

DC - 67GHz

RF COAXIAL SWITCHES

High performance, high reliability at competitive prices



MAGVENTION



ABOUT US

Founded in 2008, Magvention provides products and engineering services for the electrical communication industry.

Magvention is a world leader in coaxial RF switches and micro-magnetic relays. Its main business is in research, development, production, and sales of new generations of RF coaxial switches and micro-magnetic relays. Its technical expertise includes product design and manufacturing in microwave components, relays, microelectronics, and MEMS. Its products lead in performance, size, power consumption, and reliability. Its coaxial switch products provide high performance and high reliability at competitive prices.

The company is headquartered in Suzhou (SIP), China.



V20260101

Numbering Scheme

Example: MC□□-□□□□□□-□□

1. Product Type:
C1: Coaxial, 1P2T (SPDT)
C2: Coaxial, 2P3T
C3: Coaxial, 1P6T
.....
2. Special Options
Blank: Standard
T: With 50Ω termination
h: High performance
e: Extended temperature
p: High power
3-18: Number of throws in multi-throw switches
3. Connector Type:
K: 2.92mm
S: SMA
N: N
U: 2.4mm
V: 1.85mm
C: SC
T: TNC
R: 4.3-10
D: 7-16
P: PCB-mount
4. Frequency Range:
12: DC to 12.4GHz
18: DC to 18GHz
26: DC to 26.5GHz
40: DC to 40GHz
50: DC to 50GHz
67: DC to 67GHz

8. Other information
Blank: No special options
K: Indicators
D: "D" connector
L: Low PIM
p: Positive Common
M: Moisture seal
n: No mounting bracket for MC5/MC7
s: short, low profile option (MC1,3)
-a: auto-reset
-r: reset ALL
7. Actuator Type:
0: With suppression diodes.
No TTL/self-cutoff
1: TTL
2: Self cutoff only (for latching only)
3: Self cutoff and TTL (for latching only)
4: No suppression diodes.
No TTL/self-cutoff
5. BCD
6. USB
6. Rated Coil Voltage
12, 18, 24, 28 V
5. Relay Function
N: Normally Open
L: Latching
F: Failsafe

Code	Type
MC1	SPDT (S,K,U,V,P)
MC2	SPDT (S,K,U,V) T 2P3T (S,K,U,V)
MC3	1P6T (S,K,U,V)
MC4	SPDT (N,C,T,R,D)
MC5	DPDT (S,K,U,V)

Code	Type
MC6	1P6T (N,C,T,R)
MC7	DPDT (N)
MC8	1P8T(S,K) T
MC9	1P8T (S,K)
MC0	1P10T (S,K) T
MCJ	1P10T (S,K)

Code	Type
MCF	1P6T(S,K,U,V) T
MCL	1P12T (S)
MCH	1P8T (N,C)
MCG	1P12T (N)
MCM	1P12T (S) T
MCR	1P18T (S)

Code	Type
MCD	SPDT (N-Y)
MCV	SPDT (N-V)
MCA	1P4T (N,C,D)
MCK	1P4T (S)
MCP	1P6T (S,P,K) mini
MCQ	1P3T (S)

Ordering

Contact Magvention directly for pricing and delivery information.

MAGVENTION
Suite 5A-3, No. 8 Zhanye Rd.
Suzhou (SIP), CHINA
Zip: 215121

Phone: +86 (0512)-69567128
Fax: +86 (0512)-69567125
Email: sales@magvention.com
Web: www.magvention.com

Warranty

Magvention RF switches are warranted against defects in material or workmanship for one full year (12 months) from date of shipment. Magvention's obligation is limited to repair or replacement of defective parts. We assume no liability for defects resulting from improper use, operation beyond ratings or unauthorized repairs. Cosmetic conditions are not covered by this warranty. Magvention is not responsible for consequential damages. Warranty returns require advance authorization. No other warranties are expressed or implied.

For other options not listed here, please contact Magvention sales.

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MC1h-K45-U

SPDT, K(2.92mm), DC-45GHz

The MC1h-K45 Series features 2.92mm connectors and an operation frequency range of DC to 45GHz. This series can be either failsafe or latching type. Available options include TTL, self-cutoff or pulse latching, indicator, and coil suppression, etc. This model has high repeatability (Insertion loss 0.03dB).

FAILSAFE/LATCHING

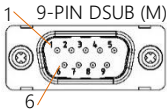
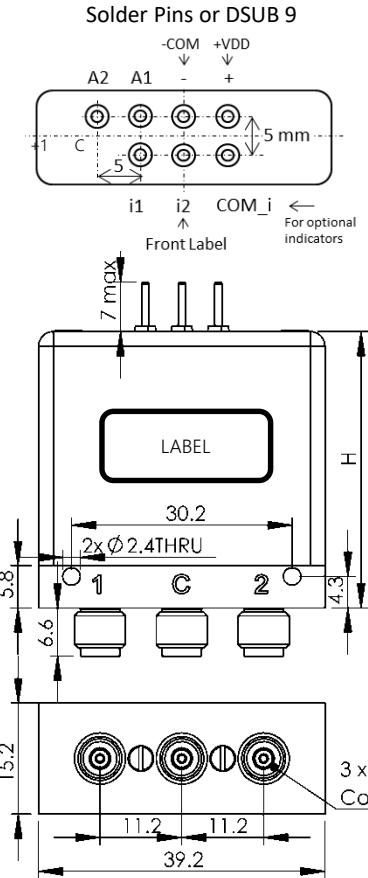
High performance

Insertion loss repeatability: 0.03dB



Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	70g

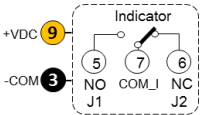
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	200	165	104	96
	Latching	220	124	106	123



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

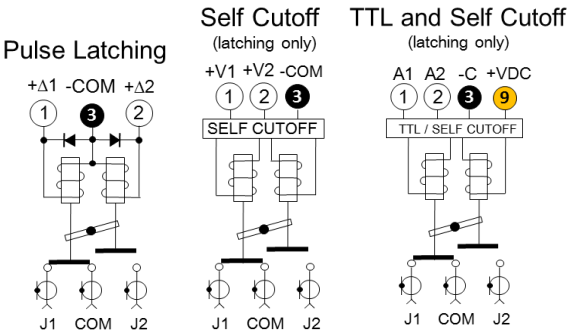
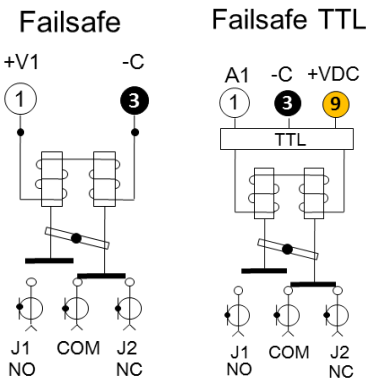
Note: +VDC and -C must be connected to operate.



H	Solder Pin	DSUB
Standard	37.8	40.8
TTL	37.8	50.8
Indicator	50.8	60.8

Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	70
6-12	1.30	0.25	70
12-18	1.40	0.40	70
18-26.5	1.50	0.50	60
26.5-32	1.70	0.70	60
32-45	1.80	0.80	60

PINOUT	
Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	A2/V2 (J2-COM)
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC1-U50

SPDT, U(2.4mm), DC-50GHz

The MC1-U50 Series features 2.4mm connectors and an operation frequency range of DC to 50GHz. This series can be either failsafe or latching type. Available options include TTL, self-cutoff or pulse latching, indicator, and coil suppression, etc. This model has high repeatability (Insertion loss 0.03dB).

FAILSAFE/LATCHING

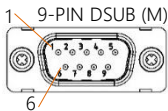
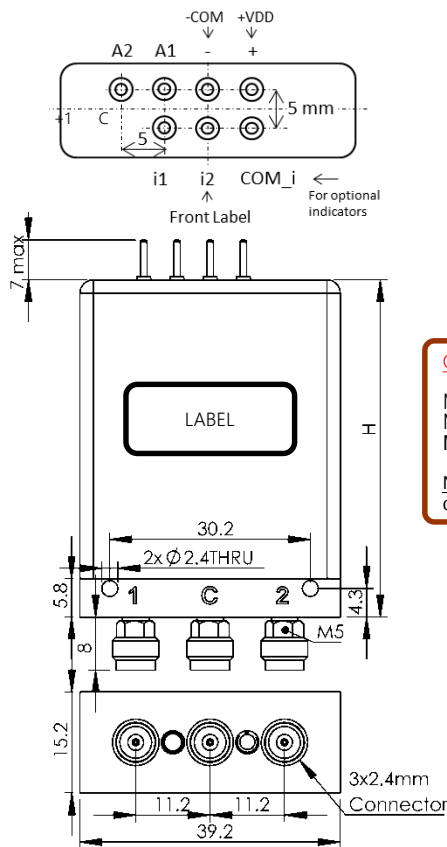


Specifications

Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	70g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	200	165	104	96
	Latching	220	124	106	123

Solder Pins or DSUB 9

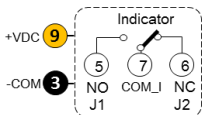


Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	A2/V2 (J2-COM)
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM+ (IND.)
8	UNUSED
9	+VDC/+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

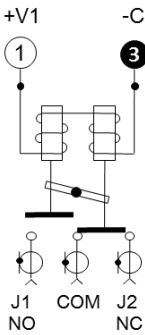


H	Solder Pin	DSUB
Standard	37.8	40.8
TTL	37.8	50.8
Indicator	50.8	60.8

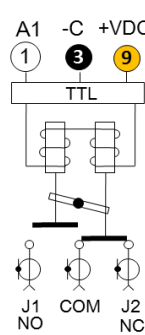
Standard

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	70
6-12	1.30	0.25	70
12-18	1.40	0.40	70
18-26.5	1.70	0.70	70
26.5-32	1.90	0.80	60
32-50	2.0	1.00	60

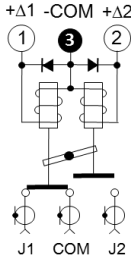
Failsafe



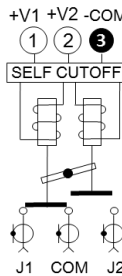
Failsafe TTL



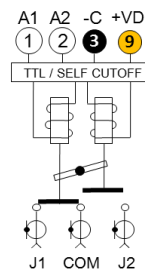
Pulse Latching



Self Cutoff (latching only)



TTL and Self Cutoff (latching only)



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

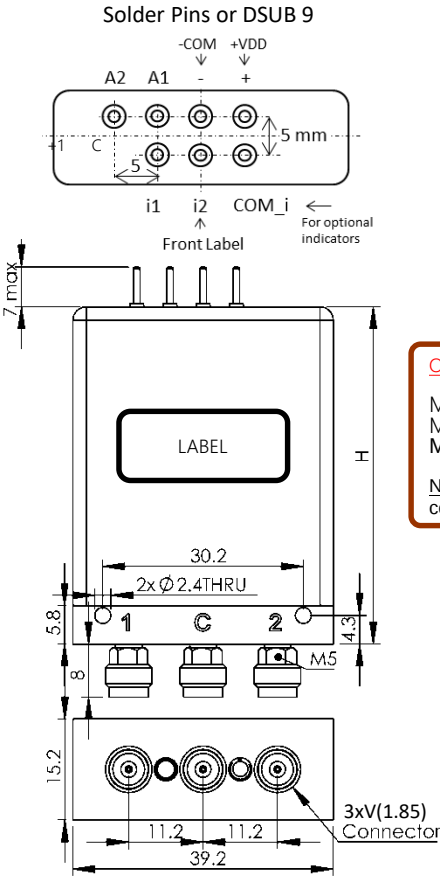
The MC1-V67 Series features 1.8mm connectors and an operation frequency range of DC to 67GHz. This series can be either failsafe or latching type. Available options include TTL, self-cutoff or pulse latching, indicator, and coil suppression, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	70g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	200	165	104	96
	Latching	220	124	106	123

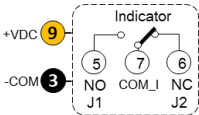


Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-18	1.40	0.40	60
18-26.5	1.70	0.70	55
26.5-32	1.90	0.80	50
32-50	2.00	1.00	50
50-67	2.50	1.50	45



Optional Indicator Specifications
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

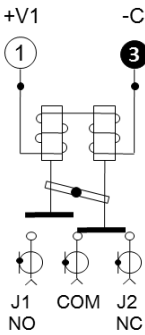
Note: +VDC and -C must be connected to operate.



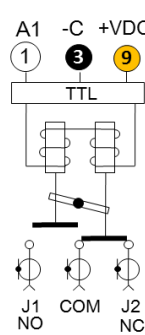
H	Solder Pin	DSUB
Standard	37.8	40.8
TTL	37.8	50.8
Indicator	50.8	60.8

PINOUT	
Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	A2/V2 (J2-COM)
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI

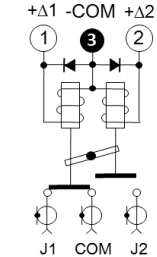
Failsafe



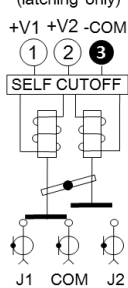
Failsafe TTL



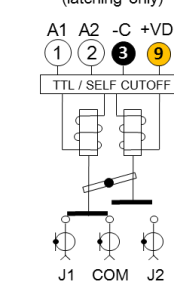
Pulse Latching



Self Cutoff



TTL and Self Cutoff



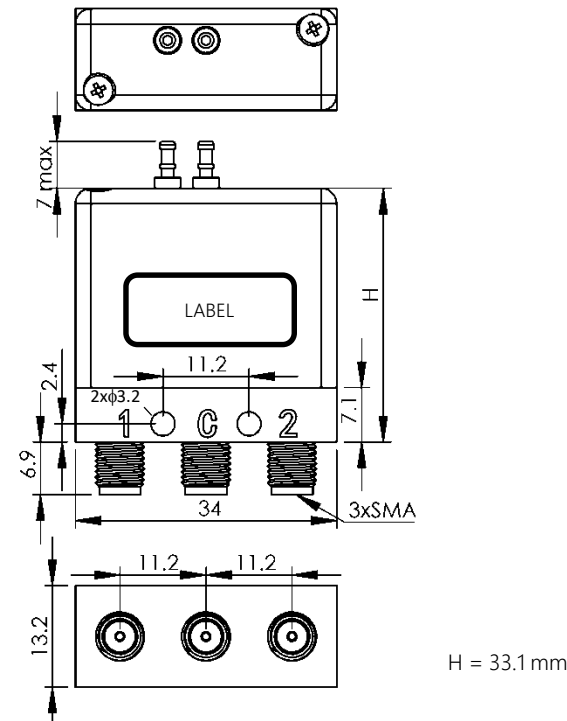
Mechanical drawings (unit: mm, tolerance +/-0.5mm).

The MC1 (-s) Series features SMA connectors and an operation frequency range of DC to 26.5GHz. This model option has a small profile. The series can be either failsafe or latching type. Available options include TTL, self-cutoff or pulse latching, indicator, and coil suppression, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3,000,000 (Standard) 5,000,000 ("h" option)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	50g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	153	165	73	86
	Latching	220	110	106	123

• Contact company if reduced coil current is required. Other coil voltage options are available upon request.

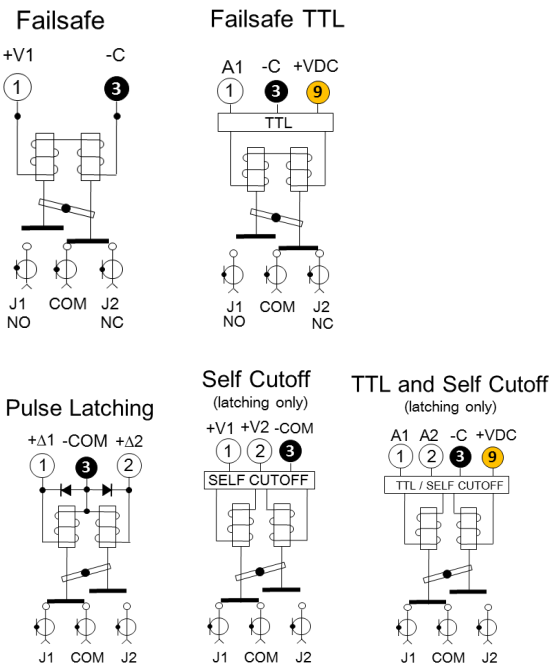


Mechanical drawings (unit: mm, tolerance +/-0.5mm).



Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	70
6-12	1.30	0.25	70
12-18	1.40	0.40	60
18-26.5	1.70	0.70	55

Higher frequency ranges are also available upon request..



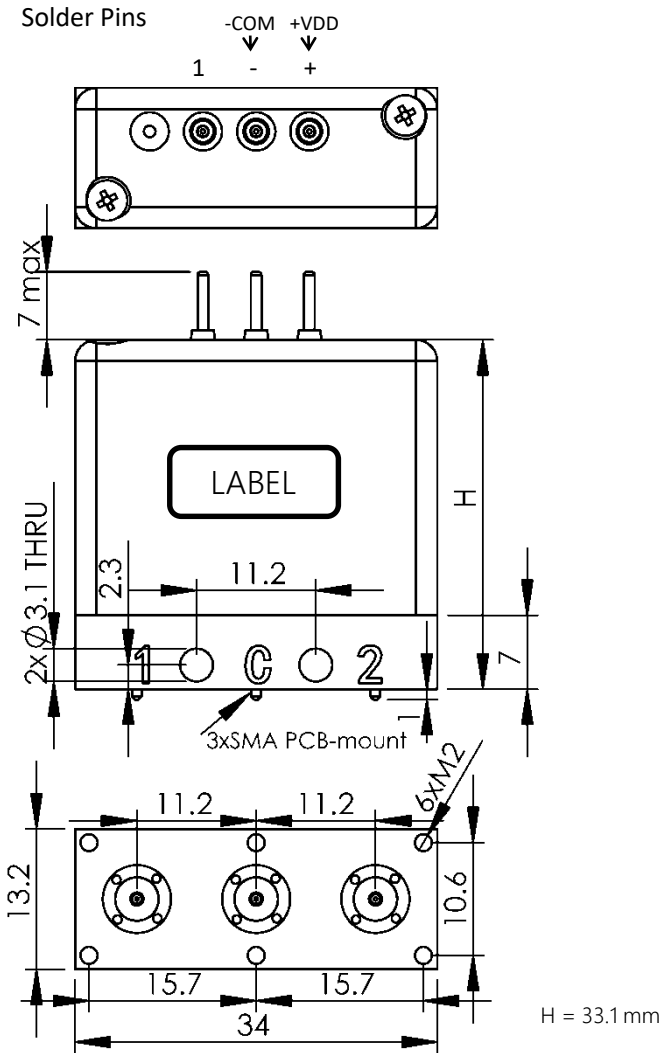
The **MC1-S18 (-s)** Series features SMA connectors and an operation frequency range of DC to 18GHz. This series can be either failsafe or latching type. Available options include TTL, self-cutoff or pulse latching, indicator, and coil suppression, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	50g



Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	70
6-12	1.40	0.40	70
12-18	1.50	0.50	60

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	153	165	73	86
	Latching	220	110	106	123



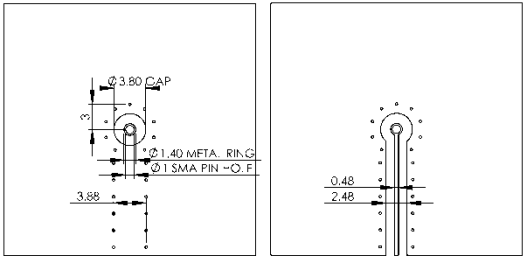
Mechanical drawings (unit: mm, tolerance +/-0.5mm).

Recommended PCB layout.

Material: Rogers 4350, 40mil (1mm),

3 layers:
Top and bottom: Ground plans;
Middle: Signal.

Open ϕ =1mm hole for SMA pins.



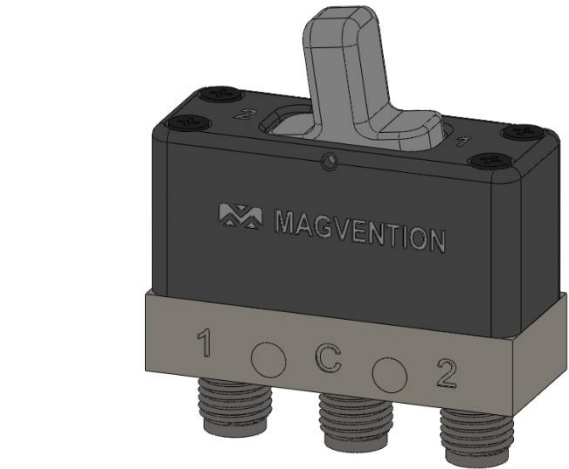
Top and bottom.

Middle signal layer.

The MC1 (-s) Series features SMA connectors and an operation frequency range of DC to 26.5GHz. This model option has a small profile.

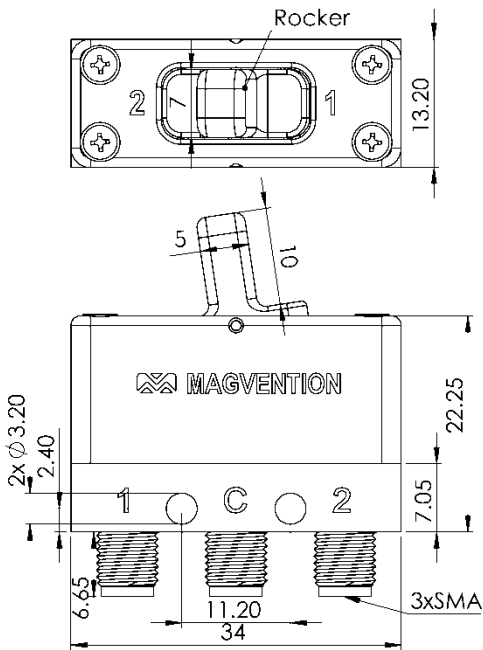
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	Manual operation
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	40g

Manual Operation	Port 1 - C	Port 2 - C
Push Left Side	Open	Closed
Push Right Side	Closed	Open

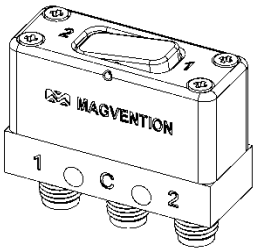


Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	70
6-12	1.30	0.25	70
12-18	1.40	0.40	60
18-26.5	1.70	0.70	55

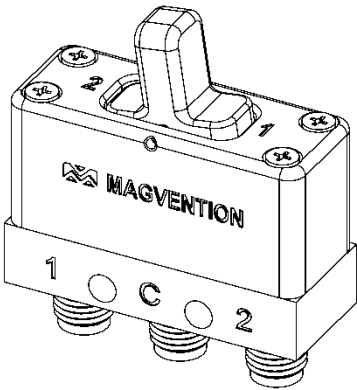
Higher frequency ranges are also available upon request..



Mechanical drawings (unit: mm, tolerance +/-0.5mm).



A low-profile version is also available upon request.

