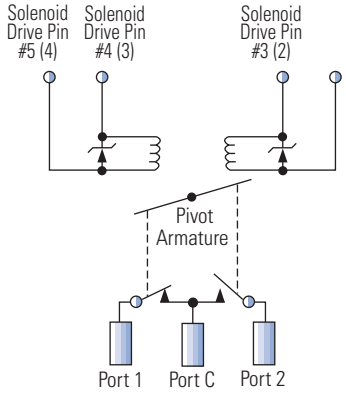
HP 8761 Series



HP 8762 Series



HP 8765 Series[1]



[1] Opt. 100 Solder Terminal numbers in parenthesis

Signal Path Control Data

The tables shown here can be used to better understand how to select a signal path for each switch. For example, the HP 8762 switch has two drive control alternatives i.e. a standard drive scheme and a TTL/5V CMOS drive scheme. For TTL/5V CMOS drive, it is required that the supply voltage be applied to pin C and that pin 1 is grounded. To close the path from port 1 to port C, apply a TTL "low" to pin 2. Additional information related to signal path control can be found in the product data sheet.

HP 8761 Series

RF Path	DC Drive Control Voltage	
	Pin "+"	Pin "–"
1 to C	Negative	Positive
2 to C	Positive	Negative

HP 8762 Series

RF Path	Drive Control Alternatives			
	Standard Drive Voltage[2]		TTL/5V CMOS Drive Voltage[2,3]	
	Pin 1	Pin 2	Pin 1	Pin 2
1 to C	Ground	Open	Ground	"High"
2 to C	Open	Ground	Ground	"Low"

[2] Drive pin C is supply voltage.
[3] Not available on HP 8762F.

HP 8765 Series

RF Path	Drive Control Alternatives[4]								
		Common Positive Drive Voltage			Common Negative Drive Voltage			Polarity Reversal Drive Voltage		
	Std. (Opt. 100)	Pin 1 (1)	Pin 3/4 (2/3)	Pin 5 (4)	Pin 3 (2)	Pin 1/5 (1/4)	Pin 4 (3)	Pin 1 (1)	Pin 3/4 (2/3)	Pin 5 (4)
1 to C		Open	Supply voltage	Ground	Open	Ground	Supply voltage	Ground	Connected	Supply voltage
2 to C		Ground	Supply voltage	Open	Supply voltage	Ground	Open	Supply voltage	Connected	Ground

[4] See data sheet for additional information on these drive control alternatives.

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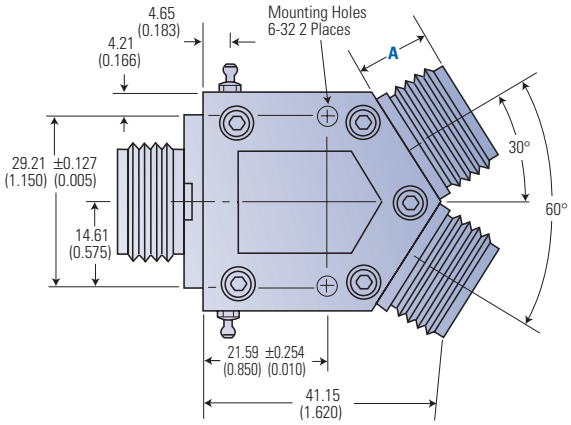
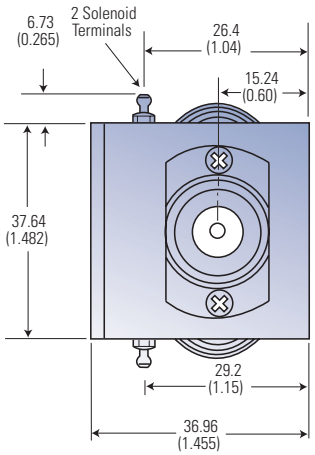
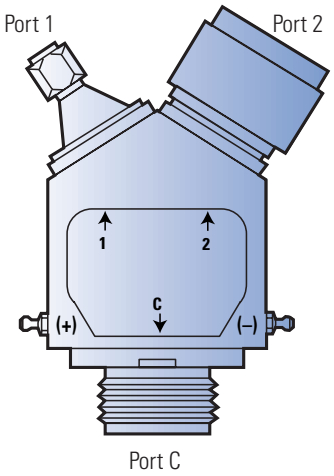
HP 8761 Series







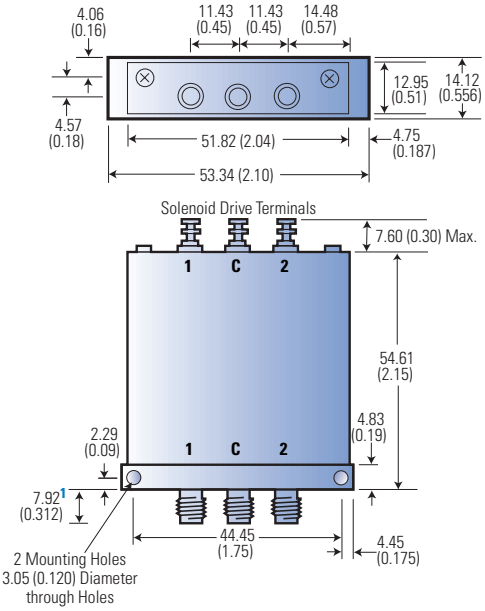
See ordering example for HP 8761 options on P.95

HP 8761 Series Connector Dimensions

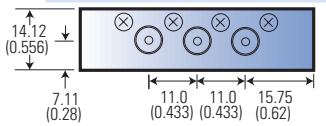
Connector Code Option	Connector Type	Dimension "A" mm	(inch)	SWR (Through Line)
0	Type-N (f)	13.72	(0.540)	<1.25 to 18 GHz
1	Type-N (m)	19.79	(0.775)	<1.25 to 18 GHz
2	APC-7 threaded sleeve	9.27	(0.365)	<1.2 to 18 GHz
3	APC-7 coupling nut	11.94	(0.470)	<1.2 to 18 GHz
4	UT-250 coax	9.27	(0.365)	<1.25 to 18 GHz
5	SMA (f)	16.13	(0.635)	<1.35 to 18 GHz
6	SMA (m)	17.15	(0.675)	<1.35 to 18 GHz
7	50 Ω termination	30.5	(1.20)	

Dimensions are in millimeters (inches) nominal, unless otherwise specified.

HP 8762 Series



RF Connectors:
A,B: SMA (f) C: 3.5 mm (f) F: 75 Ω Mini-SMB



[1] 10.0 (0.393) for F version