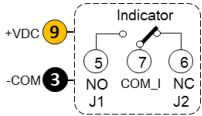
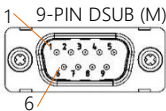
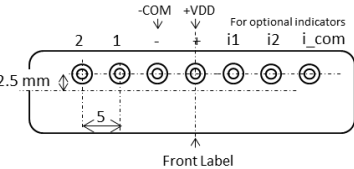


The MC2-S Series features SMA connectors with or without internal termination and an operation frequency range of DC to 26.5 GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

Specifications

Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	88g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	400	330	207	193
	Latching	440	248	211	246



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

Solder Pins or DSUB 9

PINOUT	
Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM. I (IND.)
8	UNUSED
9	+VDC/+VDCI

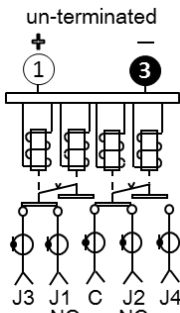


Fig. 1

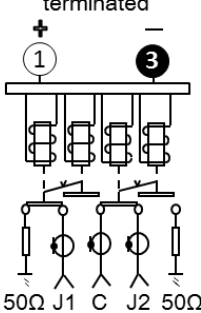


Fig. 2

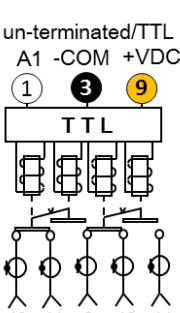


Fig. 3

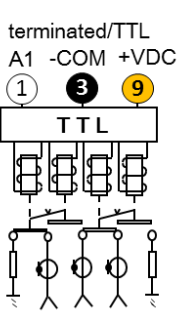


Fig. 4

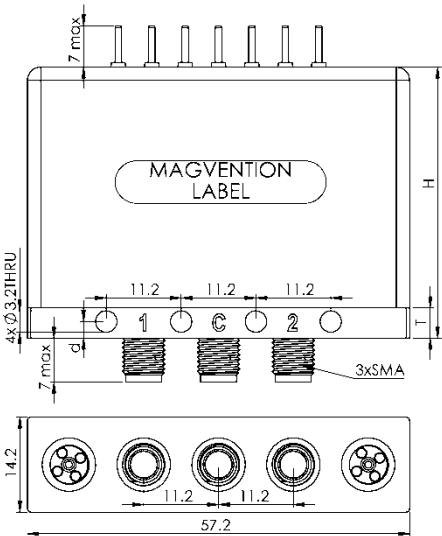
T = 4.55 (SMA)
d = 2.5

H (max)	Solder Pin	DSUB
Standard	40.6	44.6
TTL	40.6	52.6
Indicator	40.6	52.6



Standard

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	70
6-12	1.30	0.25	70
12-18	1.40	0.40	60
18-26.5	1.80	0.80	55



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

The MC2T-U50 Series features U (2.4mm) connectors with or without internal termination and an operation frequency range of DC to 50 GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

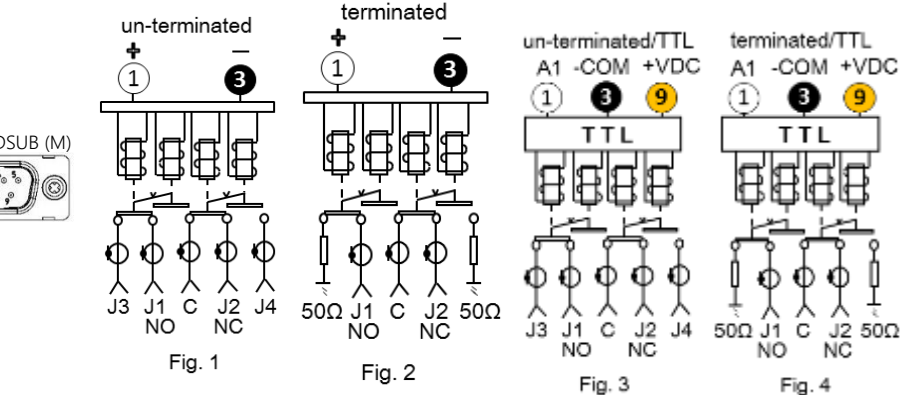
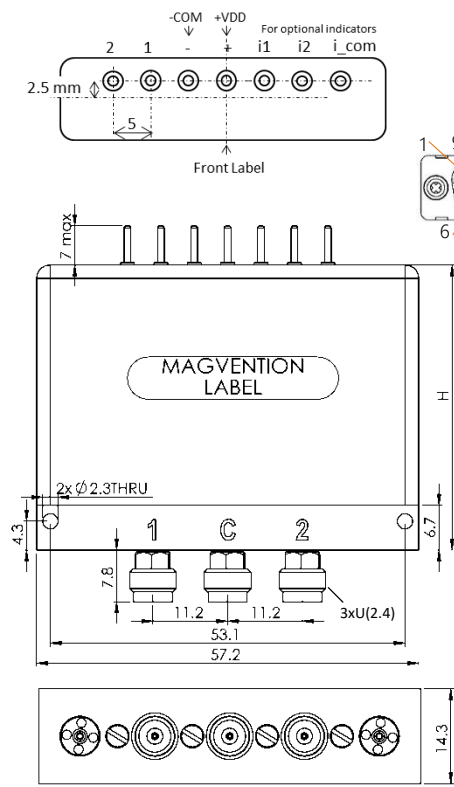
FALISAFE/LATCHING

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	88g



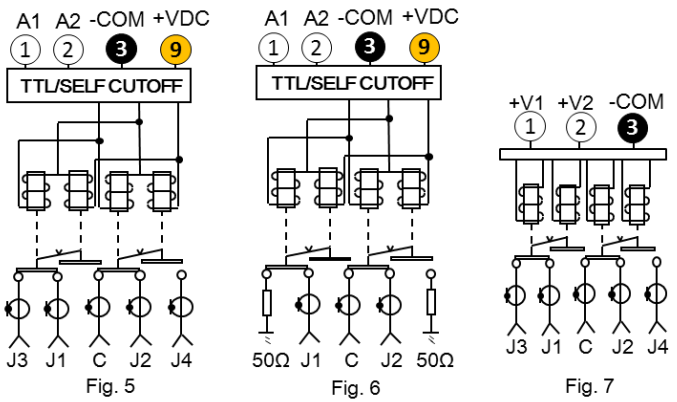
Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-18	1.50	0.50	60
18-32	1.90	0.80	50
32-40	2.00	1.00	50
40-50	2.20	1.30	50

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	400	330	207	193
	Latching	440	248	211	246



PINOUT	
Pin No.	PINOUT
1	A1/V1 (I1-COM)
2	A2/V2 (I2-COM)
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM. I (IND.)
8	UNUSED
9	+VDC/+VDCI

H (max)	Solder Pin	DSUB
Standard	42.7	46.7
TTL	42.7	54.7
Indicator	42.7	54.7



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

The MC2T-V67 Series features V (1.85mm) connectors with or without internal termination and an operation frequency range of DC to 67 GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

Specifications

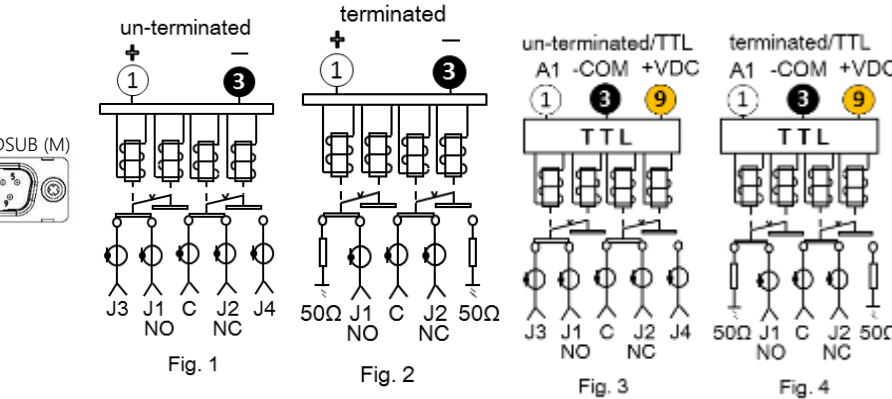
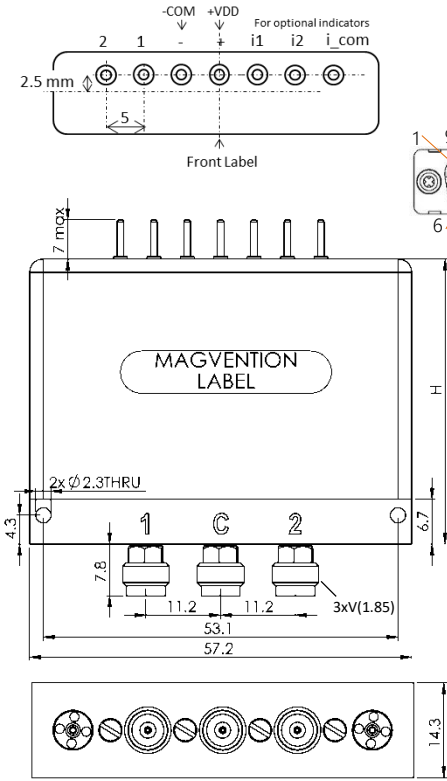
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	88g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	400	330	207	193
	Latching	440	248	211	246



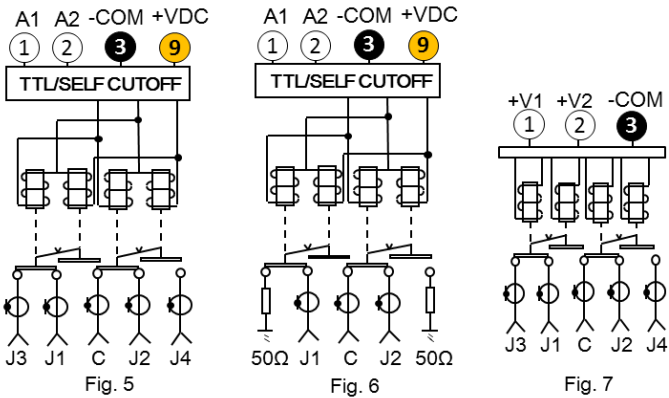
Standard

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-18	1.40	0.40	60
18-26.5	1.70	0.70	55
26.5-32	1.90	0.80	50
32-40	2.00	1.00	50
40-67	2.50	1.50	45



PINOUT	
Pin No.	PINOUT
1	A1/V1 (I1-COM)
2	A2/V2 (I2-COM)
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM+ (IND.)
8	UNUSED
9	+VDC/+VDCI

H (max)	Solder Pin	DSUB
Standard	42.7	46.7
TTL	42.7	54.7
Indicator	42.7	54.7



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC3-S22

1P6T, SMA, DC-22GHz

MC3n: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

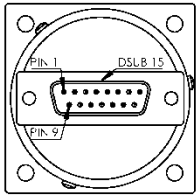
The MC3-S22 Series features SMA connectors and an operation frequency range of DC to 22 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

Specifications					
Contact Material	Plated Au				
Switching Sequence	Break before Make				
Switching Time (max)	15msec				
Impedance	50Ω				
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)				
Relative Humidity	5 to 85%				
Operation Life (cycles)	2,000,000 (Standard)				
Vibration (operating)	10G RMS, 20-2000Hz				
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec				
Weight (approx.)	190g				
Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140

Other options are available upon request.



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60
18-22	1.5	0.6	60



Optional Indicator Specifications
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

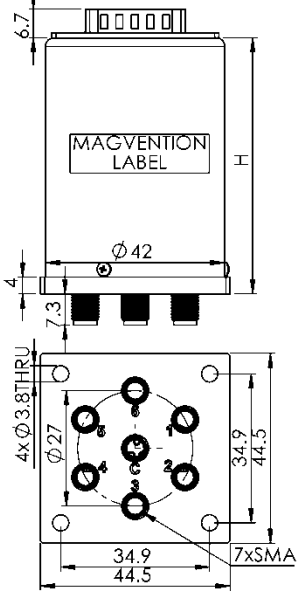
Note: "Blank" represents the unused RF and corresponding control ports.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDC

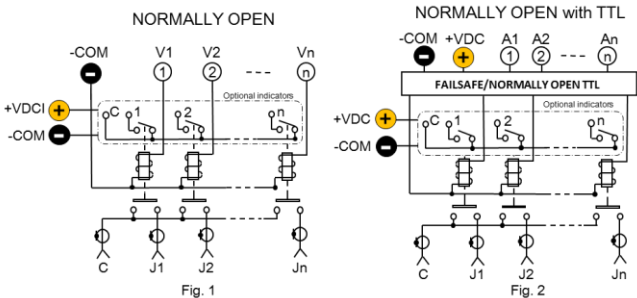
PIN 8-14: For optional INDICAOTRS only.

Pin 1-6: The corresponding control signal inputs.
PIN 8-15: For optional INDICAOTRS only.



STANDARD Model		
H	Solder Pin	DSUB
Standard	54	60
TTL	54	70
Indicator	58	70

"-s" Short Model		
H	Solder Pin	DSUB
Standard	44	50
TTL	44	60
Indicator	48	60



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC3-S26

1P6T, SMA, DC-26.5GHz

MC3n: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

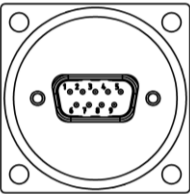
The MC3-S26 Series features SMA connectors and an operation frequency range of DC to 26.5 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

Specifications					
Contact Material	Plated Au				
Switching Sequence	Break before Make				
Switching Time (max)	15msec				
Impedance	50Ω				
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)				
Relative Humidity	5 to 85%				
Operation Life (cycles)	2,000,000 (Standard)				
Vibration (operating)	10G RMS, 20-2000Hz				
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec				
Weight (approx.)	190g				
Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60
18-26.5	1.5	0.5	60

Other options are available upon request.



Top DSUB arrangements.

DSUB 9M



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

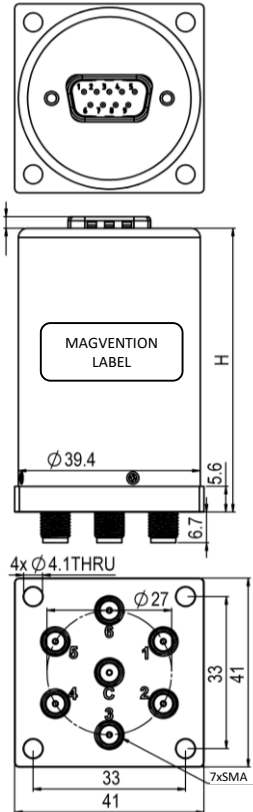
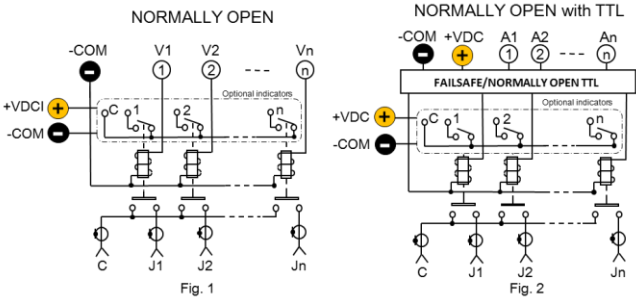
Note: "Blank" represents the unused RF and corresponding control ports.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDC

PIN 8-14: For optional INDICAOTRS only.

PIN 1-6: The corresponding control signal inputs.
PIN 8-15: For optional INDICAOTRS only.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC3-K40

1P6T, K, DC-40GHz

MC3n: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

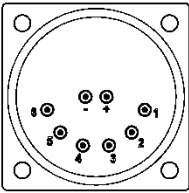
The MC3-K40 Series features K connectors and an operation frequency range of DC to 40 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

Specifications

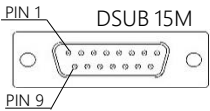
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	190g

Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140

Other options are available upon request.



Top DSUB arrangements.



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

1PnT PORT CONFIGURATIONS

1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

STANDARD Model

H	Solder Pin	DSUB
Standard	55.6	61.6
TTL	55.6	71.6
Indicator	59.6	71.6

"-s" Short Model

H	Solder Pin	DSUB
Standard	45.6	51.6
TTL	45.6	61.6
Indicator	49.6	61.6



Standard

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60
18-26.5	1.9	0.8	50
26.5-40	2	1	50

NORMALLY OPEN 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDC

PIN 8-14: For optional INDICAOTRS only.

PIN 1-6: The corresponding control signal inputs.
PIN 8-15: For optional INDICAOTRS only.

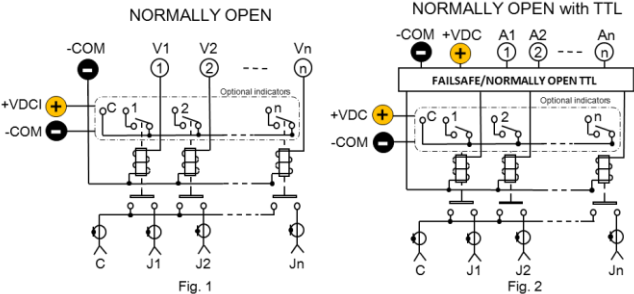


Fig. 1

Fig. 2

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC3n-UxxNxx-s: n=3-6 (e.g., n=6 for 1P6T), short (low profile version)

Normally Open

The MC3-U50 Series features 2.4mm connectors and an operation frequency range of DC to 50 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

Specifications

Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	170g

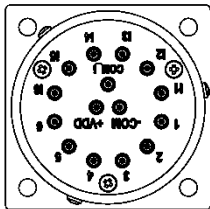
Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	230	150	120	110



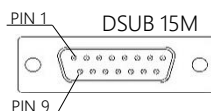
Standard

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	70
12-18	1.5	0.5	60
18-26.5	1.9	0.8	55
26.5-40	2.0	1.0	50
40-50	2.1	1.2	50

Top Solder Pin arrangements.



Top DSUB arrangements.



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

1PnT PORT CONFIGURATIONS

1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

"-s" Short Model		
H	Solder Pin	DSUB
Standard	45.6	51.6
TTL	45.6	61.6
Indicator	49.6	61.6

NORMALLY OPEN 15-PIN D-SUB PINOUT

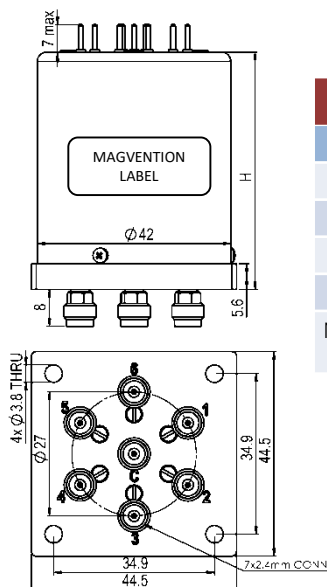
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT

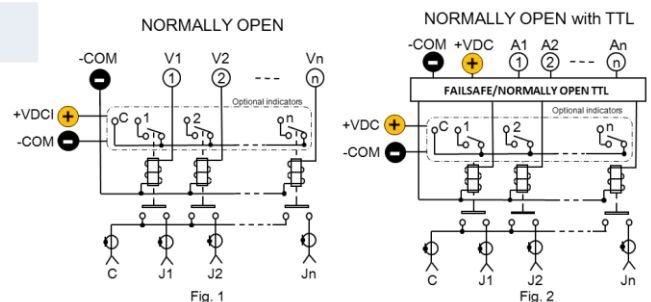
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDC

PIN 8-14: For optional INDICAOTRS only.

PIN 1-6: The corresponding control signal inputs.
PIN 8-15: For optional INDICAOTRS only.



Mechanical drawings (unit: mm, other tolerance +/-0.5mm).



MCP-S18

mini-1P6T, SMA or PCB, DC-18GHz

MCPn: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

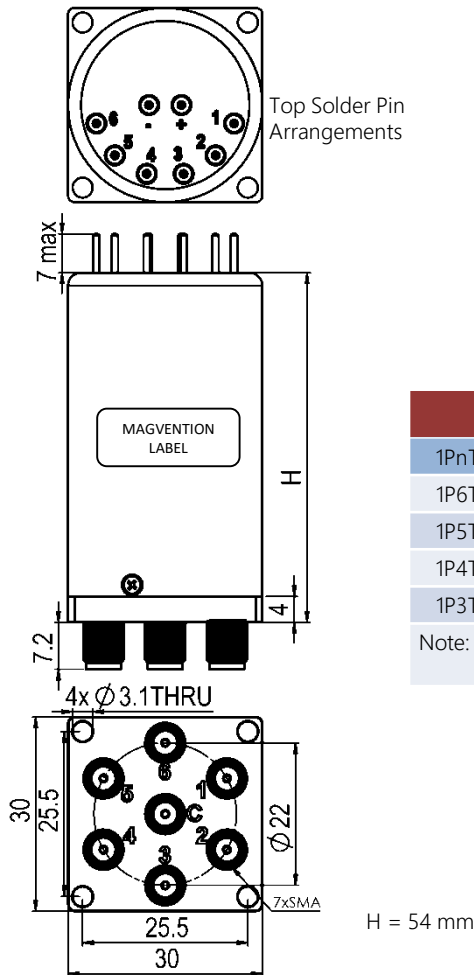
The MCP-S18 Series is a miniature 1P6T model featuring SMA connectors and an operation frequency range of DC to 18 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	90 g



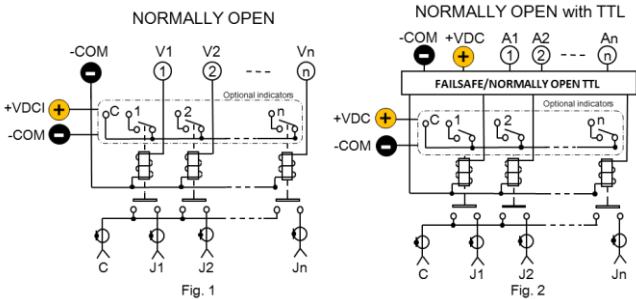
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60

Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140



1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCPn: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

The MCP-K40 Series is a miniature 1P6T model featuring K (2.92) connectors and an operation frequency range of DC to 40 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

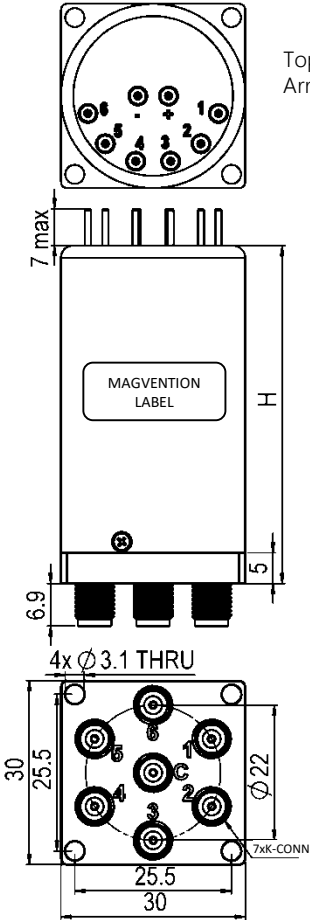
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2,000,000 (Standard)
Vibration (operating)	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	90 g



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60
18-26.5	1.8	0.8	50
26.5-40	2	1	50

Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140

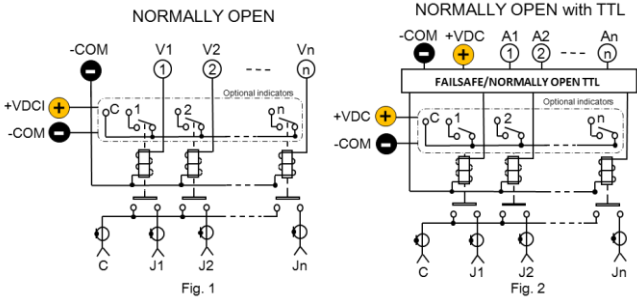
Top Solder Pin Arrangements



1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

H = 55 mm



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

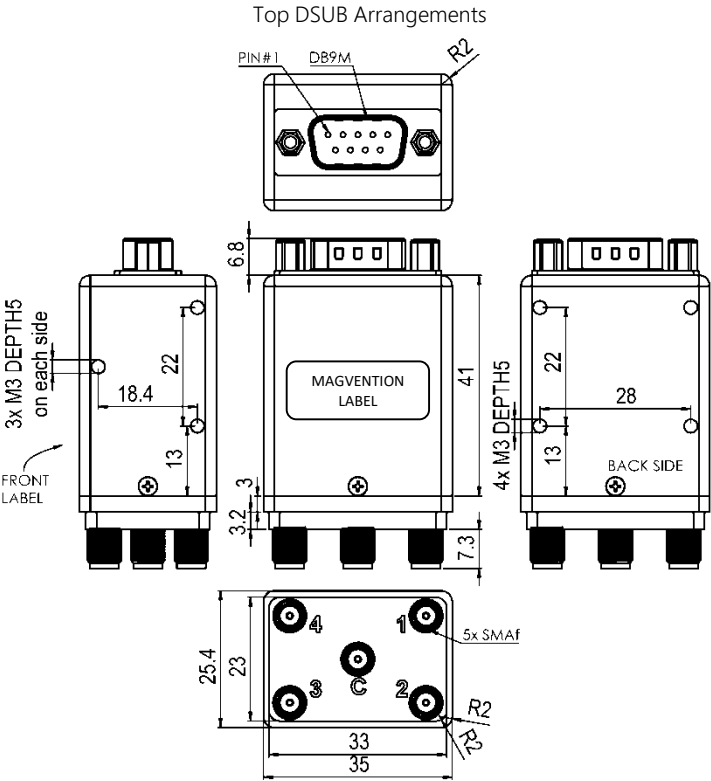
The **MCK4-S18** Series features SMA connectors and an operation frequency range of DC to 18 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 9-pin male D-sub control interface.

Specifications					
Contact Material	Plated Au				
Switching Sequence	Break before Make				
Switching Time (max)	15msec				
Impedance	50Ω				
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)				
Relative Humidity	5 to 85%				
Operation Life (cycles)	1,000,000 (Standard)				
Vibration (operating)	10G RMS, 20-2000Hz				
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec				
Weight (approx.)	100g				

Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	300	210	170	150

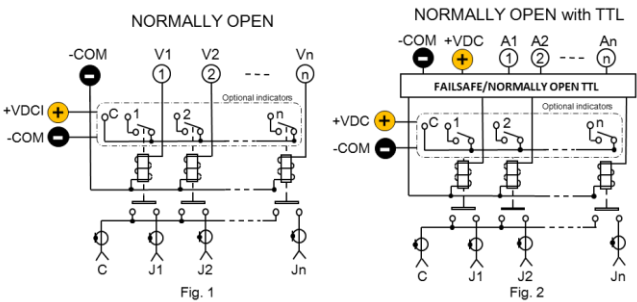


Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.2	0.2	80
3-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60



NORMALLY OPEN 9-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An or Vn (Jn-COM)
7	-COM (GND)
8	unused
9	+VDC

Pin 1-6: The corresponding control signal inputs.



Mechanical drawings (unit: mm, other tolerance +/-0.5mm).

MC4-N12

SPDT, N, DC-12.4GHz

The MC4-N12 Series features N-type connectors and an operation frequency range of DC to 12.4GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

FAILSAFE/LATCHING

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	260g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.15	0.20	80
2-4	1.20	0.25	80
4-12.4	1.50	0.50	60

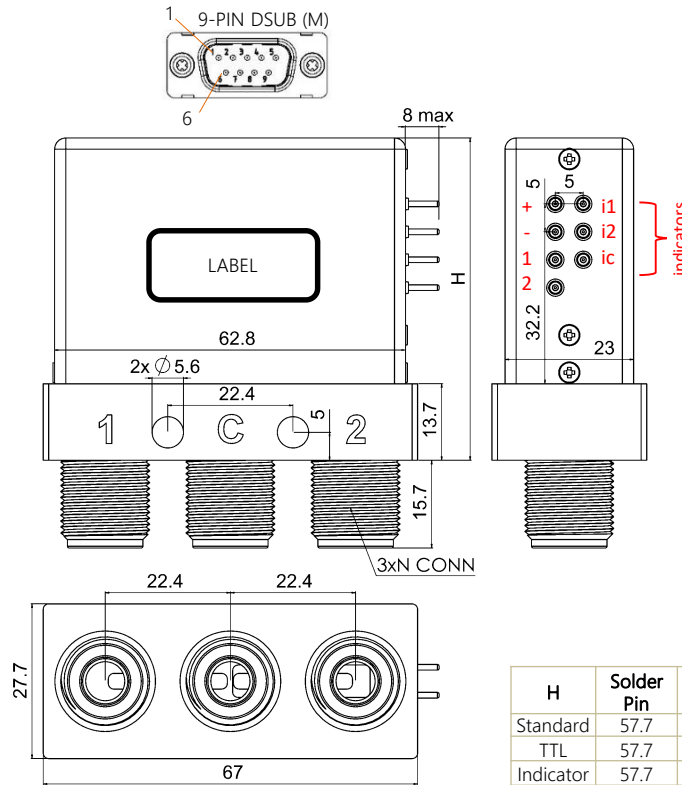
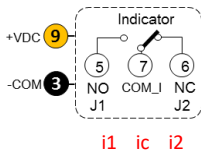
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	275	170	130	115
	Latching	100	80	70	60



Optional Indicator Specifications

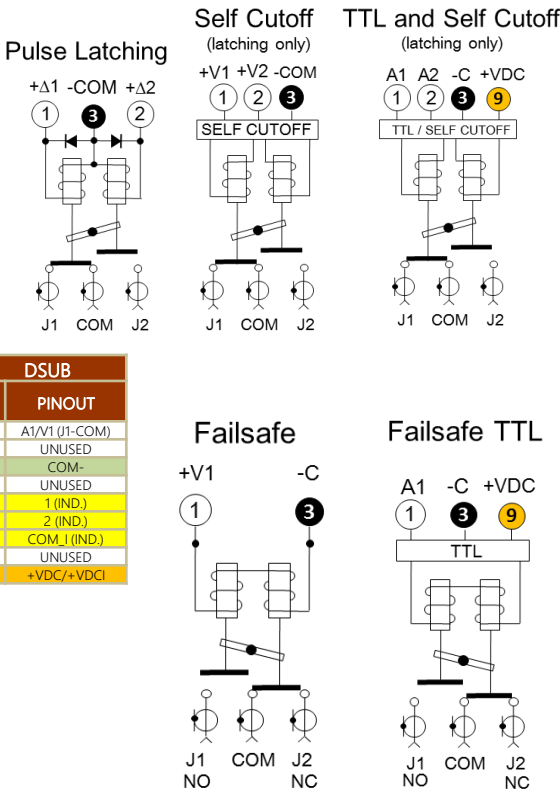
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



H	Solder Pin	DSUB
Standard	57.7	71.7
TTL	57.7	71.7
Indicator	57.7	71.7

Mechanical drawings (unit: mm, tolerance +/-0.5mm).



Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM, I (IND.)
8	UNUSED
9	+VDC/+VDCI

MC4p-N12

SPDT, N (high power), DC-12.4GHz

FAILSAFE/LATCHING

The MC4p-N12 Series features N-type connectors (high power) and an operation frequency range of DC to 12.4GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	260g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.20	0.20	80
2-4	1.30	0.30	70
4-8	1.40	0.40	60
8-12.4	1.50	0.50	50

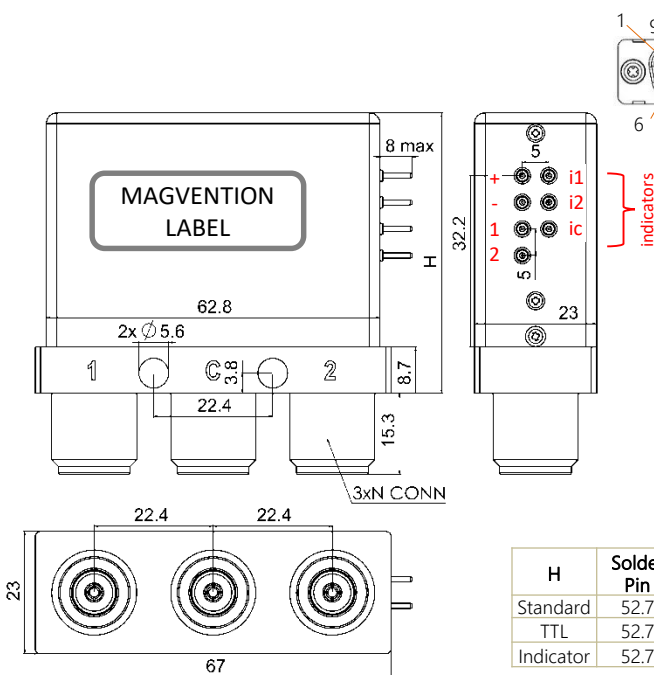
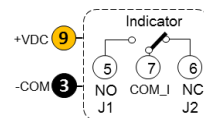
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	275	170	130	115
	Latching	100	80	70	60



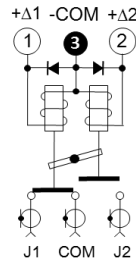
Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

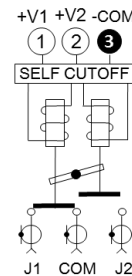
Note: +VDC and -C must be connected to operate.



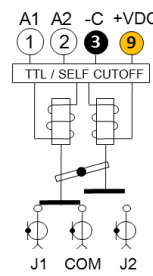
Pulse Latching



Self Cutoff (latching only)

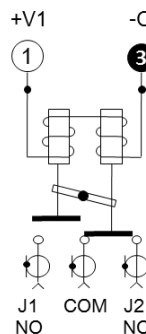


TTL and Self Cutoff (latching only)

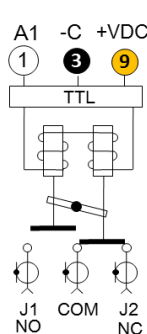


Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM, I (IND.)
8	UNUSED
9	+VDC/+VDCI

Failsafe



Failsafe TTL



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

The **MC4p-T12** Series features TNC-type connectors and an operation frequency range of DC to 12.4GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

Specifications			
Contact Material	Plated Au		
Switching Sequence	Break before Make		
Switching Time (max)	20msec		
Impedance	50Ω		
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)		
Relative Humidity	5 to 85%		
Operation Life (cycles)	1000000		
Vibration Operating	10G RMS, 20-2000Hz		
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec		
Weight (approx.)	260g		

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.15	0.20	80
2-4	1.20	0.25	80
4-12.4	1.50	0.50	60

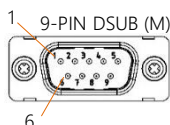
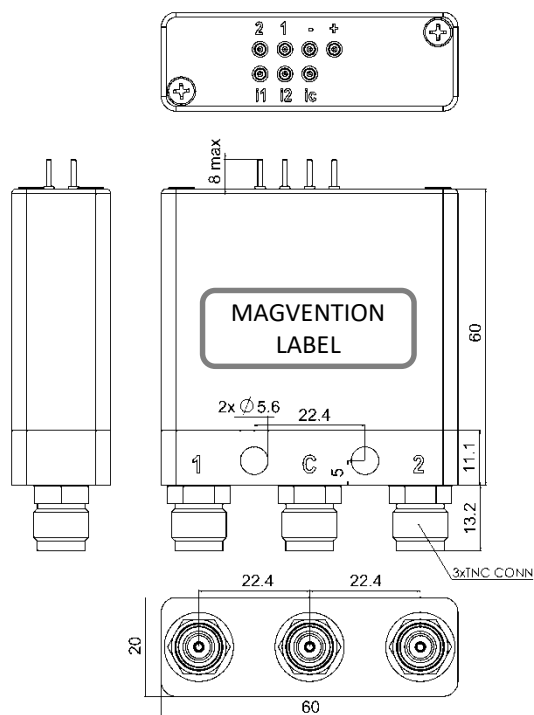
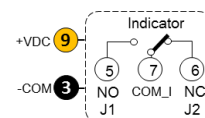
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	275	170	130	115
	Latching	100	80	70	60



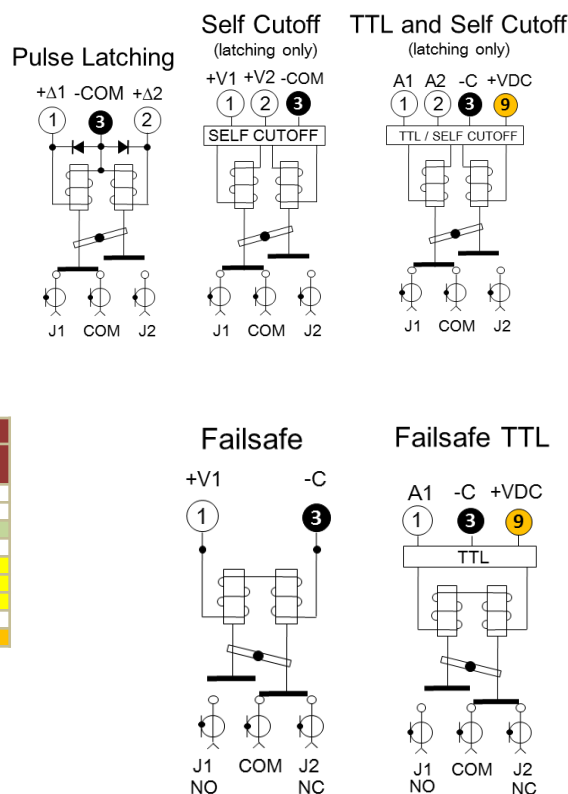
Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



Pin No.	PINOUT
1	A1/V1 (J1-COM)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

The MC4-C06 Series features SC-type connectors and an operation frequency range of DC to 6GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

FAILSAFE or LATCHING

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range (operating)	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Temperature (storage)	-55° C to +70° C
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (7 max -operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	280g

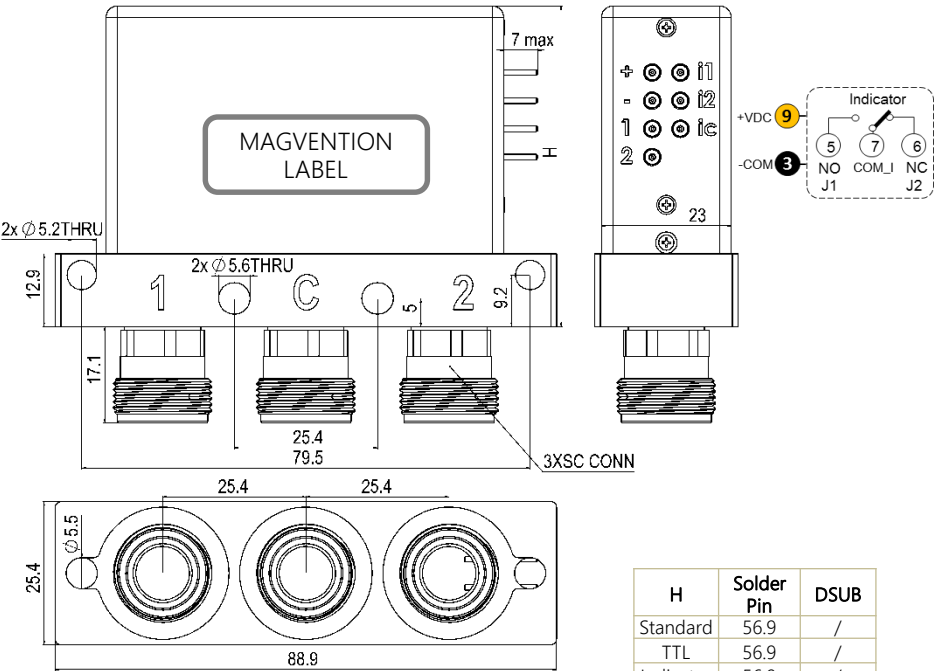
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	275	170	130	115
	Latching	100	80	70	60



Photo shown is a standard MC4-N-type.

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.20	0.20	70
2-4	1.30	0.30	60
4-6.5	1.50	0.50	60

Note: The listed RF results are for the model with standard power. Consult with the company for the high-power versions.



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16W

Note: +VDC and -C must be connected to operate.

Solder Pins

FAILSAFE		LATCHING	
Pin No.	PINOUT	Pin No.	PINOUT
1	A1/V1 (I1-COM)	1	A1/V1 (I1-COM)
2	UNUSED	2	A2/V2 (I2-COM)
3	COM-	3	COM-
4	UNUSED	4	UNUSED
5	1 (IND.)	5	1 (IND.)
6	2 (IND.)	6	2 (IND.)
7	COM.I (IND.)	7	COM.I (IND.)
8	UNUSED	8	UNUSED
9	+VDC/+VDCI	9	+VDC/+VDCI

H	Solder Pin	DSUB
Standard	56.9	/
TTL	56.9	/
Indicator	56.9	/

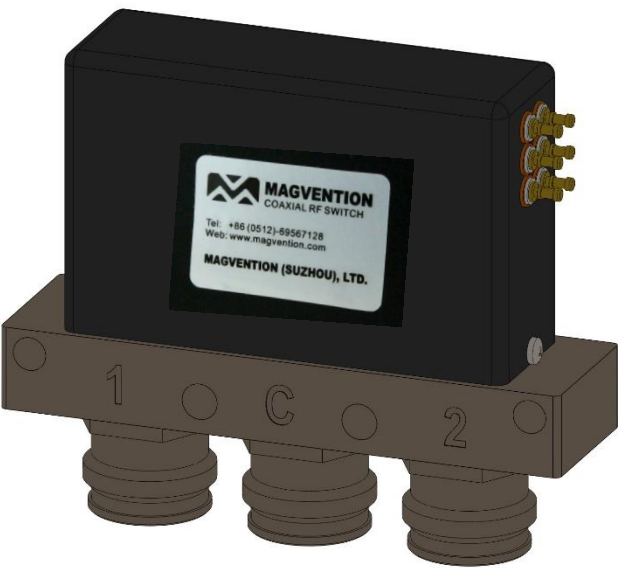
Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC4-R08

SPDT, 4.3-10, DC-8GHz

The **MC4-R08** Series features 4.3-10-type connectors and an operation frequency range of DC to 8GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

FAILSAFE or LATCHING

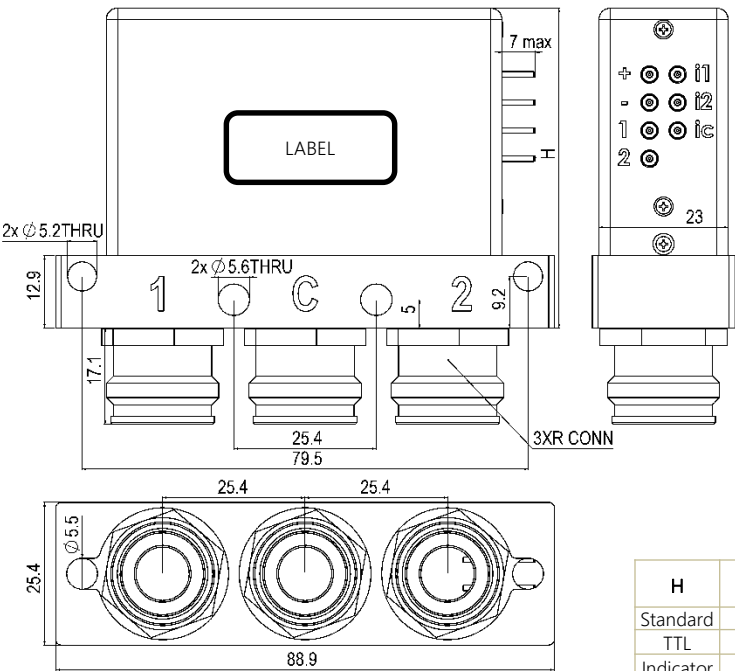


Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	280g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.30	0.30	70
3-4	1.40	0.40	60
4-6	1.50	0.50	60
6-8	1.70	0.70	50

Voltage (VDC)	12	18	24	28
Current (mA)				
Failsafe	275	170	130	115
Latching	100	80	70	60

Solder Pin Assignments are marked on the product.



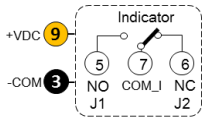
H	Solder Pin	DSUB
Standard	56.9	/
TTL	56.9	/
Indicator	56.9	/

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

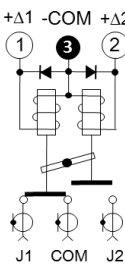
Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

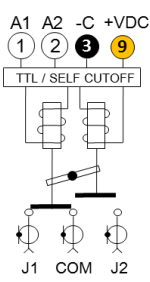
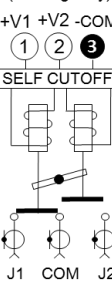
Note: +VDC and -C must be connected to operate.



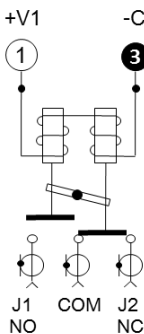
Pulse Latching



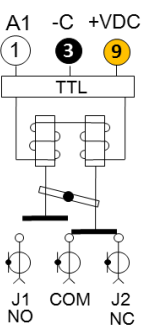
Self Cutoff TTL and Self Cutoff



Failsafe



Failsafe TTL



MC4-D04

SPDT, Din 7-16, DC-4GHz

The **MC4-D04** Series features Din 7-16-type connectors and an operation frequency range of DC to 4GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

FAILSAFE or LATCHING

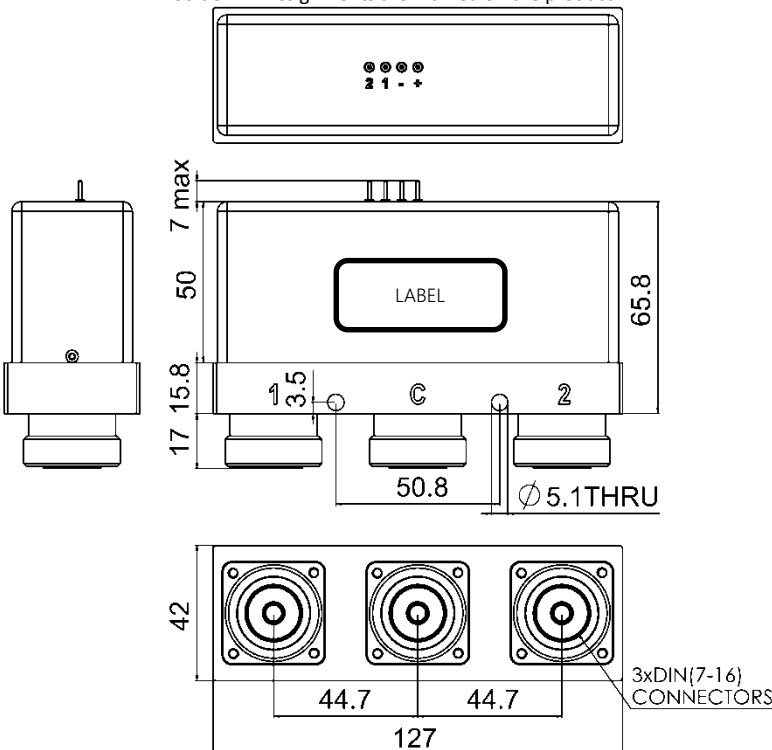


Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	50msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	700g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.30	0.30	70
3-4	1.40	0.40	60

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	270	220	150	110
	Latching	310	250	170	130

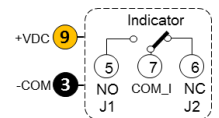
Solder Pin Assignments are marked on the product.



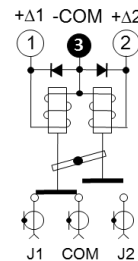
Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

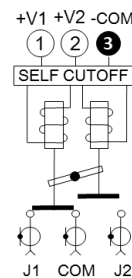
Note: +VDC and -C must be connected to operate.



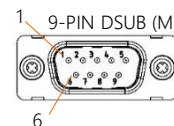
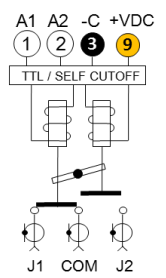
Pulse Latching



Self Cutoff (latching only)

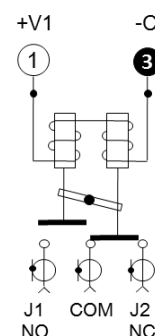


TTL and Self Cutoff (latching only)

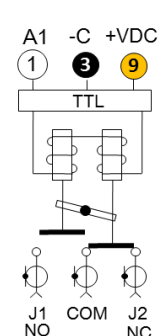


Pin No	PINOUT
1	A1/V1 (J1-COM)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.)
6	2 (IND.)
7	COM.1 (IND.)
8	UNUSED
9	+VDC/+VDCI

Failsafe



Failsafe TTL

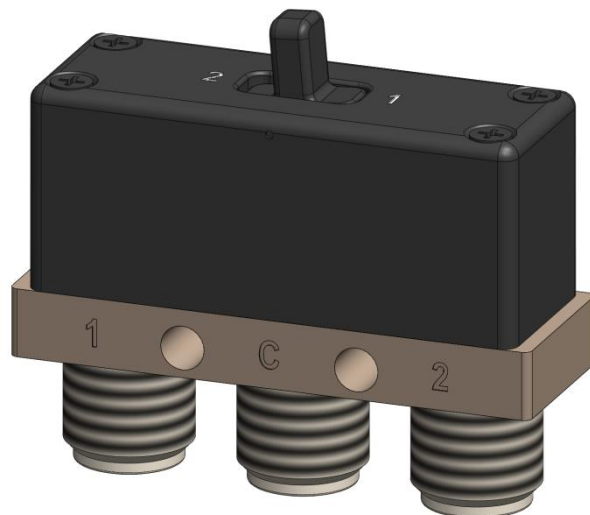


Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MANUAL OPERATION

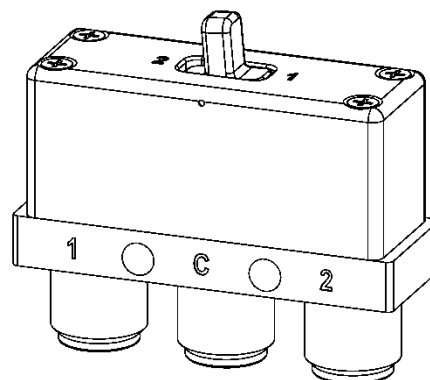
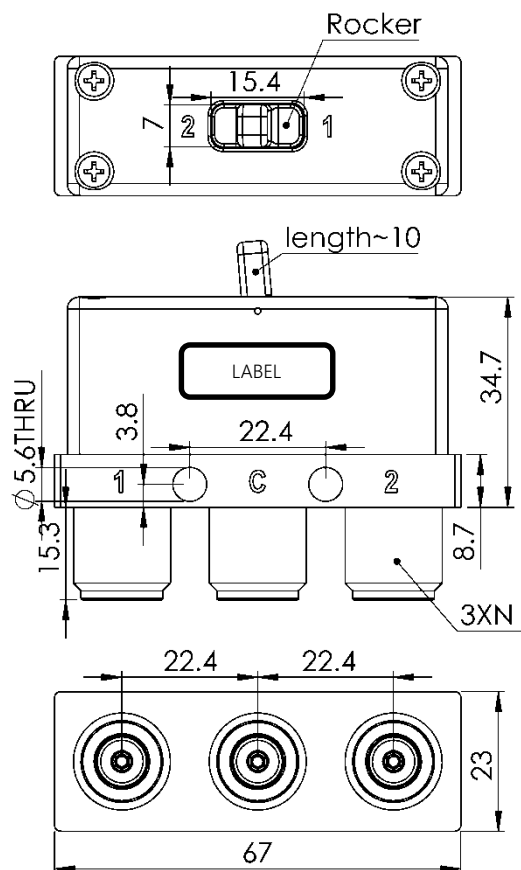
The **MC4p-N12** Series features N-type connectors (high power) and an operation frequency range of DC to 12.4GHz. This provides a manual operation.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	Manual operation
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	180g



Manual Operation	Port 1 - C	Port 2 - C
Toggle to Left Side	Open	Connected
Toggle to Right Side	Connected	Open

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.20	0.20	80
2-4	1.30	0.30	70
4-8	1.40	0.40	60
8-12.4	1.50	0.50	50



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

The **MCD-N04** series features N-type connectors and an operation frequency range of DC to 4 GHz. The N connectors are arranged in a Y-configuration so that input is on one side and outputs are on the other. This series can be either latching or failsafe type. The options include TTL, SELF CUTOFF, suppression diodes, and indicator contacts.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Operating Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	95% ± 3% (30~60°C ± 5°C)
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	540g

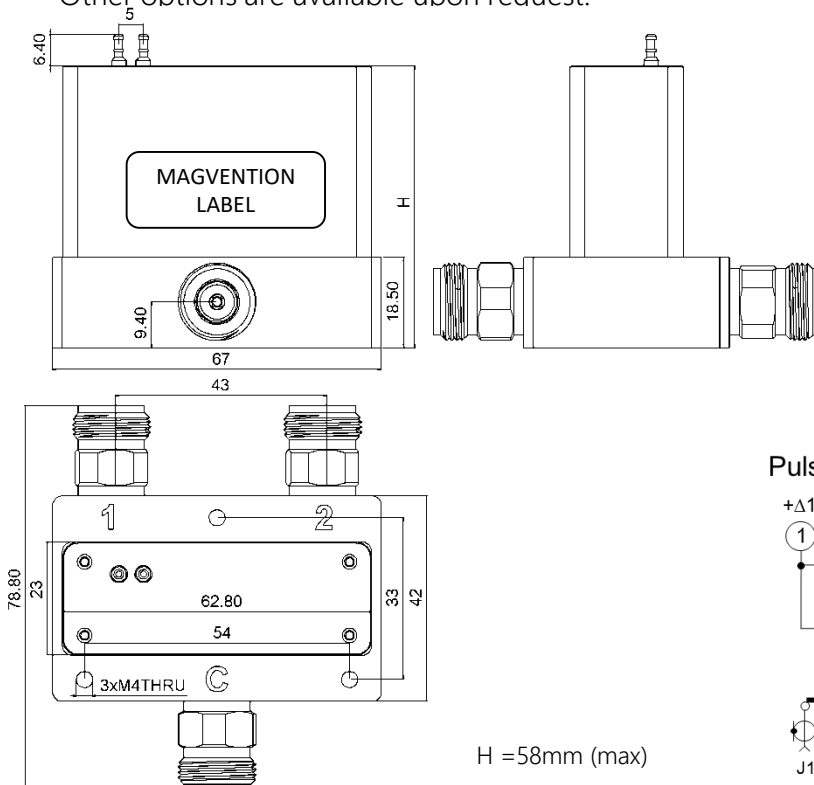
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	275	170	130	115
	Latching	100	80	70	60



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.15	0.20	80
2-4	1.25	0.25	60

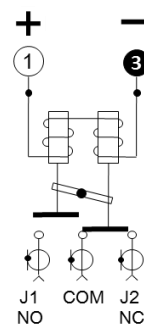
Higher frequency range is available upon request.

Other options are available upon request.

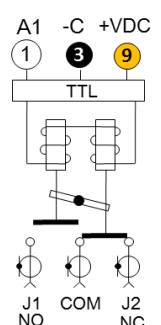


Mechanical drawings (unit: mm, tolerance +/-0.5mm).

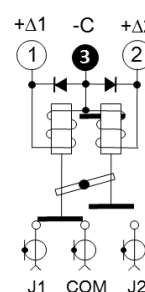
Failsafe



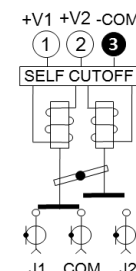
Failsafe TTL



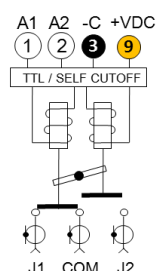
Pulse Latching



Self Cutoff (latching only)



TTL and Self Cutoff (latching only)



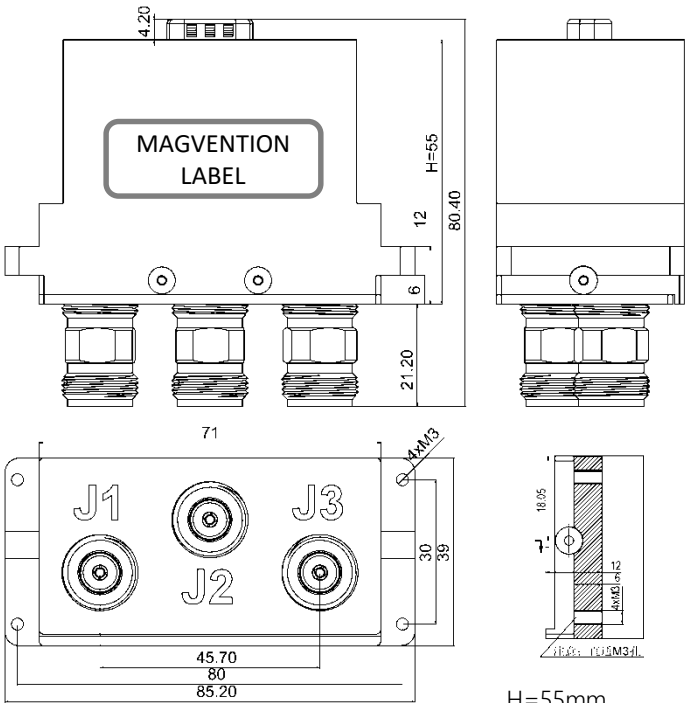
MCVpe-N02L28-3KDM-1: 1P2T, ext-T, N-V-type, DC-2GHz, LATCHING, 28VDC, TTL/SELF CUTOFF/INDICATOR, DB9, Moisture Seal, **Strait Mounting Hole**

The **MCVpe-N02** series features N-type connectors and an operation frequency range of DC to 2 GHz. The N connectors are arranged in a V-configuration to allow more spacing between them. This series can be either latching or failsafe type. The options include TTL, SELF CUTOFF, suppression diodes, and indicator contacts.

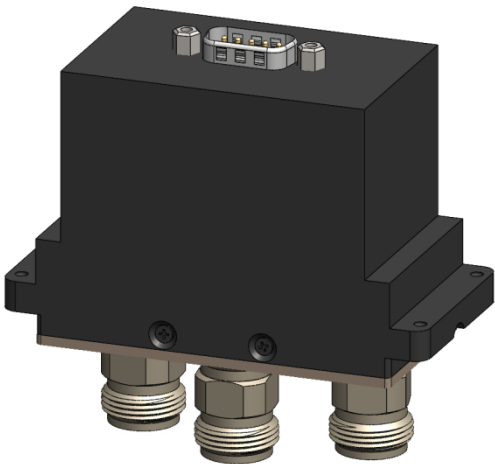
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Operating Temperature Range	-55°C to +85°C ("e" option)
Relative Humidity	95%±3% (30~60°C±5°C)
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 15-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec

Voltage (VDC)					28
Current (mA) (max)					
	Latching				126

Other options are available upon request.

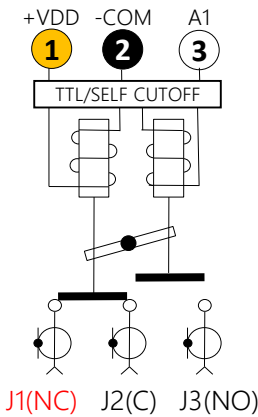
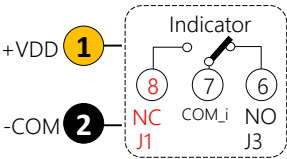


H=55mm
Mechanical drawings. (unit: mm)



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
0.1 - 2	1.2	0.20	60

The switch is designed to handle CW RF Power of 400W at 2GHz, 500W at 1GHz, 1500W at 225MHz (sea level).



LATCHING TTL/SELF CUT OFF 9-PIN D-SUB	
Pin No.	PINOUT
1	+VDD
2	COM(-)
3	A1 (TTL) (J2-J3)
4	UNUSED
5	UNUSED
6	INDICATOR J3
7	COM_i (INDICATOR)
8	INDICATOR J1
9	UNUSED

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100 mA
Max "ON" resistance: 16 W

Note: +VDD and COM- must be connected to operate.

The **MC5-S** Series features SMA connectors with internal termination and an operation frequency range of DC to 26.5 GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

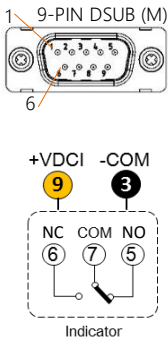
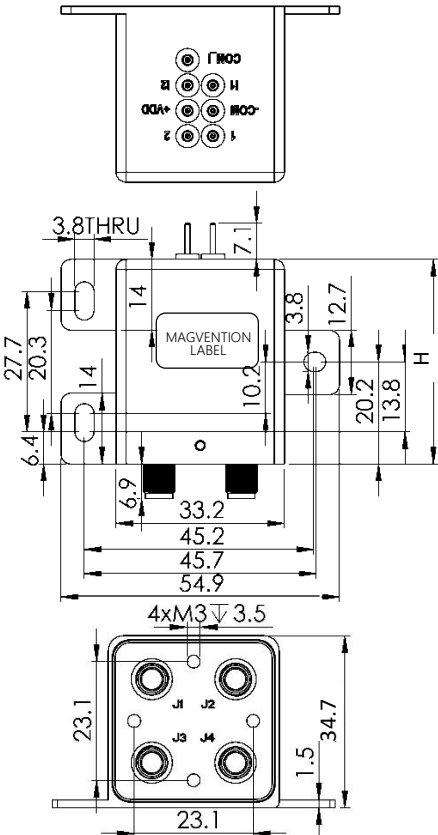
FAILSAFE/LATCHING

Specifications					
Contact Material	Plated Au				
Switching Sequence	Break before Make				
Switching Time (max)	15msec				
Impedance	50Ω				
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)				
Relative Humidity	5 to 85%				
Operation Life (cycles)	3000000				
Vibration Operating	10G RMS, 20-2000Hz				
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec				
Weight (approx.)	120g				
Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	400	330	207	193
	Latching	440	248	211	246



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.20	0.20	80
6-12	1.30	0.25	70
12-18	1.35	0.40	60
18-26.5	1.70	0.90	55

Other options are available upon request.



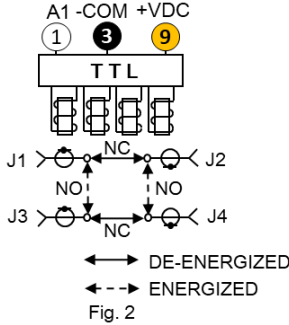
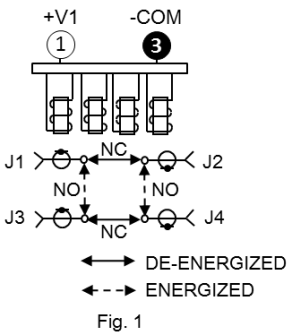
PINOUT	
Pin No.	PINOUT
1	A1/V1 (NO: J1-J3, J2-J4)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.) (NO: J1-J3, J2-J4)
6	2 (IND.) (NC: J1-J2, J3-J4)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

H	Solder Pin	DSUB
Standard	40.4	45
TTL	40.4	52
Indicator	40.4	52



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

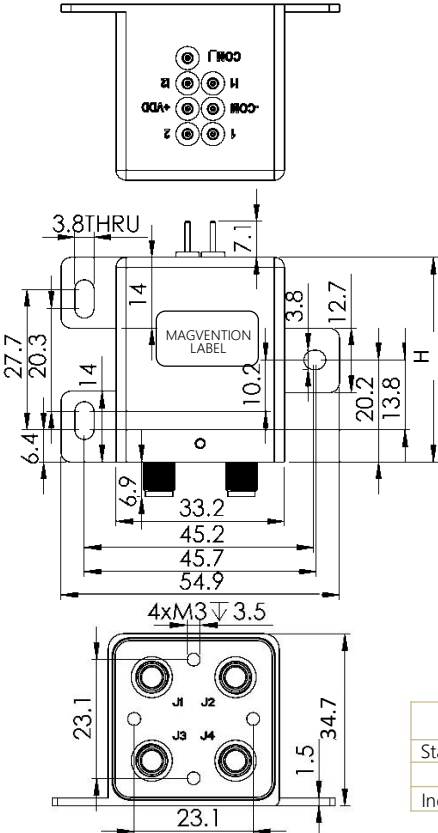
The **MC5-K** Series features K(2.92mm) connectors with internal termination and an operation frequency range of DC to 40 GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

FAILSAFE/LATCHING

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	120g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	400	330	207	193
	Latching	440	248	211	246

Other options are available upon request.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).



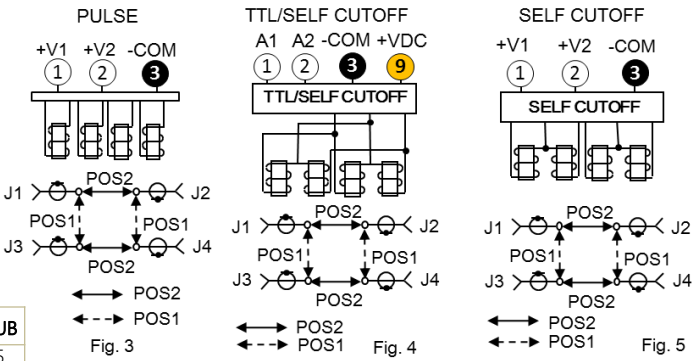
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.30	0.30	70
6-12	1.40	0.40	70
12-18	1.50	0.50	60
18-26.5	1.70	0.90	55
26.5-40	2.00	1.30	50

PINOUT	
Pin No.	PINOUT
1	A1/V1 (POST: J1-J3,J2-J4)
2	A2/V2 (POST: J1-J2,J3-J4)
3	COM-
4	UNUSED
5	1 (IND.) (POST: J1-J3,J2-J4)
6	2 (IND.) (POST: J1-J2,J3-J4)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



The MC5-U Series features U(2.4mm) connectors with internal termination and an operation frequency range of DC to 50 GHz. This series is available with failsafe, latching self-cutoff or pulse latching, TTL, and coil suppression options.

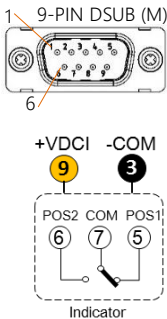
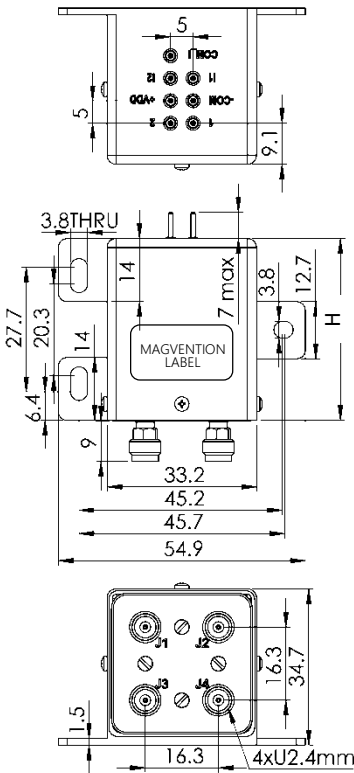
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	120g

Voltage (VDC)		12	18	24	28
Current (mA)	Failsafe	400	330	207	193
	Latching	440	248	211	246



Standard			
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.30	0.30	70
6-12	1.40	0.40	70
12-18	1.50	0.50	60
18-26.5	1.70	0.70	55
26.5-40	2.00	1.00	50
40-50	2.20	1.40	45

Other options are available upon request.

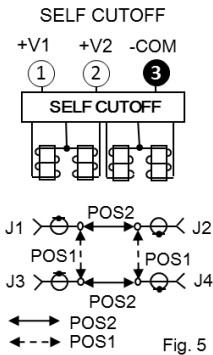
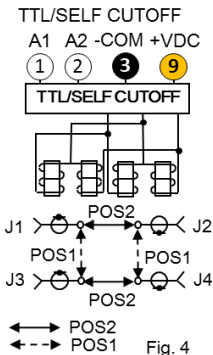
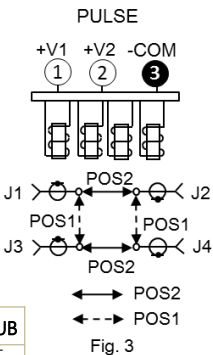


PINOUT	
Pin No.	PINOUT
1	A1/V1 (POST: J1-J3,J2-J4)
2	A2/V2 (POST: J1-J2,J3-J4)
3	COM-
4	UNUSED
5	1 (IND.) (POST: J1-J3,J2-J4)
6	2 (IND.) (POST: J1-J2,J3-J4)
7	COM.+ (IND.)
8	UNUSED
9	+VDC/+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



H	Solder Pin	DSUB
Standard	40.4	45
TTL	40.4	52
Indicator	40.4	52

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC6np-N

1P6T, N (high power), DC-12.4GHz

MC6n: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

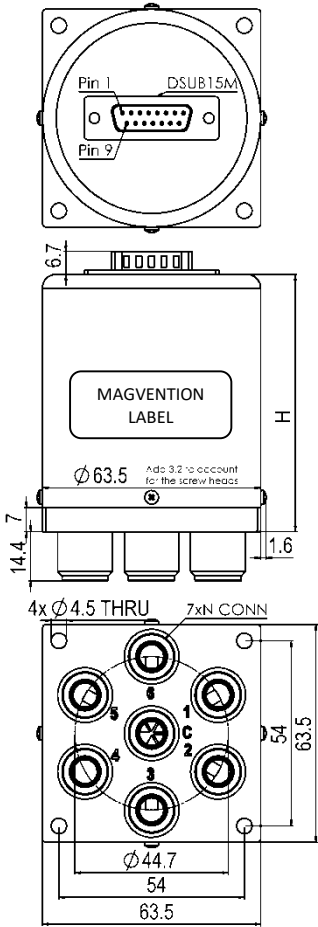
The MC6p-N Series features N connectors and an operation frequency range from DC to 12.4 GHz. This series is of NORMALLY OPEN type with or without TTL, coil suppression diodes, and indicator options.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	550g

Voltage (VDC)	12	18	24	28
Current (mA)	250	160	140	120



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.3	0.3	70
3-8	1.5	0.5	60
8-12.4	1.7	0.7	50



Other options are available upon request.

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

Height H Table.

DSUB		Solder Pin	
drive	Std	drive	Std
4D	65	no K	65
Others	75	K	68

Note: K=indicator;

NORMALLY OPEN 15-PIN D-SUB PINOUT

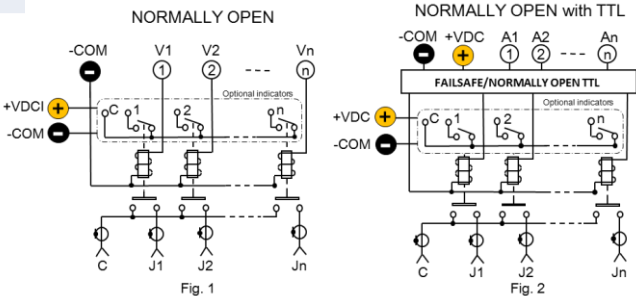
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDC

PIN 8-14: For optional INDICAOTRS only.

PIN 1-6: The corresponding control signal inputs.
PIN 8-15: For optional INDICAOTRS only.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC6-C

1P6T, SC, DC-6.5GHz

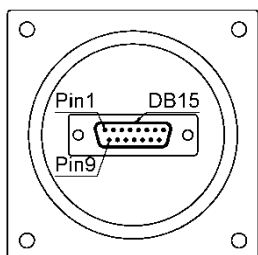
MC6n: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

The MC6-C Series features SC connectors and an operation frequency range from DC to 6.5 GHz. This series is of NORMALLY OPEN type with or without TTL, coil suppression diodes, and indicator options.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	580g

Voltage (VDC)	12	18	24	28
Current (mA)	240	160	140	120



Other options are available upon request.

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

1PnT PORT CONFIGURATIONS

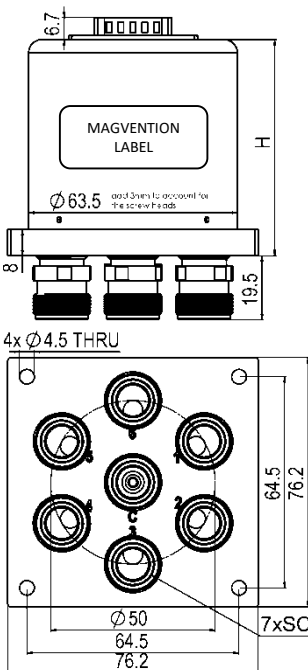
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

Height H Table.

DSUB		Solder Pin	
drive	Std	drive	Std
4D	66	no K	66
Others	76	K	69

Note: K=indicator;



Mechanical drawings (unit: mm, tolerance +/-0.5mm).



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-4	1.25	0.3	70
4-6.5	1.45	0.4	60

Note: The listed RF results are for the model with standard power. Consult with the company for the high-power versions.

NORMALLY OPEN 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDC

PIN 8-14: For optional INDICATORS only.

PIN 1-6: The corresponding control signal inputs.

PIN 8-15: For optional INDICATORS only.

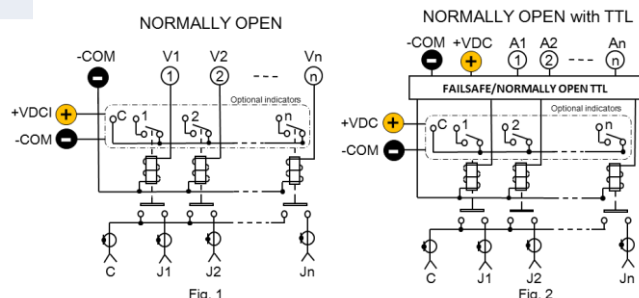


Fig. 1

Fig. 2

MC6-R

1P6T, 4.3-10, DC-6GHz

MC6n: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN

The MC6-R Series features 4.3-10 connectors and an operation frequency range from DC to 6 GHz. This series is of NORMALLY OEPN type with or without TTL, coil suppression diodes, and indicator options.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C
	-55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	700g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.30	0.30	70
3-4	1.40	0.40	60
4-6	1.50	0.50	50

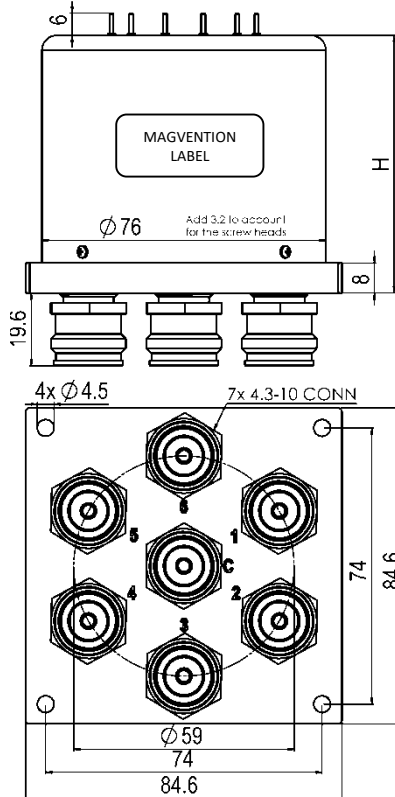
Voltage (VDC)	12	18	24	28
Current (mA)	240	160	140	100



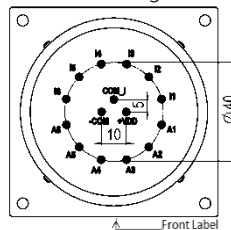
Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



Top Solder Pin Arrangements



1PnT PORT CONFIGURATIONS

1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

Height H Table.

DSUB		Solder Pin	
drive	Std	drive	Std
4D	66	no K	66
Others	76	K	69

Note: K=indicator;

NORMALLY OPEN 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8	1 (ind: J1-C)
9	2 (ind: J2-C)
10	3 (ind: J3-C)
11	4 (ind: J4-C)
12	5 (ind: J5-C)
13	6 (ind: J6-C)
14	com_i
15	+VDCI

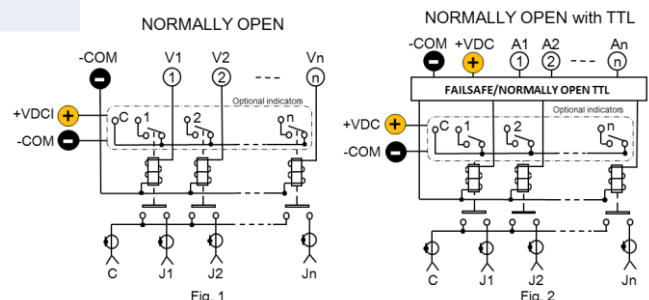
NORMALLY OPEN TTL 15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	1 (ind: J1-C)
9	2 (ind: J2-C)
10	3 (ind: J3-C)
11	4 (ind: J4-C)
12	5 (ind: J5-C)
13	6 (ind: J6-C)
14	com_i
15	+VDC

PIN 8-14: For optional INDICAOTRS only.

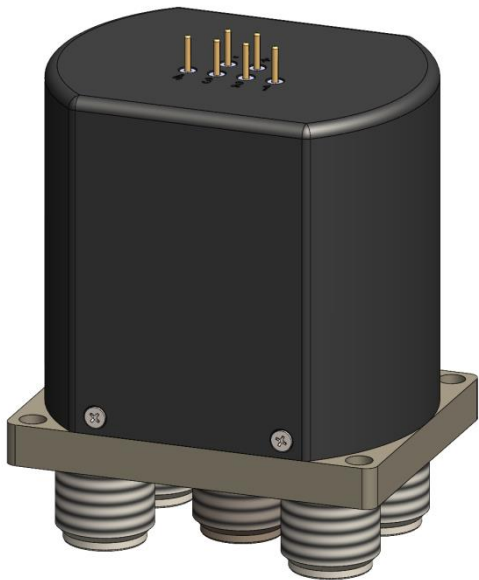
PIN 1-6: The corresponding control signal inputs.

PIN 8-15: For optional INDICAOTRS only.



The MC64-C Series features C connectors and an operation frequency range from DC to 1 GHz. This series is of NORMALLY OPEN type with or without TTL, coil suppression diodes, and indicator options.

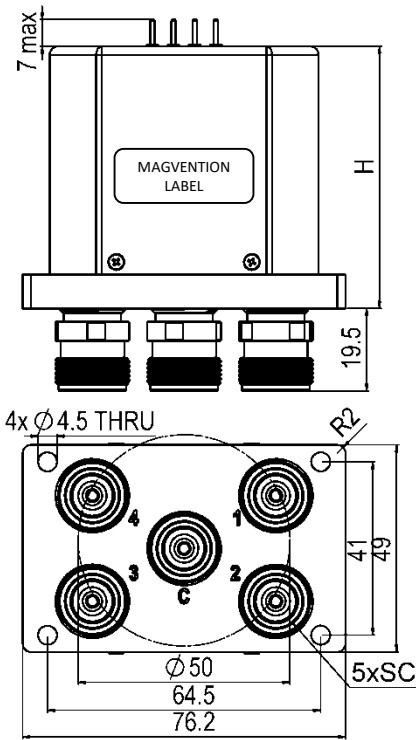
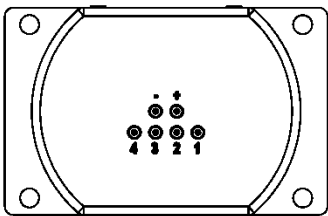
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C (Standard) -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	550g



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-1	1.2	0.2	70

Voltage (VDC)	28
Current (mA)	120

Top Solder Pin Arrangements

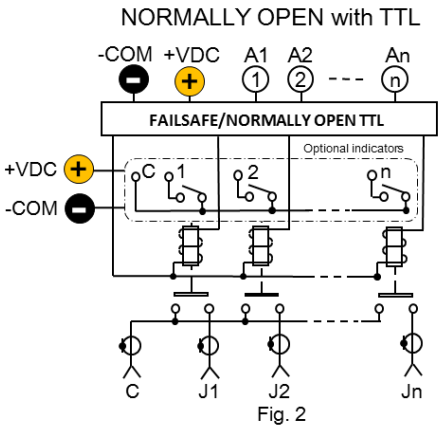


H = 67 mm
(without indicators)

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

NORMALLY OPEN TTL	
Pin No.	PINOUT
n=1-4	An (Jn-COM)
7	COM(-)
15	+VDC
others	unused

Pin 1-4: The corresponding control signal inputs.

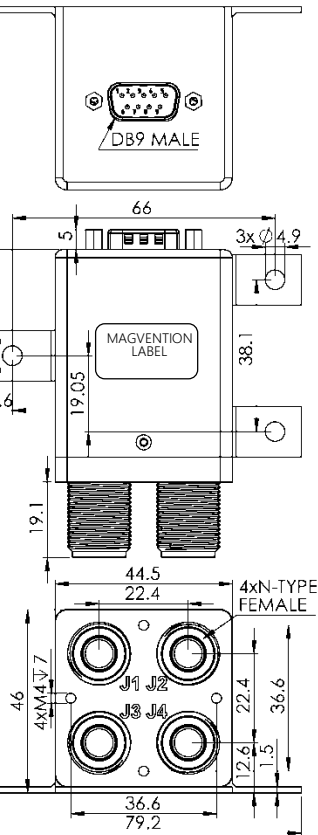


The MC7-N product features N-type connectors and an operation frequency range of DC to 12.4 GHz. This product can be of latching or failsafe type. The options include TTL, SELF CUTOFF, suppression diodes, and indicators. Higher frequency range is available upon request.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Operating Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	95%±3% (30~60°C±5°C)
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	350g

Voltage (VDC)		12	18	24	28
Current (mA) (max)	Failsafe	550	370	270	240
	Latching	290	220	200	160

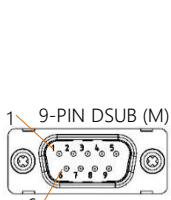
Other options are available upon request.



Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



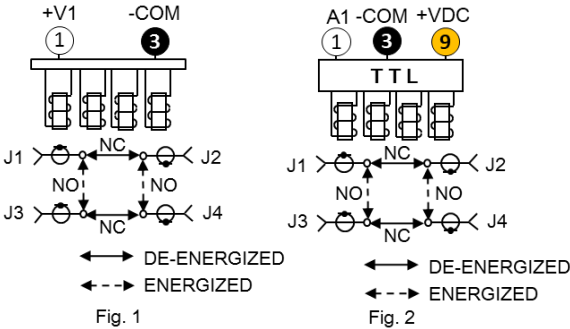
Pin No.	PINOUT
1	A1/V1 (POS1: J1-J3,J2-J4)
2	A2/V2 (POS2: J1-J2,J3-J4)
3	COM-
4	UNUSED
5	1 (IND.) (POS1: J1-J3,J2-J4)
6	2 (IND.) (POS2: J1-J2,J3-J4)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI

Pin No.	PINOUT
1	A1/V1 (NO: J1-J3,J2-J4)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.) (NO: J1-J3,J2-J4)
6	2 (IND.) (NC: J1-J2,J3-J4)
7	COM_1 (IND.)
8	UNUSED
9	+VDC/+VDCI

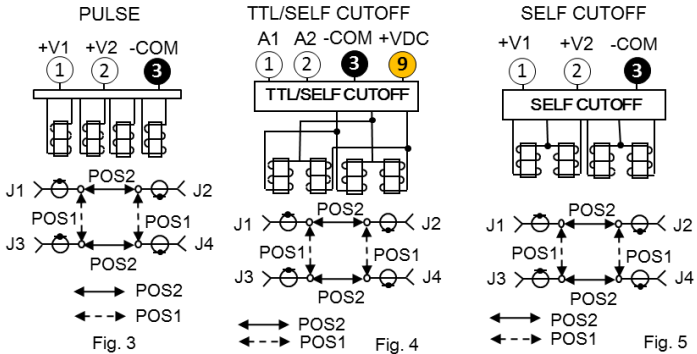


Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.15	0.20	70
2-4	1.20	0.25	70
4-12.4	1.50	0.50	50

FAILSAFE



LATCHING



The **MC7p-N** product features N-type connectors and an operation frequency range of DC to 12.4 GHz. This product can be of latching or failsafe type. The options include TTL, SELF CUTOFF, suppression diodes, and indicators. Higher frequency range is available upon request.

Specifications

Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Operating Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	95%±3% (30~60°C±5°C)
Operation Life (cycles)	1,000,000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	350g



Voltage (VDC)		12	18	24	28
Current (mA) (max)	Failsafe	550	370	270	240
	Latching	290	220	200	160

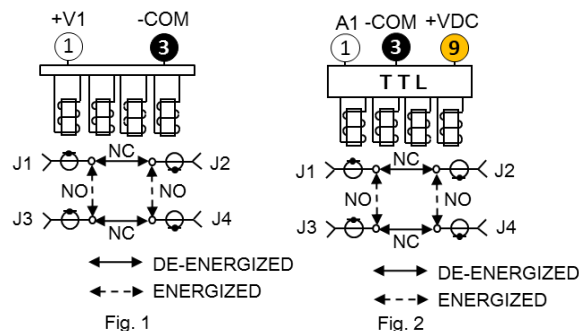
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-2	1.20	0.20	70
2-4	1.25	0.25	60
4-12.4	1.70	0.70	40

Optional Indicator Specifications

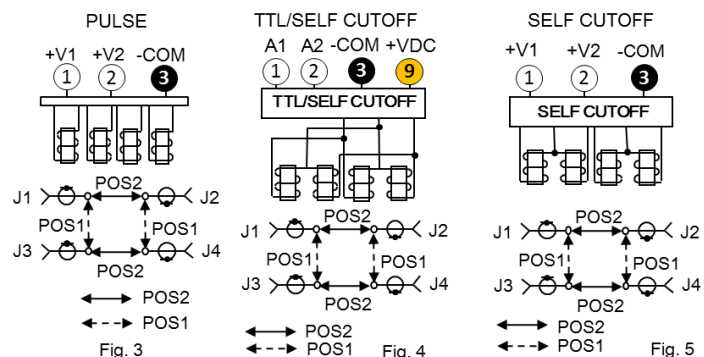
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

FAILSAFE



LATCHING



Pin No.	PINOUT
1	A1/V1 (NO: J1-J3, J2-J4)
2	UNUSED
3	COM-
4	UNUSED
5	1 (IND.) (NO: J1-J3, J2-J4)
6	2 (IND.) (NC: J1-J2, J3-J4)
7	COM, J (IND.)
8	UNUSED
9	+VDC/+VDCI

Pin No.	PINOUT
1	A1/V1 (POS: J1-J3, J2-J4)
2	A2/V2 (POS: J1-J2, J3-J4)
3	COM-
4	UNUSED
5	1 (IND.) (POS: J1-J3, J2-J4)
6	2 (IND.) (POS: J1-J2, J3-J4)
7	COM, J (IND.)
8	UNUSED
9	+VDC/+VDCI

H = 58.4 mm

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCFnT: n=3-6 (e.g., n=6 for 1P6T)

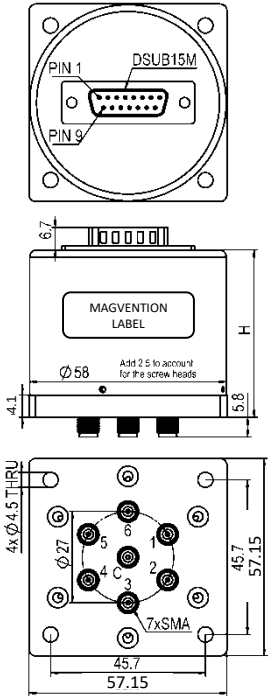
NORMALLY OPEN
or LATCHING

The MCFnT-S18 product features SMA connectors and an operation frequency range of DC to 18 GHz. This product can be of normally-open or latching type and comes with internal self-terminations. Options include coils suppression diodes, TTL, and/or self cutoff circuits, and indicators.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	240g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	300	220	167	160
	Latching (set)	350	240	180	160

For LATCHING, I(reset) = n x I(set).
Other options are available upon request.



MCF3-,1P3T SWITCH
MCF4-,1P4T SWITCH
MCF5-,1P5T SWITCH
MCF6-,1P6T SWITCH

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	47.1	47.1
TTL	47.1	59.1
Indicator	47.1	59.1

Mechanical drawings (unit: mm, tolerance +/-0.5mm).



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	80
6-12	1.4	0.4	70
12-18	1.5	0.5	60

OPTIONAL INDICATOR	
Pin No.	PINOUT
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM. I
15	+VDCI

Optional Indicator Specifications
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω
Note: +VDC and -C must be connected to operate.

Pin 1-6: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	+AVn (Jn-COM)
7	COM(-)
8	+AVR (Reset ALL OPEN)
9-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	AR (Reset ALL OPEN)
9-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

MCF6T-K40

1P6T, Terminated, K, DC-40GHz

MCFnT: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN
or LATCHING

The **MCFnT-K40** product features **K** (2.92mm) connectors and an operation frequency range of DC to 40 GHz. This product can be of normally-open or latching type and comes with internal self-terminations. Options include coils suppression diodes, TTL, and/or self cutoff circuits, and indicators.



Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	240g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60
18-32	1.9	0.8	55
32-40	2.2	1.3	50

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	300	220	167	160
	Latching (set)	350	240	180	160

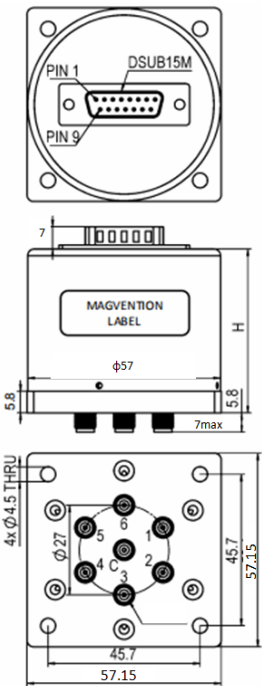
For LATCHING, I(reset) = n x I(set).
Other options are available upon request.

OPTIONAL INDICATOR	
Pin No.	PINOUT
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM I
15	+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.



MCF3-,1P3T SWITCH
MCF4-,1P4T SWITCH
MCF5-,1P5T SWITCH
MCF6-,1P6T SWITCH

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	48.8	48.8
TTL	48.8	60.8
Indicator	48.8	60.8

Pin 1-6: The corresponding control signal inputs.
Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	+ΔVn (Jn-COM)
7	COM(-)
8	+ΔVR (Reset ALL OPEN)
9-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	AR (Reset ALL OPEN)
9-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCF6Th-K40

-U

1P6T, Terminated, K, DC-40GHz

hi-performance, high repeatability: 0.03dB (Insertion loss)

NORMALLY OPEN
or LATCHING

The **MCFnTh-K40** product features K (2.92mm) connectors and an operation frequency range of DC to 40 GHz. This product can be of normally-open or latching type and comes with internal self-terminations. Options include coils suppression diodes, TTL, and/or self cutoff circuits, and indicators.



Specifications					
Contact Material		Plated Au			
Switching Sequence		Break before Make			
Switching Time (max)		15msec			
Impedance		50Ω			
Temperature Range		-25°C to +65°C			
		-55°C to +85°C ("e" option)			
Relative Humidity		5 to 85%			
Operation Life (cycles)		3000000			
Vibration Operating		10G RMS, 20-2000Hz			
Mechanical Shock (non-operating)		50G, 1/2 Sine, 11msec			
Weight (approx.)		240g			
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	300	220	167	160
	Latching (set)	350	240	180	160

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	70
12-18	1.5	0.5	60
18-26.5	1.6	0.6	60
26.5-40	1.8	0.8	55

OPTIONAL INDICATOR	
Pin No.	PINOUT
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_1
15	+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

Pin 1-6: The corresponding control signal inputs.
Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

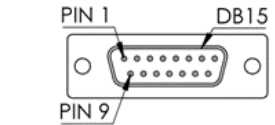
NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	+ΔVn (Jn-COM)
7	COM(-)
8	+ΔVR (Reset ALL OPEN)
9-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	AR (Reset ALL OPEN)
9-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

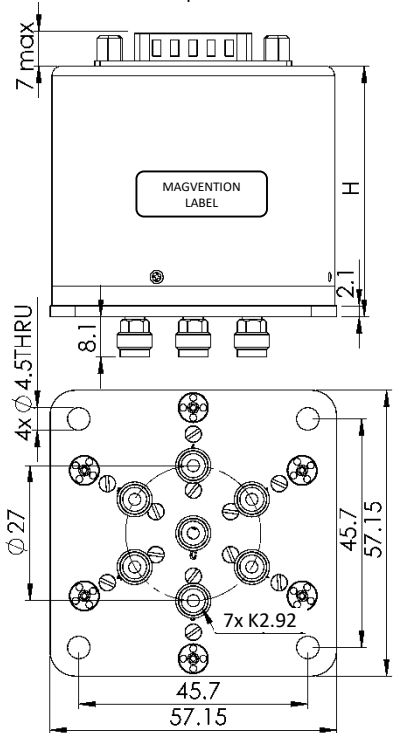


MCF3-,1P3T SWITCH
MCF4-,1P4T SWITCH
MCF5-,1P5T SWITCH
MCF6-,1P6T SWITCH

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	49.1	49.1
TTL	49.1	61.1
Indicator	49.1	61.1



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCF6T-U50

1P6T, Terminated, U, DC-50GHz

MCFnT: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN
or LATCHING

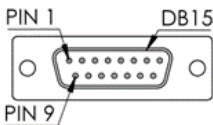
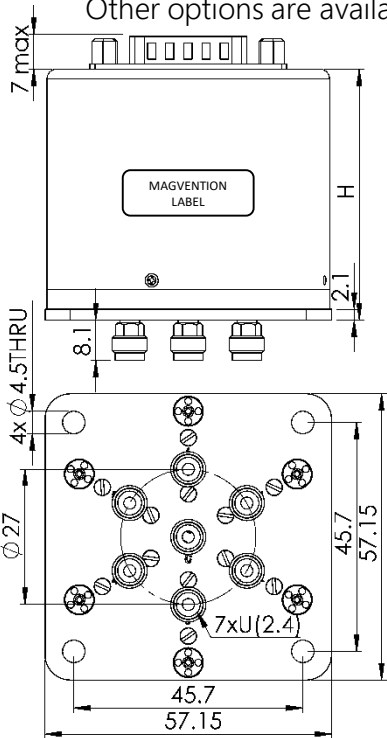
The **MCFnT-U50** product features U (2.4mm) connectors and an operation frequency range of DC to 50 GHz. This product can be of normally-open or latching type and comes with internal self-terminations. Options include coils suppression diodes, TTL, and/or self cutoff circuits, and indicators.



Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	240g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	300	220	167	160
	Latching (set)	350	240	180	160

For LATCHING, I(reset) = n x I(set).
Other options are available upon request.



MCF3-,1P3T SWITCH
MCF4-,1P4T SWITCH
MCF5-,1P5T SWITCH
MCF6-,1P6T SWITCH

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	49.1	49.1
TTL	49.1	61.1
Indicator	49.1	61.1

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-18	1.5	0.5	60
18-32	1.9	0.8	55
32-40	2.0	1.0	50
40-50	2.1	1.3	50

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	+ΔVn (Jn-COM)
7	COM(-)
8	+ΔVR (Reset ALL OPEN)
9-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	AR (Reset ALL OPEN)
9-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

Pin 1-6: The corresponding control signal inputs.
Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

OPTIONAL INDICATOR	
Pin No.	PINOUT
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

MCF6T-V67

1P6T, Terminated, V(1.85mm), DC-67GHz

MCFnT: n=3-6 (e.g., n=6 for 1P6T)

NORMALLY OPEN
or LATCHING

The MCFnT-V67 product features V (1.85mm) connectors and an operation frequency range of DC to 67 GHz. This product can be of normally-open or latching type and comes with internal self-terminations. Options include coils suppression diodes, TTL, and/or self cutoff circuits, and indicators.

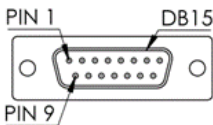
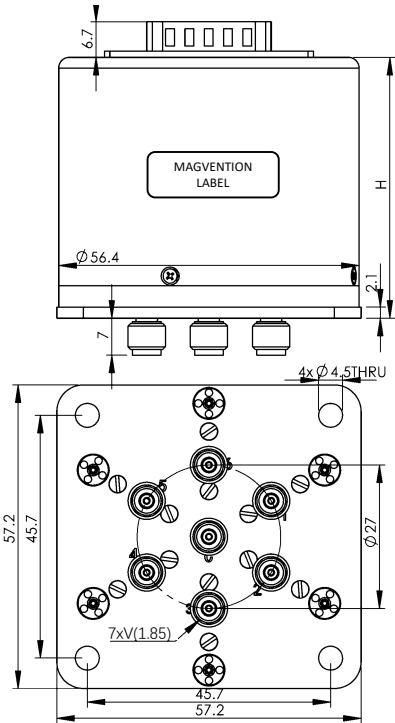


Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	240g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	300	220	167	160
	Latching (set)	350	240	180	160

For LATCHING, I(reset) = n x I(set).

Other options are available upon request.



MCF3-,1P3T SWITCH
MCF4-,1P4T SWITCH
MCF5-,1P5T SWITCH
MCF6-,1P6T SWITCH

1PnT PORT CONFIGURATIONS						
1PnT	Ports Used					
1P6T	1	2	3	4	5	6
1P5T	1	2	3	4	5	
1P4T	1	2		4	5	
1P3T	1		3		5	

Note: "Blank" represents the unused RF and corresponding control ports.

	H	Solder Pin	DSUB
Standard		49.1	49.1
TTL		49.1	61.1
Indicator		49.1	61.1

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-18	1.4	0.5	90
18-35	1.9	0.8	80
35-45	2.2	1.2	70
45-55	2.3	1.3	60
55-67	2.4	1.8	50

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	+ΔVn (Jn-COM)
7	COM(-)
8	+ΔVR (Reset ALL OPEN)
9-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8	AR (Reset ALL OPEN)
9-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	Vn (Jn-COM)
7	COM(-)
8-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-6	An (Jn-COM)
7	COM(-)
8-14	UNUSED
15	+VDC

Pin 1-6: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

OPTIONAL INDICATOR	
Pin No.	PINOUT
8	1 (IND: J1-C)
9	2 (IND: J2-C)
10	3 (IND: J3-C)
11	4 (IND: J4-C)
12	5 (IND: J5-C)
13	6 (IND: J6-C)
14	COM_I
15	+VDCI

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

MC9n: n=7-8 (e.g., n=8 for 1P8T)

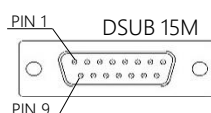
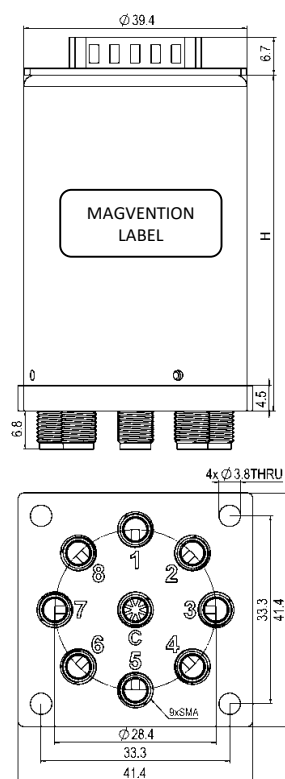
The **MC9** series features SMA connectors and an operation frequency range of DC to 18 GHz. Higher frequency ranges are available. This product is of normally-open type with a compact design. The product options include TTL, suppression diodes, indicators, etc.

Specifications

Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C
	-55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	185g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	290	190	150	130

Other options are available upon request.



MC97-,1P7T SWITCH
MC98-,1P8T SWITCH

1PnT PORT CONFIGURATIONS

1PnT	Ports Used							
1P8T	1	2	3	4	5	6	7	8
1P7T	1	2	3	4	5	6	7	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	57.1	60.5
TTI	57.1	70.5

Mechanical drawings (unit: mm, tolerance $\pm 0.5\text{mm}$).

NORMALLY OPEN



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-4	1.2	0.2	75
4-8	1.3	0.3	65
8-12.4	1.4	0.4	60
12.4-18	1.6	0.6	60

Higher frequency ranges are available upon request.

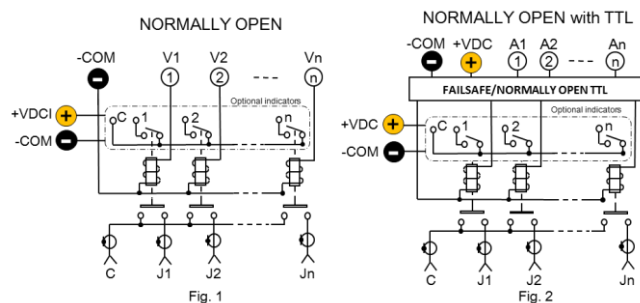
**NORMALLY OPEN
15-PIN D-SUB PINOUT**

Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN
TTL
15-PIN D-SUB PINOUT

Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.



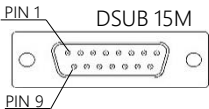
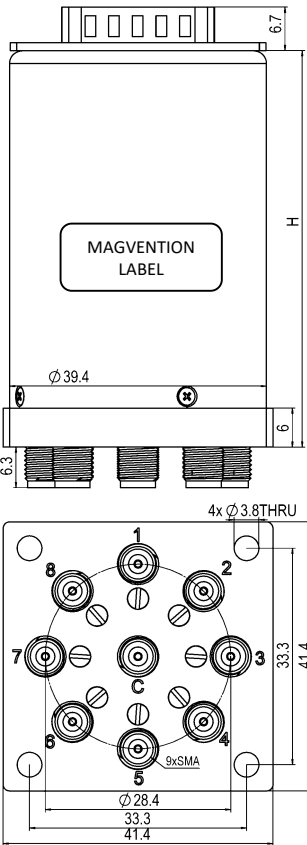
MC9n: n=7-8 (e.g., n=8 for 1P8T)

NORMALLY OPEN

The MC9-K40 Series features K connectors and an operation frequency range of DC to 40 GHz. This series is of normally open type. Options include TTL, coil suppression diodes, indicators etc. The product is typically supplied with a 15-pin male D-sub control interface.

Specifications					
Contact Material		Plated Au			
Switching Sequence		Break before Make			
Switching Time (max)		15msec			
Impedance		50Ω			
Temperature Range		-25°C to +65°C			
		-55°C to +85°C ("e" option)			
Relative Humidity		5 to 85%			
Operation Life (cycles)		2000000			
Vibration Operating		10G RMS, 20-2000Hz			
Mechanical Shock (non-operating)		50G, 1/2 Sine, 11msec			
Weight (approx.)		185g			
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	290	190	150	130

Other options are available upon request.



MC97-,1P7T SWITCH
MC98-,1P8T SWITCH

1PnT PORT CONFIGURATIONS								
1PnT	Ports Used							
1P8T	1	2	3	4	5	6	7	8
1P7T	1	2	3	4	5	6	7	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	58.8	62.2
TTL	58.8	72.2



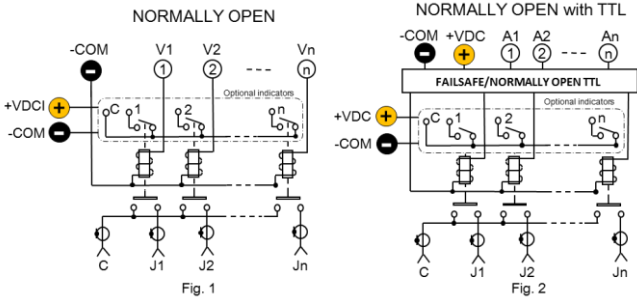
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	60
12-26.5	1.7	0.7	55
26.5-40	2.0	1.2	50

Higher frequency ranges are available upon request.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.



The MC9 series features SMA connectors and an operation frequency range of DC to 18 GHz. Higher frequency ranges are available. This product is of normally-open type with a compact design. The product options include TTL, suppression diodes, indicators, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C
Relative Humidity	5 to 85%
Operation Life (cycles)	2000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	300 g

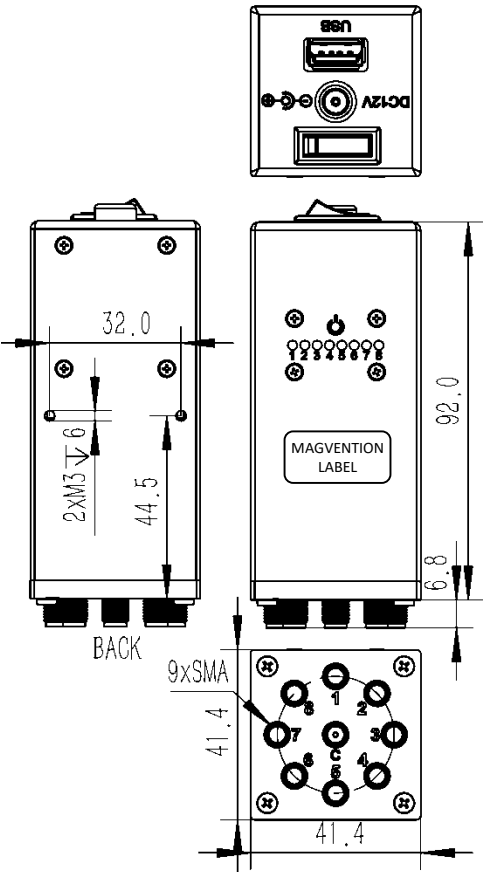


Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	290			

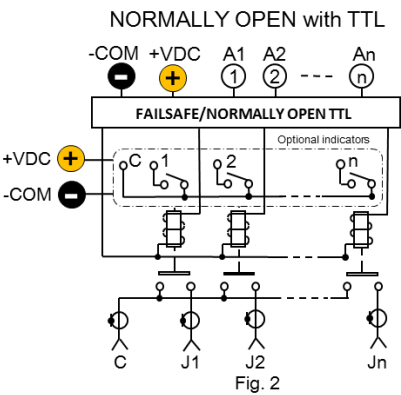
Other options are available upon request.

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-4	1.2	0.2	75
4-8	1.3	0.3	65
8-12.4	1.4	0.4	60
12.4-18	1.6	0.6	60

Higher frequency ranges are available upon request.



USB controlled



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC8nT: $n=7-8$ (e.g., $n=8$ for 1P8T)

NORMALLY OPEN
or LATCHING

The **MC8n1-S18** product features SMA connectors and an operation frequency range of DC to 18 GHz. This product can be of normally-open or latching type with internal self-terminations. The options include TTL, SELF CUTOFF, indicators, and suppression diodes etc. The product is typically provided with a 15-pin male D-sub connector as the control interface.



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.4	0.4	70
12-18	1.5	0.5	60

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	285g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	330	220	167	140
	Latching (set)	290	225	150	120

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

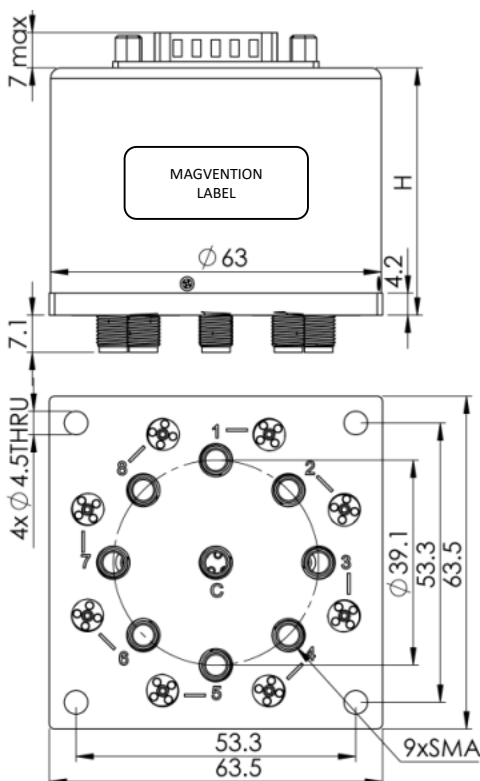
NORMALLY OPEN with TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	+ΔVn (Jn-COM)
9	COM(-)
10	+ΔVR (Reset ALL OPEN)
11-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10	AR (Reset ALL OPEN)
11-14	UNUSED
15	+VDC

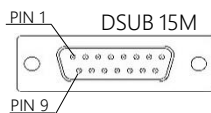
LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC



For LATCHING,
 $I(\text{reset}) = n \times I(\text{set})$.

Other options are available upon request.



MC88-.1P8T SWITCH
MC87-.1P7T SWITCH

1PnT PORT CONFIGURATIONS								
1PnT	Ports Used							
1P8T	1	2	3	4	5	6	7	8
1P7T	1	2	3	4	5	6	7	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	47.2	47.2
TTL	47.2	54.2
Indicator	47.2	64.2

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

Pin 1-8: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

For options with INDICAOTRS, a 26PIN DSUB connector will be provided. Contact factory for the corresponding pin outs.

The MC8nT-K40 product features K(2.92mm) connectors and an operation frequency range of DC to 40 GHz. This product can be of normally-open or latching type with internal self-terminations. The options include TTL, SELF CUTOFF, indicators, and suppression diodes etc. The product is typically provided with a 15-pin male D-sub connector as the control interface.

NORMALLY OPEN
or LATCHING

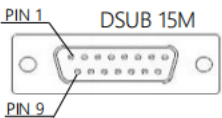
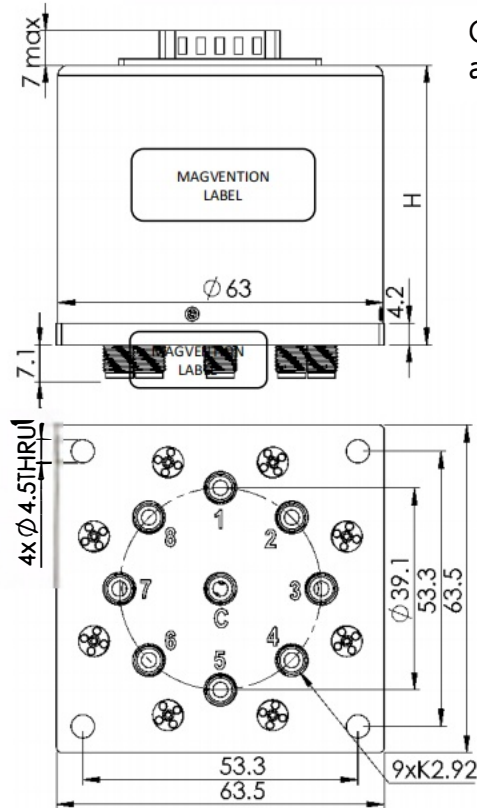


Specifications					
Contact Material		Plated Au			
Switching Sequence		Break before Make			
Switching Time (max)		15msec			
Impedance		50Ω			
Temperature Range		-25°C to +65°C			
		-55°C to +85°C ("e" option)			
Relative Humidity		5 to 85%			
Operation Life (cycles)		3000000			
Vibration Operating		10G RMS, 20-2000Hz			
Mechanical Shock (non-operating)		50G, 1/2 Sine, 11msec			
Neight (approx.)		285g			
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	330	220	167	140
	Latching (set)	290	225	150	120

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	80
6-12	1.4	0.4	60
12-26.5	1.8	0.8	55
26.5-35	2.0	1.0	50
35-40	2.2	1.5	50

For LATCHING, I(reset) = n x I(set).

Other options are available upon request.



MC88-,1P8T SWITCH
MC87-,1P7T SWITCH

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P8T	1 2 3 4 5 6 7 8
1P7T	1 2 3 4 5 6 7
Note: "Blank" represents the unused RF and corresponding control ports	

H	Solder Pin	DSUB
Standard	47.2	47.2
TTL	47.2	54.2
Indicator	47.2	64.2

Mechanical drawings (unit mm, tolerance +/-0.5mm)

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN with TL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	+ΔVn (Jn-COM)
9	COM(-)
10	+ΔVR (Reset ALL OPEN)
11-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10	AR (Reset ALL OPEN)
11-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-8: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

For options with INDICAOTRS, a 26PIN DSUB connector will be provided. Contact factory for the corresponding pin outs.

MC88Th-K40

-U

1P8T, Terminated, K(2.92mm), DC-40GHz

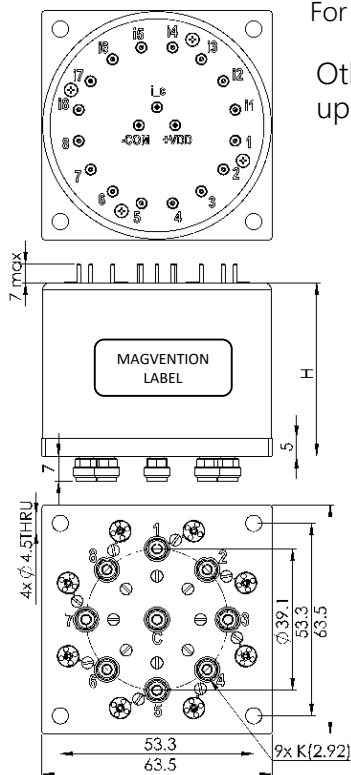
hi-performance, high repeatability: 0.03dB (Insertion loss)

NORMALLY OPEN
or LATCHING

The MC8nTh-K40 product features K(2.92mm) connectors and an operation frequency range of DC to 40 GHz. This product can be of normally-open or latching type with internal self-terminations. The options include TTL, SELF CUTOFF, indicators, and suppression diodes etc. The product is typically provided with a 15-pin male D-sub connector as the control interface.

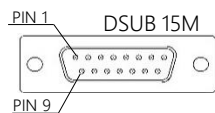
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	285g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	330	220	167	140
	Latching (set)	290	225	150	120



For LATCHING, I(reset) = n x I(set).

Other options are available upon request.



MC88-,1P8T SWITCH
MC87-,1P7T SWITCH

1PnT PORT CONFIGURATIONS								
1PnT	Ports Used							
1P8T	1	2	3	4	5	6	7	8
1P7T	1	2	3	4	5	6	7	

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	48	48
TTL	48	55
Indicator	48	65



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	80
6-12	1.4	0.4	60
12-26.5	1.8	0.8	55
26.5-40	2.0	1.4	50

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN with TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	+ΔVn (Jn-COM)
9	COM(-)
10	+ΔVR (Reset ALL OPEN)
11-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10	AR (Reset ALL OPEN)
11-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-8: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

For options with INDICAOTRS, a 26PIN DSUB connector will be provided. Contact factory for the corresponding pin outs.

MCHn: n=7-8 (e.g., n=8 for 1P8T)

NORMALLY OPEN

The MCHn- series features 1P8T with N connectors and an operation frequency range from DC to 8 GHz. This product is of NORMALLY OPEN type. The options include TTL and coil suppression diodes etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	630g

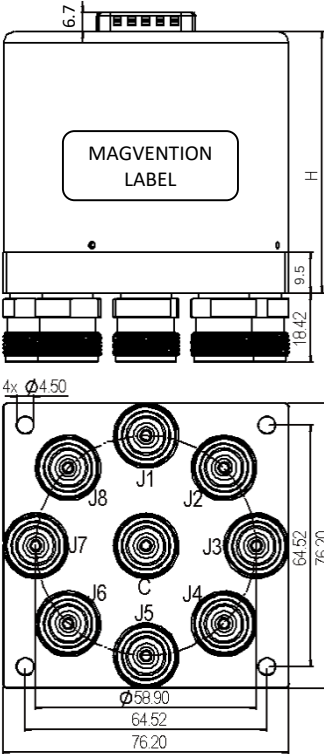
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	230	160	140	120

Other options are available upon request.



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.3	0.3	70
3-4	1.4	0.4	60
4-8	1.5	0.5	50

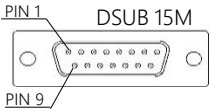
Higher frequency ranges are available upon request.



MCH8-,1P8T SWITCH
MCH7-,1P7T SWITCH

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P8T	1 2 3 4 5 6 7 8
1P7T	1 2 3 4 5 6 7

Note: "Blank" represents the unused RF and corresponding control ports.

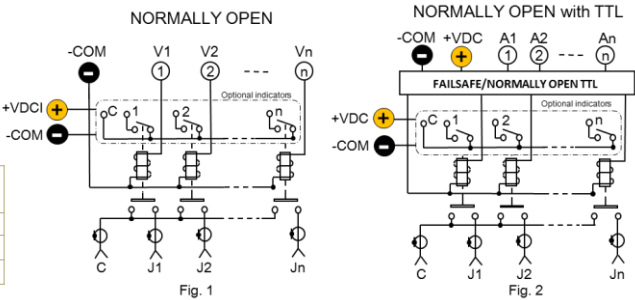


H	Solder Pin	DSUB
Standard	67.5	67.5
TTL	67.5	77.5
Indicator		77.5

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN With TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-8: The corresponding control signal inputs.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCHnp: n=7-8 (e.g., n=8 for 1P8T)

NORMALLY OPEN

The **MCHnp-** series features 1P8T with N (high power) connectors and an operation frequency range from DC to 8 GHz. This product is of NORMALLY OPEN type. The options include TTL and coil suppression diodes etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	630g

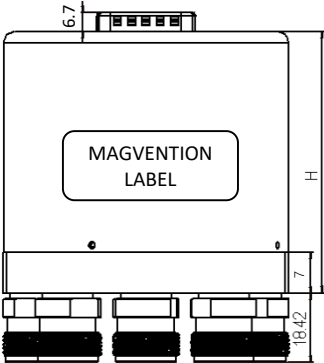
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	230	160	140	120

Other options are available upon request.



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.3	0.3	70
3-4	1.4	0.4	60
4-8	1.5	0.5	50

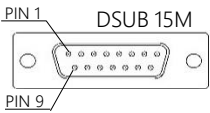
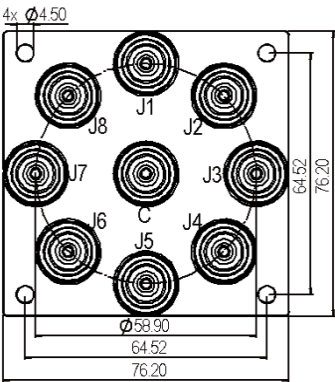
Higher frequency ranges are available upon request.



MCH8-,1P8T SWITCH
MCH7-,1P7T SWITCH

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P8T	1 2 3 4 5 6 7 8
1P7T	1 2 3 4 5 6 7

Note: "Blank" represents the unused RF and corresponding control ports.

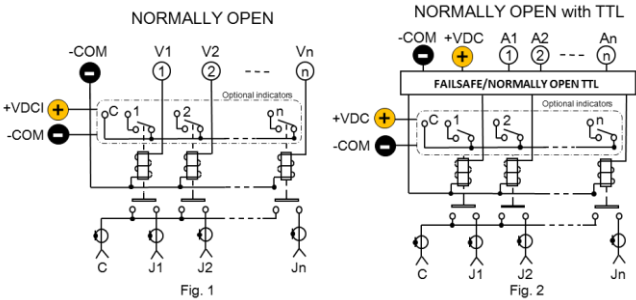


H	Solder Pin	DSUB
Standard	65	65
TTL	65	75
Indicator		75

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN With TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-8: The corresponding control signal inputs.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCHn: n=7-8 (e.g., n=8 for 1P8T)

NORMALLY OPEN

The MCHn- series features 1P8T with SC connectors and an operation frequency range from DC to 8 GHz. This product is of NORMALLY OPEN type. The options include TTL and coil suppression diodes etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	630g

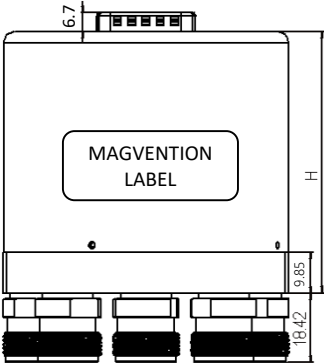
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	230	160	140	120

Other options are available upon request.



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.3	0.3	70
3-4	1.4	0.4	60
4-8	1.5	0.5	50

Higher frequency ranges are available upon request.



MCH8-,1P8T SWITCH
MCH7-,1P7T SWITCH

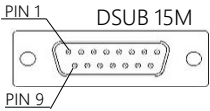
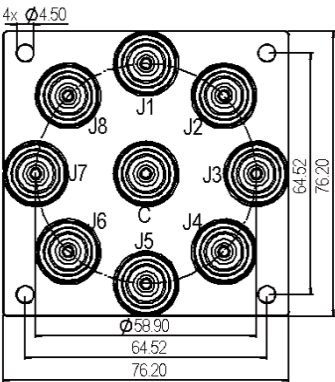
1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P8T	1 2 3 4 5 6 7 8
1P7T	1 2 3 4 5 6 7

Note: "Blank" represents the unused RF and corresponding control ports.

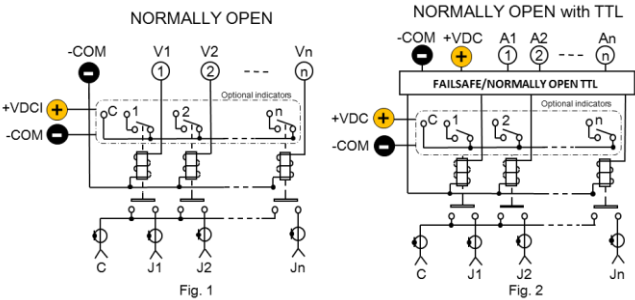
NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	Vn (Jn-COM)
9	COM(-)
10-15	UNUSED

NORMALLY OPEN With TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-8	An (Jn-COM)
9	COM(-)
10-14	UNUSED
15	+VDC

Pin 1-8: The corresponding control signal inputs.



H	Solder Pin	DSUB
Standard	67.9	67.9
TTL	67.9	77.9
Indicator		77.9



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCJn: n=8-10 (e.g., n=10 for 1P10T)

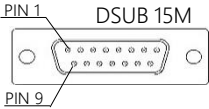
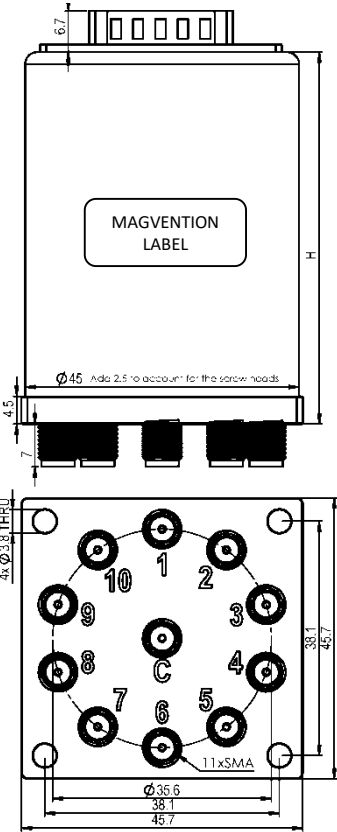
NORMALLY OPEN

The MCJ10 series features SMA connectors and an operation frequency range of DC to 18 GHz. Higher frequency ranges are available. This product is of NORMALLY OPEN type with a compact design. The product options include TTL, suppression diodes, indicators, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	225g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	260	160	140	100

Other options are available upon request.



1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P10T	1 2 3 4 5 6 7 8 9 10
1P9T	1 2 3 4 5 6 7 8 9
1P8T	2 3 4 5 7 8 9 10

Note: "Blank" represents the unused RF and corresponding control ports.

MCJ8-,1P8T SWITCH
MCJ9-,1P9T SWITCH
MCJ10-,1P10T SWITCH

H	Solder Pin	DSUB
Standard	54.5	60.5
TTL	54.5	70.5
Indicator		



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-4	1.2	0.2	70
4-8	1.3	0.3	65
8-12	1.4	0.4	60
12-18	1.6	0.6	55

Optional Indicator Specifications

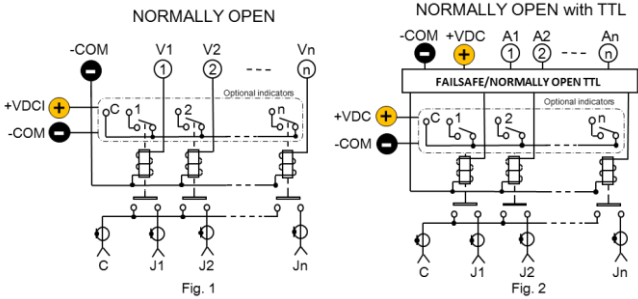
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	Vn (Jn-COM)
11	COM(-)
12-15	UNUSED

NORMALLY OPEN with TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12-14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCJn: n=7-10 (e.g., n=10 for 1P10T)

NORMALLY OPEN

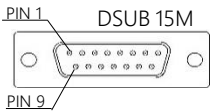
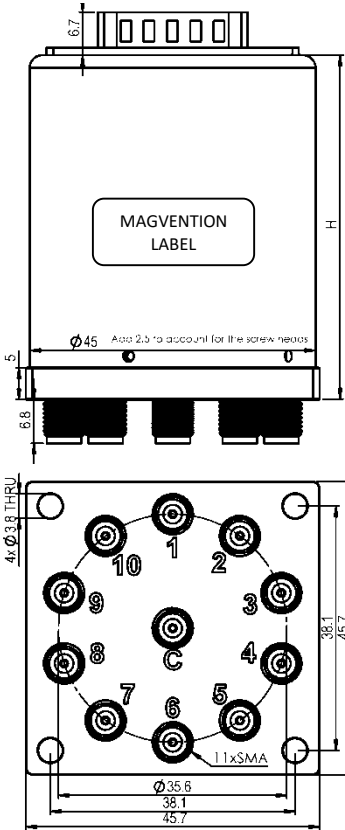
The MCJ10-K26 series features K connectors and an operation frequency range of DC to 26.5 GHz. Higher frequency ranges are available. This product is of NORMALLY OPEN type with a compact design. The product options include TTL, suppression diodes, indicators, etc.

Specifications					
Contact Material		Plated Au			
Switching Sequence		Break before Make			
Switching Time (max)		15msec			
Impedance		50Ω			
Temperature Range		-25°C to +65°C			
		-55°C to +85°C ("e" option)			
Relative Humidity		5 to 85%			
Operation Life (cycles)		2000000			
Vibration Operating		10G RMS, 20-2000Hz			
Mechanical Shock (non-operating)		50G, 1/2 Sine, 11msec			
Weight (approx.)		225g			
Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	260	160	140	100



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.3	0.3	85
3-10	1.4	0.4	80
10-18	1.6	0.6	60
18-26.5	1.8	0.8	60

Other options are available upon request.



1PnT PORT CONFIGURATIONS										
1PnT	Ports Used									
1P10T	1	2	3	4	5	6	7	8	9	10
1P9T	1	2	3	4	5	6	7	8	9	
1P8T		2	3	4	5		7	8	9	10
1P7T	1	2		4	5		7	8		10

Note: "Blank" represents the unused RF and corresponding control ports.

- MCJ7-,1P7T SWITCH
- MCJ8-,1P8T SWITCH
- MCJ9-,1P9T SWITCH
- MCJ10-,1P10T SWITCH

Height H Table.

H	Solder Pin	DSUB
Standard	55	61
TTL	55	71
Indicator		

Optional Indicator Specifications

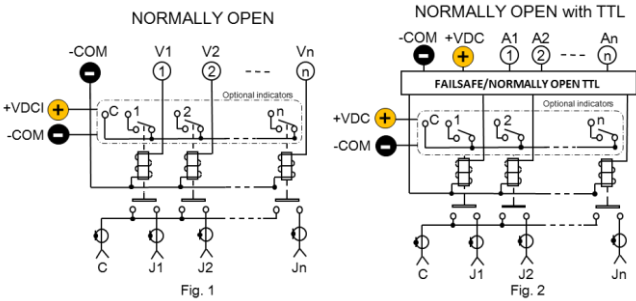
Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	Vn (Jn-COM)
11	COM(-)
12-15	UNUSED

NORMALLY OPEN with TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12-14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC010T-S18

1P10T, Terminated, SMA, DC-18GHz

MC0nT: n=9-10 (e.g., n=10 for 1P10T)

NORMALLY OPEN
or LATCHING

The MC0nT-S18 product features SMA connectors and an operation frequency range of DC to 18 GHz. This product can be of normally-open or latching type with internal self-terminations. The options include TTL, SELF CUTOFF, and suppression diodes, etc.

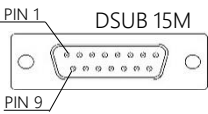
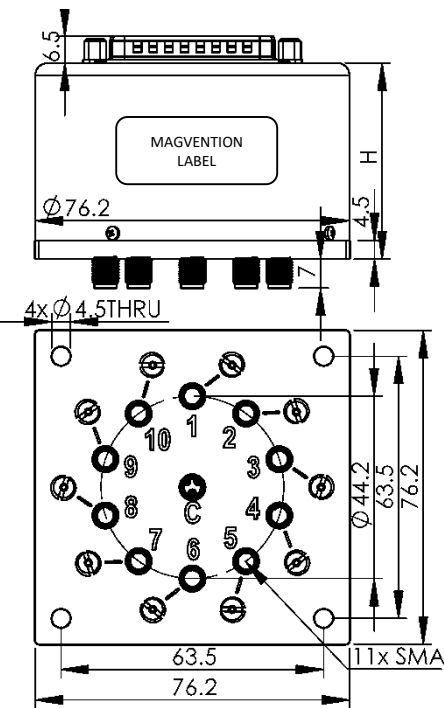
Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	380g

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	330	220	167	140
	Latching (set)	290	225	150	120



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	80
6-12	1.4	0.4	70
12-18	1.6	0.8	60

NOTE: For LATCHING, I(reset) = n x I(set).
Other options are available upon request.



MC010-,1P10T SWITCH
MC09-,1P9T SWITCH

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P10T	1 2 3 4 5 6 7 8 9 10
1P9T	1 2 3 4 5 6 7 8 9

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	47.5	47.5
TTL	47.5	54.5
Indicator		

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	Vn (Jn-COM)
11	COM(-)
12-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	+ΔVn (Jn-COM)
11	COM(-)
12	+ΔVR (Reset ALL OPEN)
13-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12	AR (Reset ALL OPEN)
13-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	Vn (Jn-COM)
11	COM(-)
12-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12-14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

For options with INDICAOTRS, a 26PIN DSUB connector will be provided. Contact factory for the corresponding pin outs.

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MC0nT: n=9-10 (e.g., n=10 for 1P10T)

NORMALLY OPEN
or LATCHING

The MC0nT-K26 product features K connectors and an operation frequency range of DC to 26.5 GHz. This product can be of normally-open or latching type with internal self-terminations. The options include TTL, SELF CUTOFF, and suppression diodes, etc.

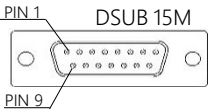
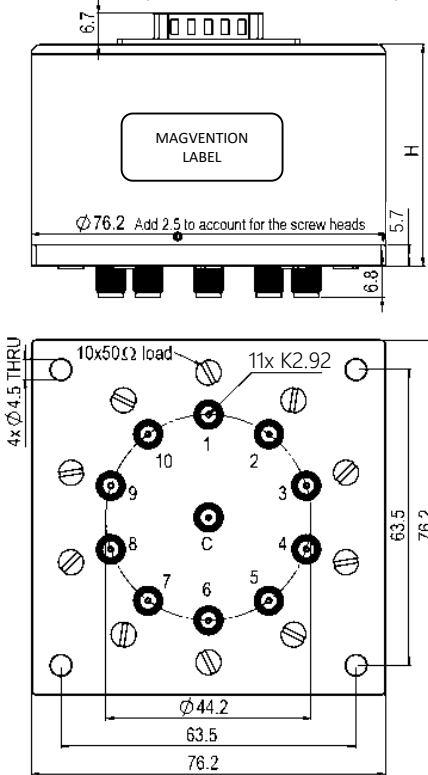


Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	3000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	380g

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	80
6-12	1.4	0.4	70
12-18	1.6	0.8	60
18-26.5	1.9	0.9	50

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	330	220	167	140
	Latching (set)	290	225	150	120

NOTE: For LATCHING, I(reset) = n x I(set).
Other options are available upon request.



MC010-,1P10T SWITCH
MC09-,1P9T SWITCH

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	Vn (Jn-COM)
11	COM(-)
12-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	+ΔVn (Jn-COM)
11	COM(-)
12	+ΔVR (Reset ALL OPEN)
13-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12	AR (Reset ALL OPEN)
13-14	UNUSED
15	+VDC

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P10T	1 2 3 4 5 6 7 8 9 10
1P9T	1 2 3 4 5 6 7 8 9
Note: "Blank" represents the unused RF and corresponding control ports.	

H	Solder Pin	DSUB
Standard	48.7	48.7
TTL	48.7	55.7
Indicator	48.7	55.7

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	Vn (Jn-COM)
11	COM(-)
12-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
11	COM(-)
12-14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

For options with INDICAOTRS, a 26PIN DSUB connector will be provided. Contact factory for the corresponding pin outs.

MCLn: n=11-12 (e.g., n=12 for 1P12T)

NORMALLY OPEN

The **MCL12** product features SMA connectors and an operation frequency range of DC to 16 GHz. Higher frequency ranges are available. This product is of normally-open type with a compact design. The product options include TTL, suppression diodes, indicators, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	280g

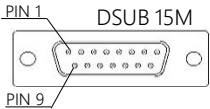
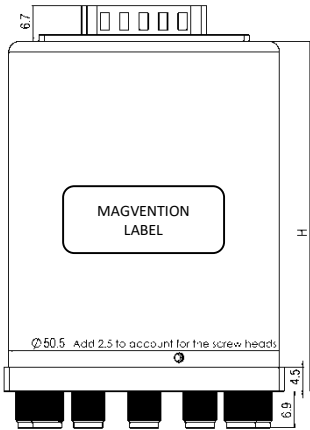
Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-4	1.2	0.2	70
4-8	1.4	0.4	65
8-12.4	1.5	0.6	60
12.4-16	1.6	0.6	60

Higher frequency ranges are available upon request.

Other options are available upon request.



MCL11-,1P11T SWITCH
MCL12-,1P12T SWITCH

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	Vn (Jn-COM)
13	COM(-)
14-15	UNUSED

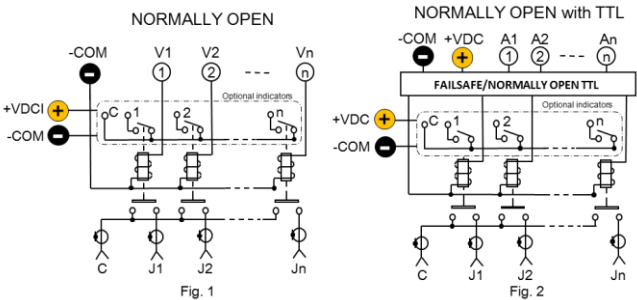
NORMALLY OPEN with TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	An (Jn-COM)
13	COM(-)
14	UNUSED
15	+VDC

Pin 1-10: The corresponding control signal inputs.

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P12T	1 2 3 4 5 6 7 8 9 10 11 12
1P11T	1 2 3 4 5 6 7 8 9 10 11

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	54.5	60.5
TTL	54.5	70.5
Indicator		70.5



Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCMnT: n=11-12 (e.g., n=12 for 1P12T)

NORMALLY OPEN
or LATCHING

The **MCMnT-S18** product features SMA connectors and an operation frequency range of DC to 18 GHz. This product can be of normally-open or latching type with internal self-terminations. The options include TTL, SELF CUTOFF, and suppression diodes, etc.

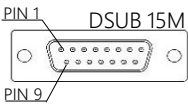
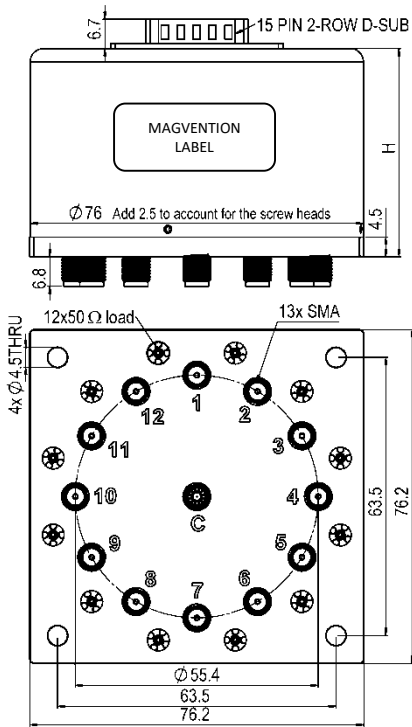
Specifications				
Contact Material		Plated Au		
Switching Sequence		Break before Make		
Switching Time (max)		15msec		
Impedance		50Ω		
Temperature Range		-25°C to +65°C		
		-55°C to +85°C ("e" option)		
Relative Humidity		5 to 85%		
Operation Life (cycles)		3000000		
Vibration Operating		10G RMS, 20-2000Hz		
Mechanical Shock (non-operating)		50G, 1/2 Sine, 11msec		
Weight (approx.)		380g		

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	330	220	167	140
	Latching (set)	290	225	150	120



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	70
6-12	1.5	0.6	60
12-18	1.8	0.8	60

NOTE: For LATCHING, I(reset) = n x I(set).
Other options are available upon request.



MCM11-,1P11T SWITCH
MCM12-,1P12T SWITCH

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P12T	1 2 3 4 5 6 7 8 9 10 11 12
1P11T	1 2 3 4 5 6 7 8 9 10 11

Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard	47.5	47.5
TTL	47.5	54.5
Indicator	47.5	59.5

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	Vn (Jn-COM)
13	COM(-)
12-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	An (Jn-COM)
13	COM(-)
14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	+ΔVn (Jn-COM)
13	COM(-)
14	+ΔVR (Reset ALL OPEN)
15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-10	An (Jn-COM)
13	COM(-)
14	AR (Reset ALL OPEN)
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	Vn (Jn-COM)
13	COM(-)
14-15	UNUSED
15	+VDC

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	An (Jn-COM)
13	COM(-)
14	UNUSED
15	+VDC

Pin 1-12: The corresponding control signal inputs.

Note: For the SELF CUTOFF, a "RESET ALL" option is available upon request.

For options with INDICAOTRS, a 26PIN DSUB connector will be provided. Contact factory for the corresponding pin outs.

Mechanical drawings (unit: mm, tolerance +/-0.5mm).

MCGn: n=9-12 (e.g., n=12 for 1P12T)

NORMALLY OPEN

The **MCG12-N** product features 1P12T with N-type connectors and an operation frequency range from DC to 1 GHz. This product is of normally-open type. The options include TTL, suppression diodes, indicators, and low PIM. The product typically comes with a DB15M socket.



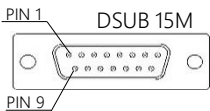
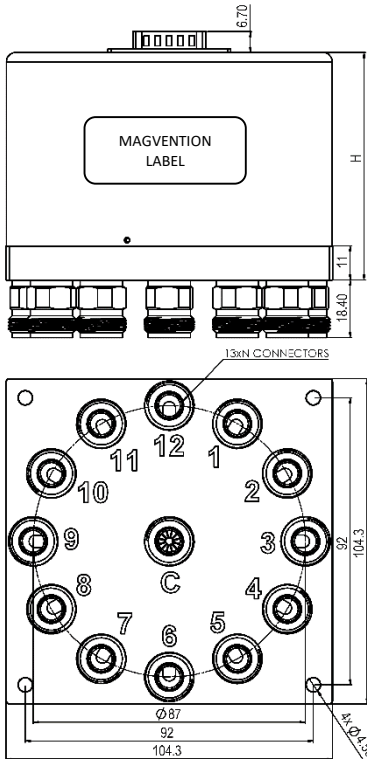
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-1	1.2	0.20	70

Higher frequency ranges are available upon request.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C
	-55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	

Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	120	90	95	60

Other options are available upon request.



MCG12-,1P12T SWITCH
MCG11-,1P11T SWITCH
MCG10-,1P10T SWITCH
MCG9-,1P9T SWITCH

1PnT PORT CONFIGURATIONS												
1PnT	Ports Used											
1P12T	1	2	3	4	5	6	7	8	9	10	11	12
1P11T	1	2	3	4	5	6	7	8	9	10	11	
1P10T	1	2	3		5	6	7	8	9		11	12
1P9T	1	2	3		5	6	7		9	10	11	

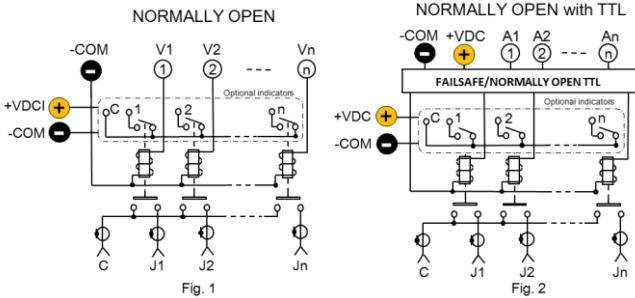
Note: "Blank" represents the unused RF and corresponding control ports.

H	Solder Pin	DSUB
Standard		73
TTL		83
Indicator		

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	Vn (Jn-COM)
13	COM(-)
14-15	UNUSED

NORMALLY OPEN with TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-12	An (Jn-COM)
13	COM(-)
14	UNUSED
15	+VDC

Pin 1-12: The corresponding control signal inputs.



MCRn: n=13-18 (e.g., n=18 for 1P18T)

NORMALLY OPEN

The **MCR18** product features SMA connectors and an operation frequency range of DC to 3 GHz. Higher frequency ranges are available. This product is of normally-open type with a compact design. The product options include TTL, BCD, suppression diodes, indicators, etc.

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C
	-55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	2000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	450g

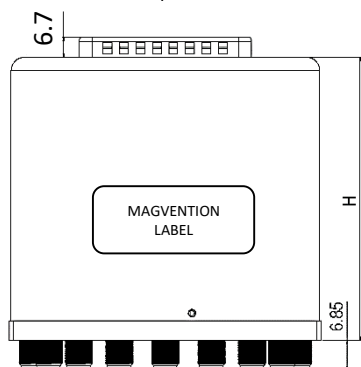
Voltage (VDC)		12	18	24	28
Current (mA)	NORMALLY OPEN	290	190	150	140



Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-1	1.15	0.15	90
1-3	1.30	0.30	80

Other options are available upon request.

Higher frequency ranges are available upon request.

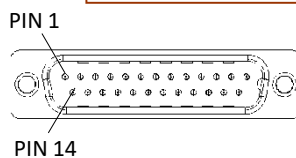


1PnT PORT CONFIGURATIONS																			
1PnT	Ports Used																		
1P18T	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1P17T	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
1P16T	1	2	3	4	5	6	7	8		10	11	12	13	14	15	16	17		
1P15T	1	2	3	4	5		7	8	9	10	11		13	14	15	16	17		
1P14T	1	2	3		5	6	7	8		10	11	12	13		15	16	17		
1P13T	1	2		4	5	6		8	9	10		12	13	14		16	17		
Note: "Blank" represents the unused RF and corresponding control ports.																			

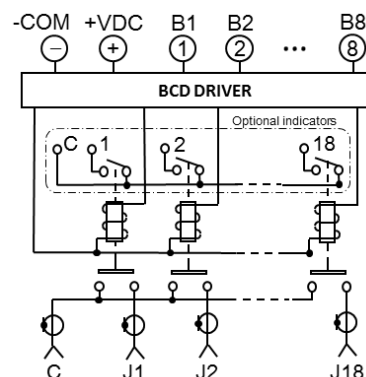
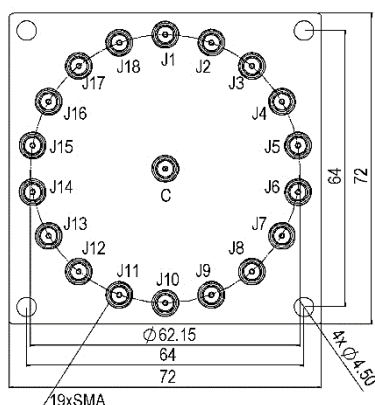
Note: "Blank" represents the unused RF and corresponding control ports.

25-PIN D-SUB PINOUT	
Pin No.	PINOUT
1	B1
2	B2
3	B3
4	B4
5	B5
6	B6
7	B7
8	B8
9	COM(-)
10-24	UNUSED
25	+VDC

A 2-row 25-pin D-sub male connector will be provided.



A BCD DRIVING
INTERFACE WILL BE
PROVIDED FOR THE "-5"
OPTION.

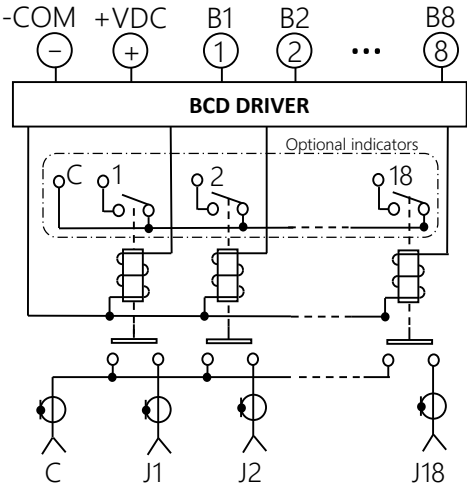

$$H = 70.5$$

Mechanical drawings (unit: mm, tolerance $\pm 0.5\text{mm}$).

HIGH LOGIC BCD TRUTH TABLE								
B8	B7	B6	B5	B4	B3	B2	B1	Position Activated
1	1	1	1	0	0	0	0	1
1	1	1	1	0	0	0	1	2
1	1	1	1	0	0	1	0	3
1	1	1	1	0	0	1	1	4
1	1	1	1	0	1	0	0	5
1	1	1	1	0	1	0	1	6
1	1	1	1	0	1	1	0	7
1	1	1	1	0	1	1	1	8
1	1	1	1	1	0	0	0	9
0	0	0	0	1	1	1	1	10
0	0	0	1	1	1	1	1	11
0	0	1	0	1	1	1	1	12
0	0	1	1	1	1	1	1	13
0	1	0	0	1	1	1	1	14
0	1	0	1	1	1	1	1	15
0	1	1	0	1	1	1	1	16
0	1	1	1	1	1	1	1	17
1	0	0	0	1	1	1	1	18
1	1	1	1	1	1	1	1	None
Open	Open	Open	Open	Open	Open	Open	Open	None

NOTE: Logic input B(n): low "0" = 0.0V – 1.5V(max); high "1" = 3.5V(min) – 5.5V.

NOTE: All BCD inputs shown in the Pin-Out Table must be controlled. Switch will not function if any BCD inputs are floating.



MCA4-C05

MCA_n: n=3-4 (e.g., n=4 for 1P4T)

The MCA4-C05 product features SC connectors and an operation frequency range of DC to 5 GHz. This product can be of normally-open or latching type. The options include TTL, SELF CUTOFF, and suppression diodes, etc.

1P4T, SC, DC-5GHz

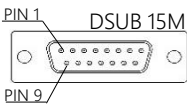
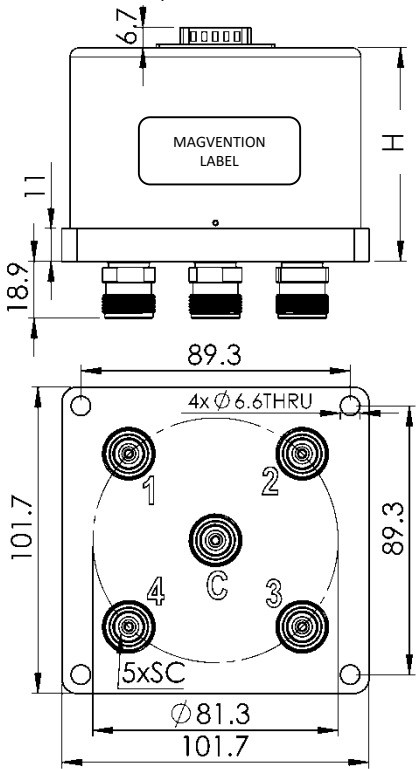
NORMALLY OPEN or LATCHING



Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	20msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -55°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	

Voltage (VDC)		12	18	24	28
Current (mA)	Normally Open	310	250	170	130
	Latching (set)	380	300	210	180

Other options are available upon request.



MCA4-1P4T SWITCH
MCA3-1P3T SWITCH

1PnT PORT CONFIGURATIONS	
1PnT	Ports Used
1P4T	1 2 3 4
1P3T	1 2 3

Note: "Blank" represents the unused RF and corresponding control ports.

H = 71 (max)

Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-3	1.3	0.3	70
3-5	1.5	0.5	60

OPTIONAL INDICATOR	
Pin No.	PINOUT
7	1 (IND: J1-C)
8	2 (IND: J2-C)
9	3 (IND: J3-C)
10	4 (IND: J4-C)
11	COM-I
15	+VDCI

Optional Indicator Specifications	
Max withstand voltage: 60V	
Max current capacity: 100mA	
Max "ON" resistance: 16Ω	
Note: +VDC and -C must be connected to operate.	

NORMALLY OPEN 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-4	Vn (Jn-COM)
5	COM(-)
6-15	UNUSED

NORMALLY OPEN TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-4	An (Jn-COM)
5	COM(-)
6-14	UNUSED
15	+VDC

LATCHING (PULSE) 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-4	+ΔVn (Jn-COM)
5	COM(-)
6	+ΔVR (Reset ALL OPEN)
7-15	UNUSED

LATCHING TTL 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-4	An (Jn-COM)
5	COM(-)
6	AR (Reset ALL OPEN)
7-14	UNUSED
15	+VDC

LATCHING SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-4	Vn (Jn-COM)
5	COM(-)
6-15	UNUSED

LATCHING TTL&SELF CUTOFF 15-PIN D-SUB PINOUT	
Pin No.	PINOUT
n=1-4	An (Jn-COM)
5	COM(-)
6-14	UNUSED
15	+VDC

Pin 1-4: The corresponding control signal inputs.

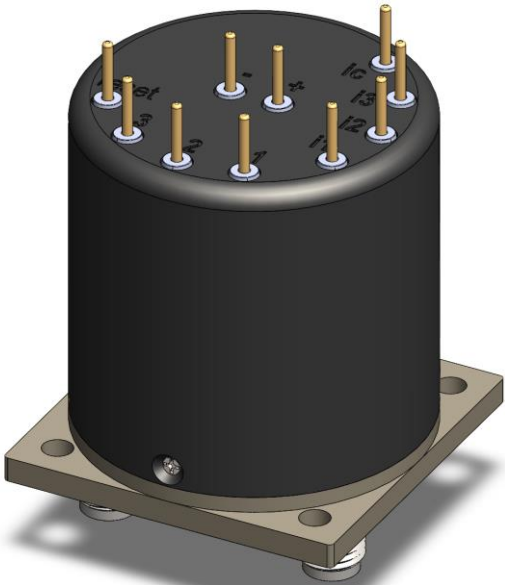
Mechanical drawings (unit: mm, tolerance +/-0.5mm).

Specifications	
Contact Material	Plated Au
Switching Sequence	Break before Make
Switching Time (max)	15msec
Impedance	50Ω
Temperature Range	-25°C to +65°C -45°C to +85°C ("e" option)
Relative Humidity	5 to 85%
Operation Life (cycles)	1000000
Vibration Operating	10G RMS, 20-2000Hz
Mechanical Shock (non-operating)	50G, 1/2 Sine, 11msec
Weight (approx.)	

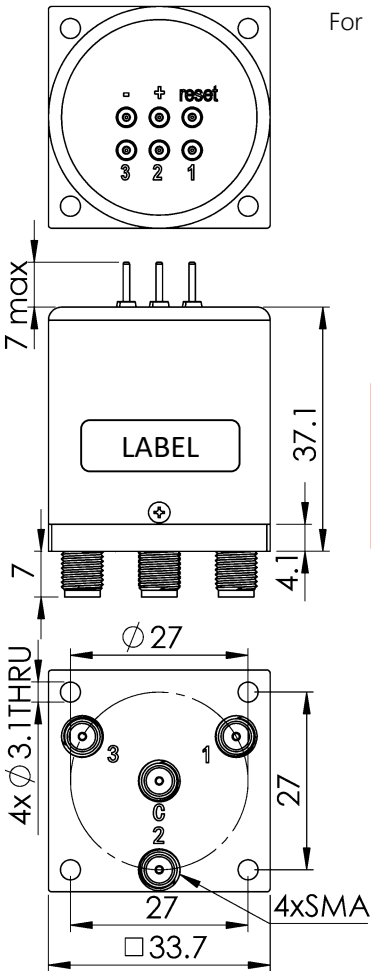
Frequency Range (GHz)	VSWR (max)	Insertion Loss (dB) (max)	Isolation (dB) (min)
DC-6	1.3	0.3	80
6-12	1.4	0.4	70
12-18	1.5	0.5	60

Compact design

LATCHING



Voltage (VDC)					28
Current (mA)	Latching				160



For LATCHING, I(reset) = n x I(set).

Optional Indicator Specifications

Max withstand voltage: 60V
Max current capacity: 100mA
Max "ON" resistance: 16Ω

Note: +VDC and -C must be connected to operate.

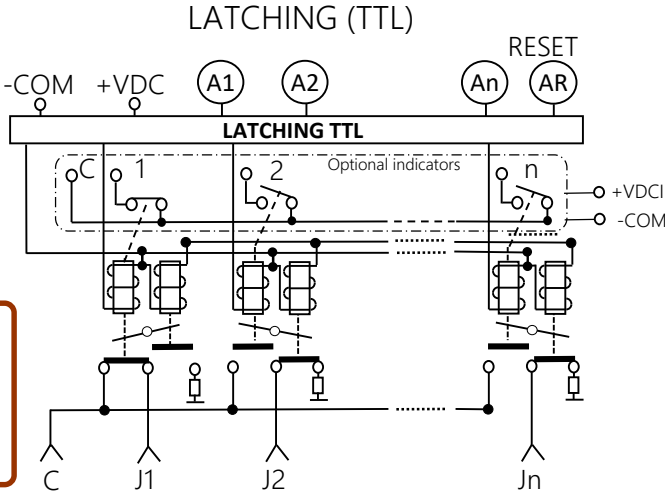


Fig. 2

TRUTH TABLE LATCHING with TTL (Fig. 2)

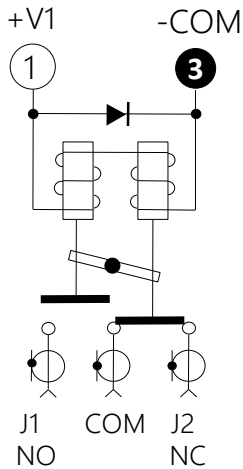
RF PATH	A(n)	AR
J(n) - C	1	0
ALL J(n) - Open	0	1

- NOTE:
- 1) TTL logic input A(n): low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.
 - 2) A pulse input is expected. Prolonged high inputs may generate excessive heat and damage the switch.

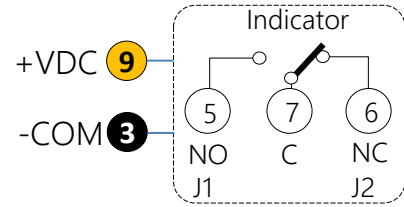
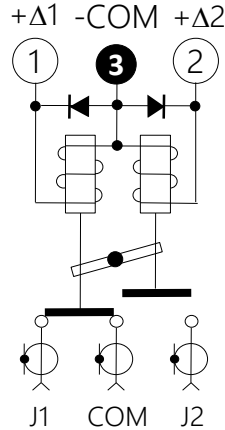
Mechanical drawings (unit: mm, tolerance +/-0.5mm).

SP2T

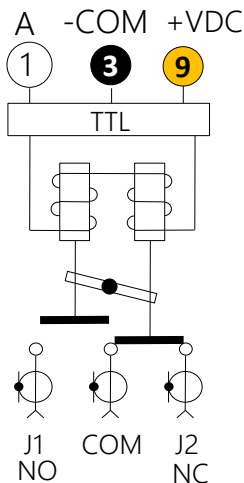
Failsafe



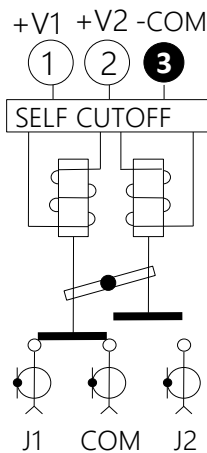
Pulse Latching



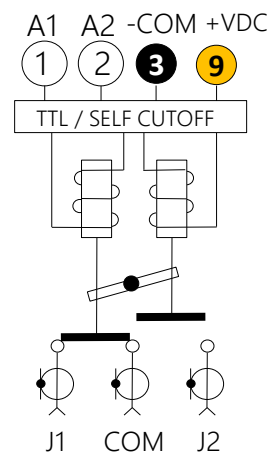
Failsafe TTL



Self Cutoff (latching only)



TTL and Self Cutoff (latching only)



- NOTE: (1) TTL logic: low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.
 (2) –C = GROUND; +VDC = +Rated Voltage.
 (3) Optional: +VDCI = +RATED VOLTAGE (for optional optoelectronic indicators).
 (4) "T" = 50Ω termination.
 (5) "NC" = Normally Closed; "NO" = Normally Open.
 (6) Consult the factory for the positive COM option.

FAILSAFE

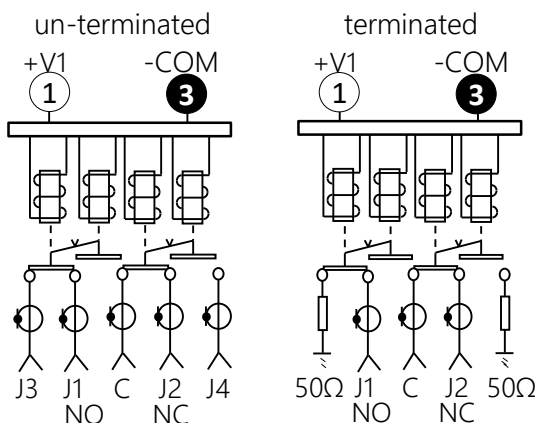
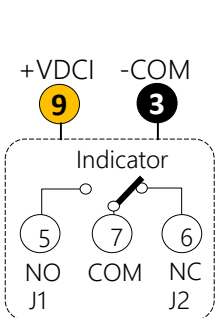


Fig. 1

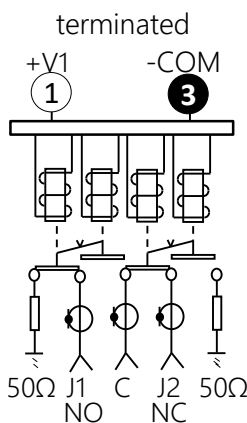


Fig. 2

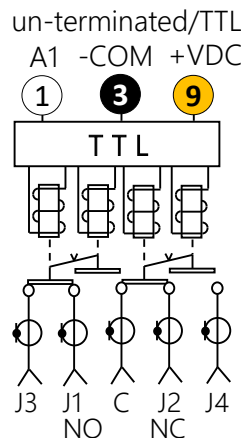


Fig. 3

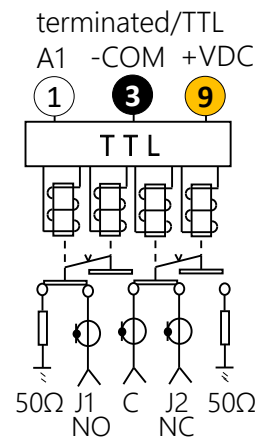


Fig. 4

LATCHING

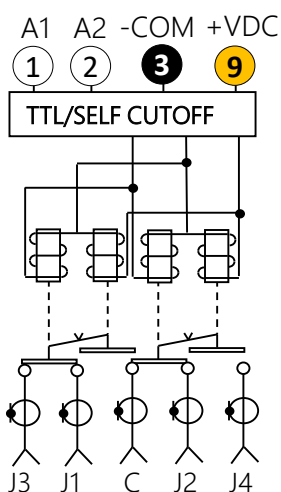
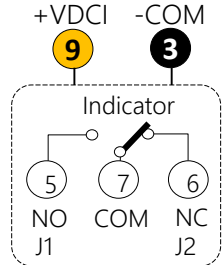


Fig. 5

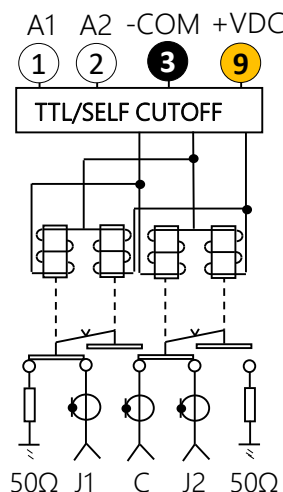


Fig. 6

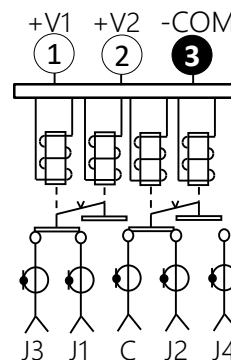


Fig. 7

LOGIC TRUTH TABLE

FAILSAFE (Figs. 1 and 2)

RF PATH	+V1	-COM
J1-C, J2-J4(T)	+VDC	GND
J2-C, J1-J3(T)	0	GND

NOTE: +VDC=Positive rated voltage.

FAILSAFE TTL (Figs. 3 and 4)

RF PATH	A
J1-C, J2-J4(T)	1
J2-C, J1-J3(T)	0

PULSE LATCHING (Fig. 7)

RF PATH	+V1	+V2
J1-C, J2-J4(T)	+ΔV	0
J2-C, J1-J3(T)	0	+ΔV

NOTE: +ΔV=Positive rated voltage pulse.

LATCHING TTL/SELF CUTOFF (Figs. 5-6)

RF PATH	A1	A2
J1-C, J2-J4(T)	1	0
J2-C, J1-J3(T)	0	1

NOTE: +ΔV=Positive rated voltage pulse.

- NOTE: (1) TTL logic: low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.
 (2) –C = GROUND; +VDC = +Rated Voltage.
 (3) Optional: +VDCI = +RATED VOLTAGE (for optional optoelectronic indicators).
 (4) "T" = 50Ω termination.
 (5) "NC" = Normally Closed; "NO" = Normally Open.
 (6) Consult the factory for the positive COM option.

MC5, MC7

FAILSAFE

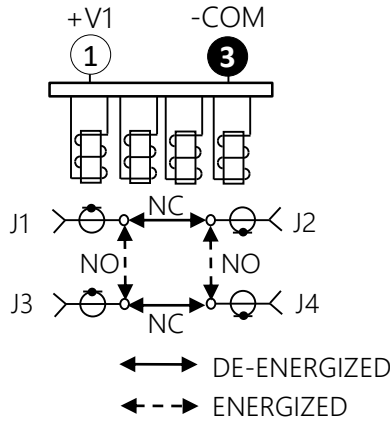
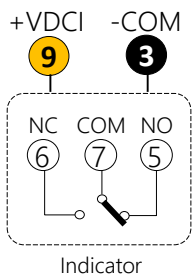


Fig. 1

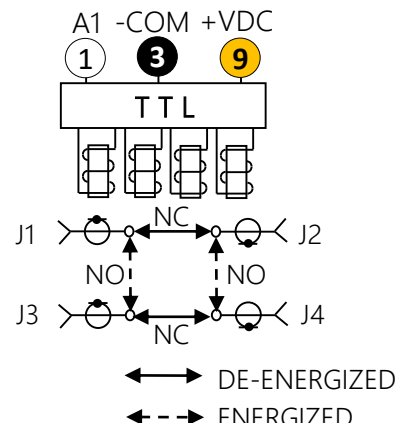


Fig. 2

LATCHING

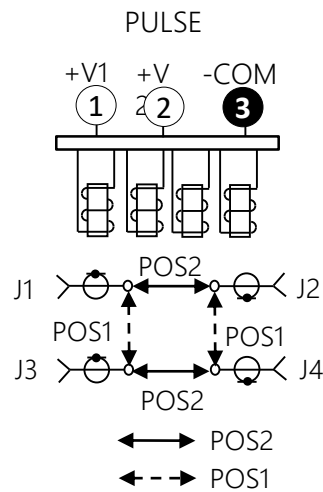
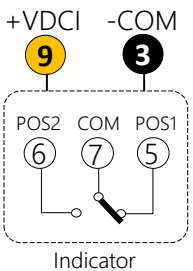


Fig. 3

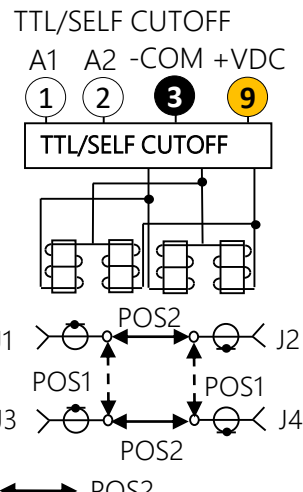


Fig. 4

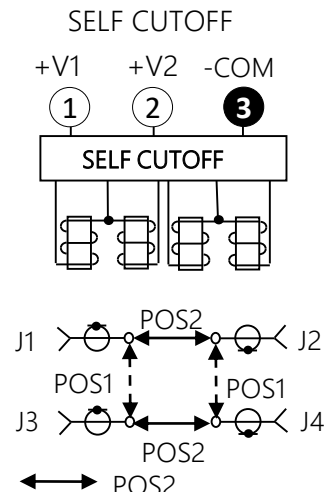


Fig. 5

LOGIC TRUTH TABLE

FAILSAFE (Figs. 1)

	RF PATH	+V1	-COM
POS1	J1-J2, J3-J4	0	GND
POS2	J1-J3, J2-J4	+VDC	GND

NOTE: +VDC=Positive rated voltage.

PULSE LATCHING (Fig. 3)

	RF PATH	+V1	+V2
POS1	J1-J3, J2-J4	+ΔV	0
POS2	J1-J2, J3-J4	0	+ΔV

NOTE: +ΔV=Positive rated voltage pulse.

FAILSAFE TTL (Figs. 2)

	RF PATH	A
POS1	J1-J2, J3-J4	0
POS2	J1-J3, J2-J4	1

LATCHING TTL/SELF CUTOFF (Fig. 4)

	RF PATH	A1	A2
POS1	J1-J3, J2-J4	1	0
POS2	J1-J2, J3-J4	0	1

LATCHING SELF CUTOFF (Fig. 5)

	RF PATH	IND PATH	+V1	+V2
POS1	J1-J3, J2-J4	IND1-C	+VDC	0
POS2	J1-J2, J3-J4	IND2-C	0	+VDC

NOTE: (1) TTL logic: low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.
(2) "NC"=Normally Closed; "NO"=Normally Open.
(3) Consult the factory for the positive COM option.

MC3, MC6, MC9, MCH, MCJ, MCG, MCL, MCR

NORMALLY OPEN

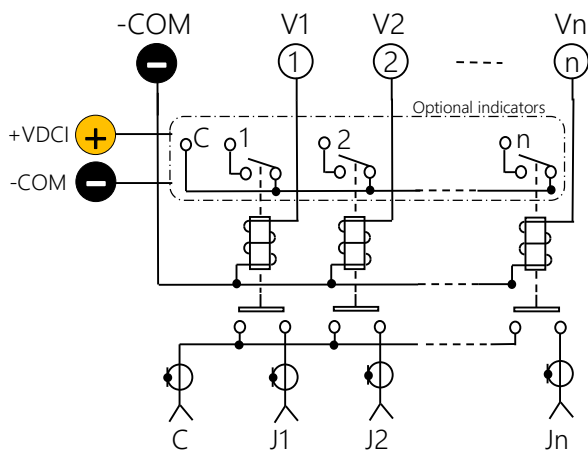


Fig. 1

NORMALLY OPEN with TTL

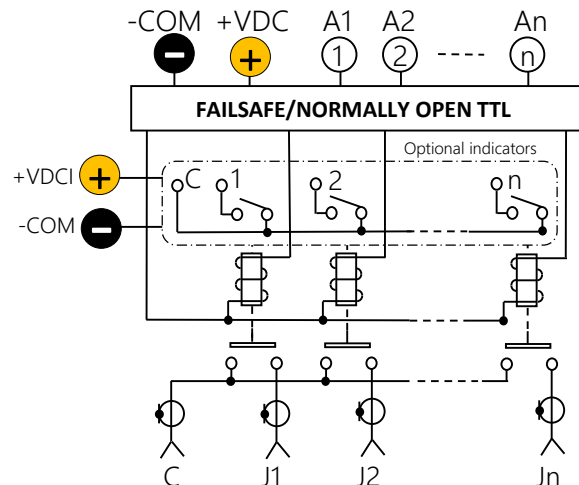


Fig. 2

LOGIC
TRUTH
TABLE

NORMALLY OPEN (Fig. 1)

RF PATH	V(n)	COM
J(n)-C	Rated +V	GND
J(n) Open	0	GND

NORMALLY OPEN with TTL (Fig. 2)

RF PATH	A(n)	+VDC	COM
J(n)-C	1	Rated +V	GND
J(n) Open	0	Rated +V	GND

NOTE: (1) TTL logic input A(n): low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.

NORMALLY OPEN (Fig. 1)

15-PIN D-SUB PINOUT	
Pin No.	PINOUT
1	V1 (J1-COM)
2	V2 (J2-COM)
3	V3 (J3-COM)
4	V4 (J4-COM)
5	V5 (J5-COM)
6	V6 (J6-COM)
7	V7 (J7-COM)
8	V8 (J8-COM)
9	V9 (J9-COM)
10	V10 (J10-COM)
11	V11 (J11-COM)
12	V12 (J12-COM)
13	COM(-)
14-15	UNUSED

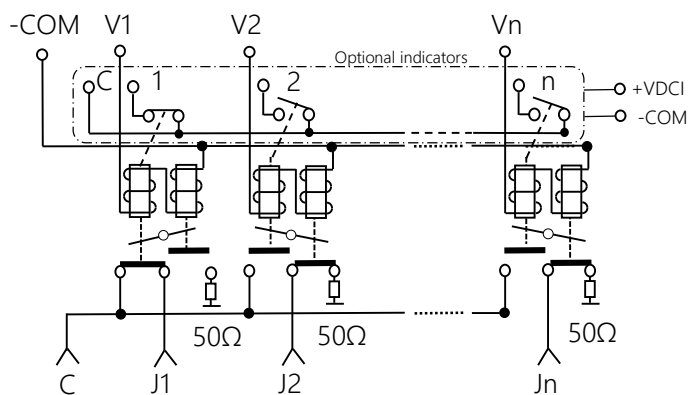
NORMALLY OPEN with TTL (Fig. 2)

15-PIN D-SUB PINOUT	
Pin No.	PINOUT
1	A1 (J1-COM)
2	A2 (J2-COM)
3	A3 (J3-COM)
4	A4 (J4-COM)
5	A5 (J5-COM)
6	A6 (J6-COM)
7	A7 (J7-COM)
8	A8 (J8-COM)
9	A9 (J9-COM)
10	A10 (J10-COM)
11	A11 (J11-COM)
12	A12 (J12-COM)
13	COM(-)
14	UNUSED
15	+VDC

with or without Terminations

MCF, MC8, MC0, MCM (NORMALLY OPEN)

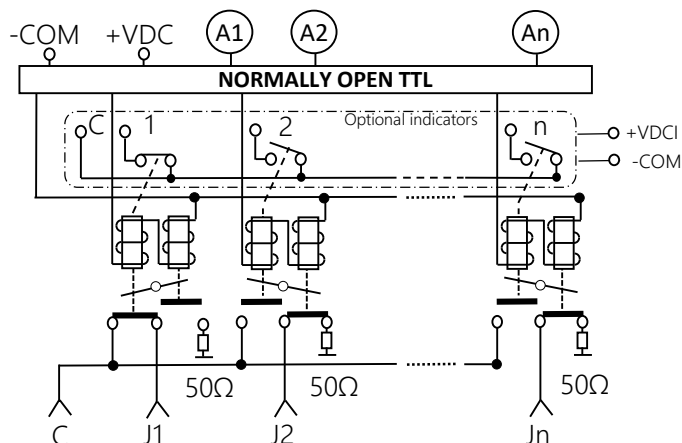
NORMALLY OPEN



Normally open on each unused position.

Fig. 1

NORMALLY OPEN with TTL



Normally open on each unused position.

Fig. 2

LOGIC
TRUTH
TABLE

NORMALLY OPEN (Fig. 1)

RF PATH	V(n)	COM
J(n)-C	+VDC	GND
J(n)-T or Open	0	GND

NORMALLY OPEN with TTL (Fig. 2)

RF PATH	A(n)	+VDC	COM
J(n)-C	1	Rated +V	GND
J(n)-T or Open	0	Rated +V	GND

NOTE: (1) TTL logic input A(n): low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.

(2) +VDC=Rated voltage.

with or without Terminations

MCF, MC8, MC0, MCM (LATCHING)

LATCHING (Pulse)

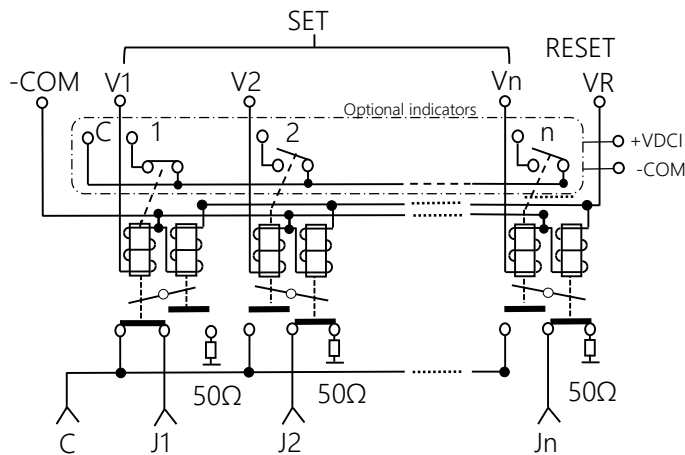


Fig. 1

LATCHING (TTL)

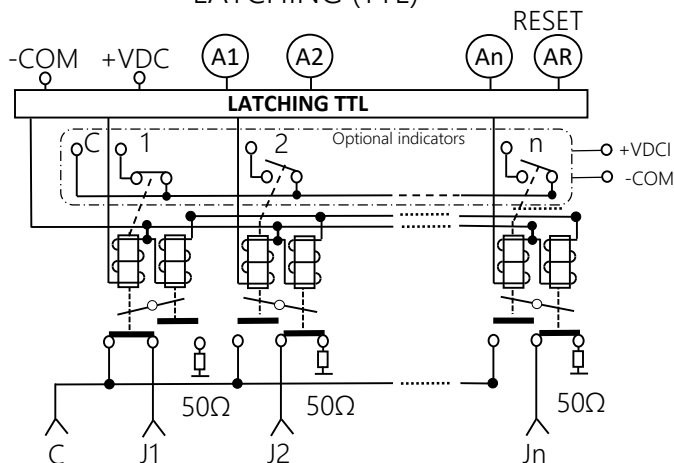


Fig. 2

LATCHING (SELF CUTOFF)

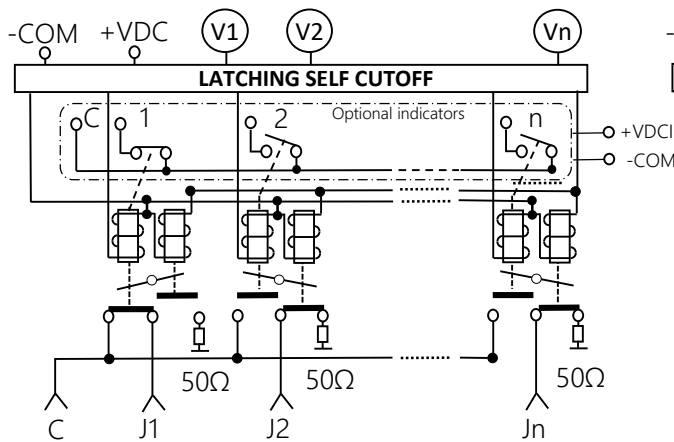


Fig. 3

LATCHING (TTL SELF CUTOFF)

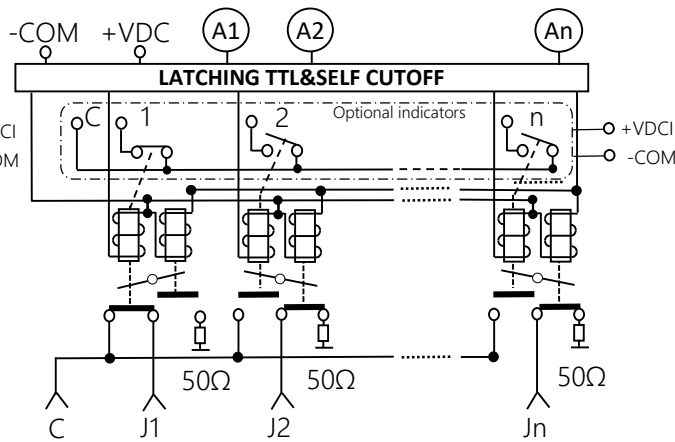


Fig. 4

LOGIC
TRUTH
TABLE

LATCHING (Pulse) (Fig. 1)

RF PATH	V(n)	VR
J(n)-C	+ΔV	GND
ALL J(n)-T or Open	GND	+ΔV

LATCHING (SELF CUTOFF) (Fig. 3)

RF PATH	V(n)
J(n)-C	+VDC
J(n)-T or Open	GND

LATCHING with TTL (Fig. 2)

RF PATH	A(n)	AR
J(n)-C	1	0
ALL J(n)-T or Open	0	1

LATCHING with TTL & SELF CUTOFF (Fig. 4)

RF PATH	A(n)
J(n)-C	1
J(n)-T or Open	0

NOTE: (1) TTL logic input A(n): low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.
 (2) +VDC=Rated voltage; +ΔV=Pulse of rated voltage.

with or without Terminations

MCF, MC8, MC0, MCM (LATCHING)

LATCHING (SELF CUTOFF with RESET-ALL)

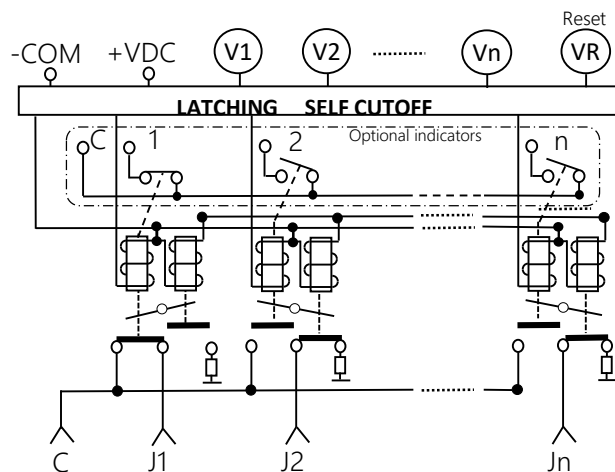


Fig. 1

LATCHING (SELF CUTOFF with auto-RESET)

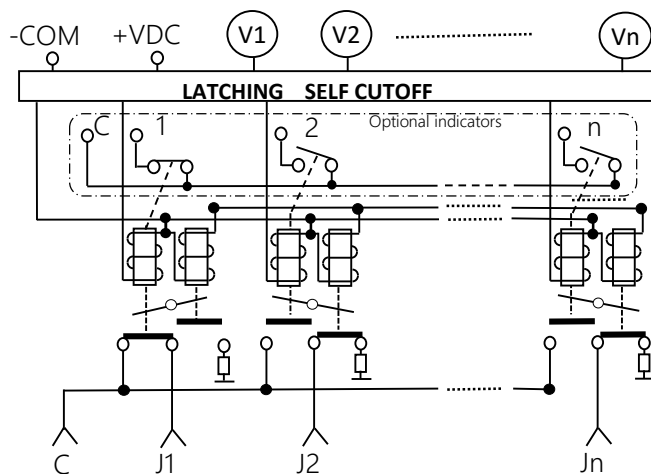


Fig. 1

LATCHING (TTL SELF CUTOFF with RESET-ALL)

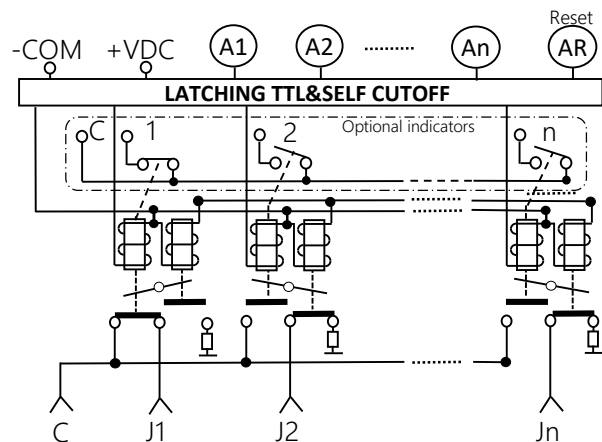


Fig. 3

LATCHING (TTL SELF CUTOFF with auto-RESET)

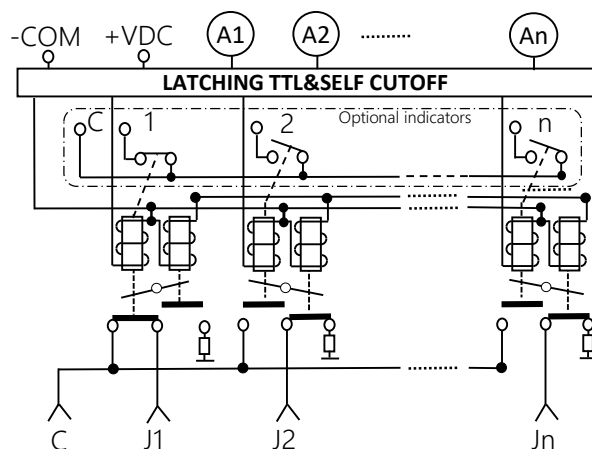


Fig. 4

LOGIC
TRUTH
TABLE

LATCHING (SELF CUTOFF with RESET-ALL) (Fig. 1)

RF PATH	V(n)	VR	-COM	+VDC
J(n)-C	Rated +V	GND	GND	Rated +V
J(n)-T or Open	GND	Rated +V	GND	Rated +V

LATCHING (TTL SELF CUTOFF with RESET-ALL) (Fig. 3)

RF PATH	A(n)	AR	-COM	+VDC
J(n)-C	1	0	GND	Rated +V
J(n)-T or Open	0	1	GND	Rated +V

LATCHING (SELF CUTOFF with auto-RESET) (Fig. 2)

RF PATH	V(n)	-COM	+VDC
J(n)-C	Rated +V	GND	Rated +V
J(n)-T or Open	GND	GND	Rated +V

LATCHING (TTL SELF CUTOFF with auto-RESET) (Fig. 4)

RF PATH	A(n)	-COM	+VDC
J(n)-C	1	GND	Rated +V
J(n)-T or Open	0	GND	Rated +V

NOTE: (1) TTL logic input A(n): low "0" = 0.0V – 0.8V; high "1" = 2.4V – 5.5V.
 (2) +VDC=Rated voltage; +ΔV=Pulse of rated voltage.

PIN OUT TABLE

SOLDER/DSUB PIN CONNECTION TABLE			MC1/MC2/MC4: 1P2T / 2P3T									
			PIN NUMBER									
INDEX	5. RELAY FUNCTION	7. ACTUATOR TYPE	1	2	3	4	5	6	7	8	9	
A	F (or N): FAILSAFE	0,4: NO TTL	+V1		-COM		INDICATOR				+VDCI	
B		1: TTL	A1		-COM						+VDC	
C	L: LATCHING	0,4: NO TTL	+ΔV1	+ΔV2	-COM		1	2	COM_I		+VDC	
D		1: TTL	ΔA1	ΔA2	-COM						+VDC	
E		2: SELF CUTOFF	+V1	+V2	-COM						+VDC	
F		3: TTL&SELF CUTOFF	A1	A2	-COM						+VDC	

DSUB OR SOLDER PIN CONNECTION TABLE			MC5/MC7: 2P2T									
			PIN NUMBER									
INDEX	5. RELAY FUNCTION	7. ACTUATOR TYPE	1	2	3	4	5	6	7	8	9	
A	F (or N): FAILSAFE	0,4: NO TTL	+V1		-COM		INDICATOR				+VDC	
B		1: TTL	A1		-COM						+VDC	
C	L: LATCHING	0,4: NO TTL	+ΔV1	+ΔV2	-COM		1	2	COM_I		+VDC	
D		1: TTL	ΔA1	ΔA2	-COM						+VDC	
E		2: SELF CUTOFF	+V1	+V2	-COM						+VDCI	
F		3: TTL&SELF CUTOFF	A1	A2	-COM						+VDC	

DSUB OR SOLDER PIN CONNECTION TABLE			MC3/MCF/MC6: 1P6T														
			PIN NUMBER														
INDEX	5. RELAY FUNCTION	7. ACTUATOR TYPE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	N: N. OPEN	0,4: NO TTL	+V1	+V2	+V3	+V4	+V5	+V6	-COM	INDICATOR (OPTIONAL)						+VDCI	
B		1: TTL	A1	A2	A3	A4	A5	A6	-COM							+VDC	
C	L: LATCHING	0,4: NO TTL	+ΔV1	+ΔV2	+ΔV3	+ΔV24	+ΔV5	+ΔV6	-COM	1	2	3	4	5	6	COM_I	+VDCI
D		1: TTL	ΔA1	ΔA2	ΔA3	ΔA4	ΔA5	ΔA6	-COM								+VDC
E		2: SELF CUTOFF	+V1	+V2	+V3	+V4	+V5	+V6	-COM								+VDCI
F		3: TTL&SELF CUTOFF	A1	A2	A3	A4	A5	A6	-COM								+VDC

DSUB OR SOLDER PIN CONNECTION TABLE			MC8/MC9/MCH: 1P8T												
			PIN NUMBER												
INDEX	5. RELAY FUNCTION	7. ACTUATOR TYPE	1	2	3	4	5	6	7	8	9	10	11-14	15	
A	N: N. OPEN	0,4: NO TTL	+V1	+V2	+V3	+V4	+V5	+V6	+V7	+V8	-COM			+VDCI	
B		1: TTL	A1	A2	A3	A4	A5	A6	A7	A8	-COM			+VDC	
C	L: LATCHING	0,4: NO TTL	+ΔV1	+ΔV2	+ΔV3	+ΔV24	+ΔV5	+ΔV6	+ΔV7	+ΔV8	-COM	+ΔVR		+VDCI	
D		1: TTL	ΔA1	ΔA2	ΔA3	ΔA4	ΔA5	ΔA6	ΔA7	ΔA8	-COM	ΔAR		+VDC	
E		2: SELF CUTOFF	+V1	+V2	+V3	+V4	+V5	+V6	+V7	+V8	-COM			+VDCI	
F		3: TTL&SELF CUTOFF	A1	A2	A3	A4	A5	A6	A7	A8	-COM			+VDC	

DSUB OR SOLDER PIN CONNECTION TABLE			MC0/MCJ: 1P10T												
			PIN NUMBER												
INDEX	5. RELAY FUNCTION	7. ACTUATOR TYPE	1	2	3	4	5	6	7	8	9	10	11	12-14	15
A	N: N. OPEN	0,4: NO TTL	+V1	+V2	+V3	+V4	+V5	+V6	+V7	+V8	+V9	+V10	-COM		+VDCI
B		1: TTL	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	-COM		+VDC
C	L: LATCHING	0,4: NO TTL	+ΔV1	+ΔV2	+ΔV3	+ΔV24	+ΔV5	+ΔV6	+ΔV7	+ΔV8	+ΔV9	+ΔV10	-COM		+VDCI
D		1: TTL	ΔA1	ΔA2	ΔA3	ΔA4	ΔA5	ΔA6	ΔA7	ΔA8	ΔA9	ΔA10	-COM		+VDC
E		2: SELF CUTOFF	+V1	+V2	+V3	+V4	+V5	+V6	+V7	+V8	+V9	+V10	-COM		+VDCI
F		3: TTL&SELF CUTOFF	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	-COM		+VDC

DSUB OR SOLDER PIN CONNECTION TABLE			MCL/MCG/MCM: 1P12T														
			PIN NUMBER														
INDEX	5. RELAY FUNCTION	7. ACTUATOR TYPE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	N: N. OPEN	0,4: NO TTL	+V1	+V2	+V3	+V4	+V5	+V6	+V7	+V8	+V9	+V10	+V11	+V12	-COM		+VDCI
B		1: TTL	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	-COM		+VDC
C	L: LATCHING	0,4: NO TTL	+ΔV1	+ΔV2	+ΔV3	+ΔV24	+ΔV5	+ΔV6	+ΔV7	+ΔV8	+ΔV9	+ΔV10	+ΔV11	+ΔV12	-COM	+ΔVR	+VDCI
D		1: TTL	ΔA1	ΔA2	ΔA3	ΔA4	ΔA5	ΔA6	ΔA7	ΔA8	ΔA9	ΔA10	ΔA11	ΔA12	-COM	ΔAR	+VDC
E		2: SELF CUTOFF	+V1	+V2	+V3	+V4	+V5	+V6	+V7	+V8	+V9	+V10	+V11	+V12	-COM		+VDCI
F		3: TTL&SELF CUTOFF	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	-COM		+VDC

+Vn = RATED +VDC

+ΔVn = RATED +VDC PULSE

An = LOGIC INPUT

ΔAn = LOGIC INPUT PULSE

+ΔVR = RATED +VDC PULSE FOR RESET

ΔAR = LOGIC INPUT PULSE FOR RESET

Note: -COM=GROUND; +VDC= +RATED VOLTAGE; Optional: +VDCI= +RATED VOLTAGE (for optional optoelectronic indicators).

A 26-pin DSUB connector may be used for multi-position 1PnT (n>6) switches with the indicator option. Contact factory for its corresponding pinouts.

DC - 67GHz

RF COAXIAL SWITCH MATRIX

High performance, reliable products at competitive prices.

USB or Ethernet Controlled



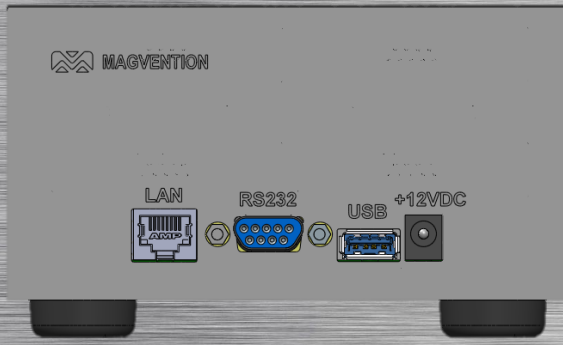
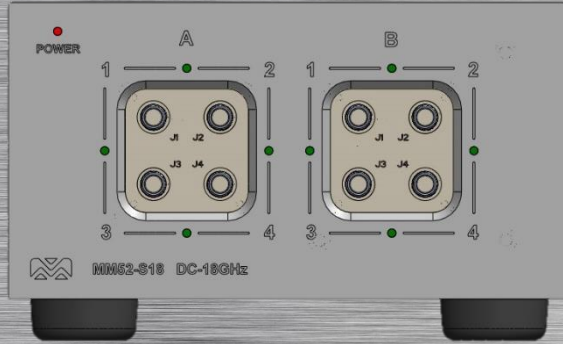
STANDARD or CUSTOM DESIGN



CONTROL PANEL EXAMPLE

 MAGVENTION RFSWITCH CONTROL

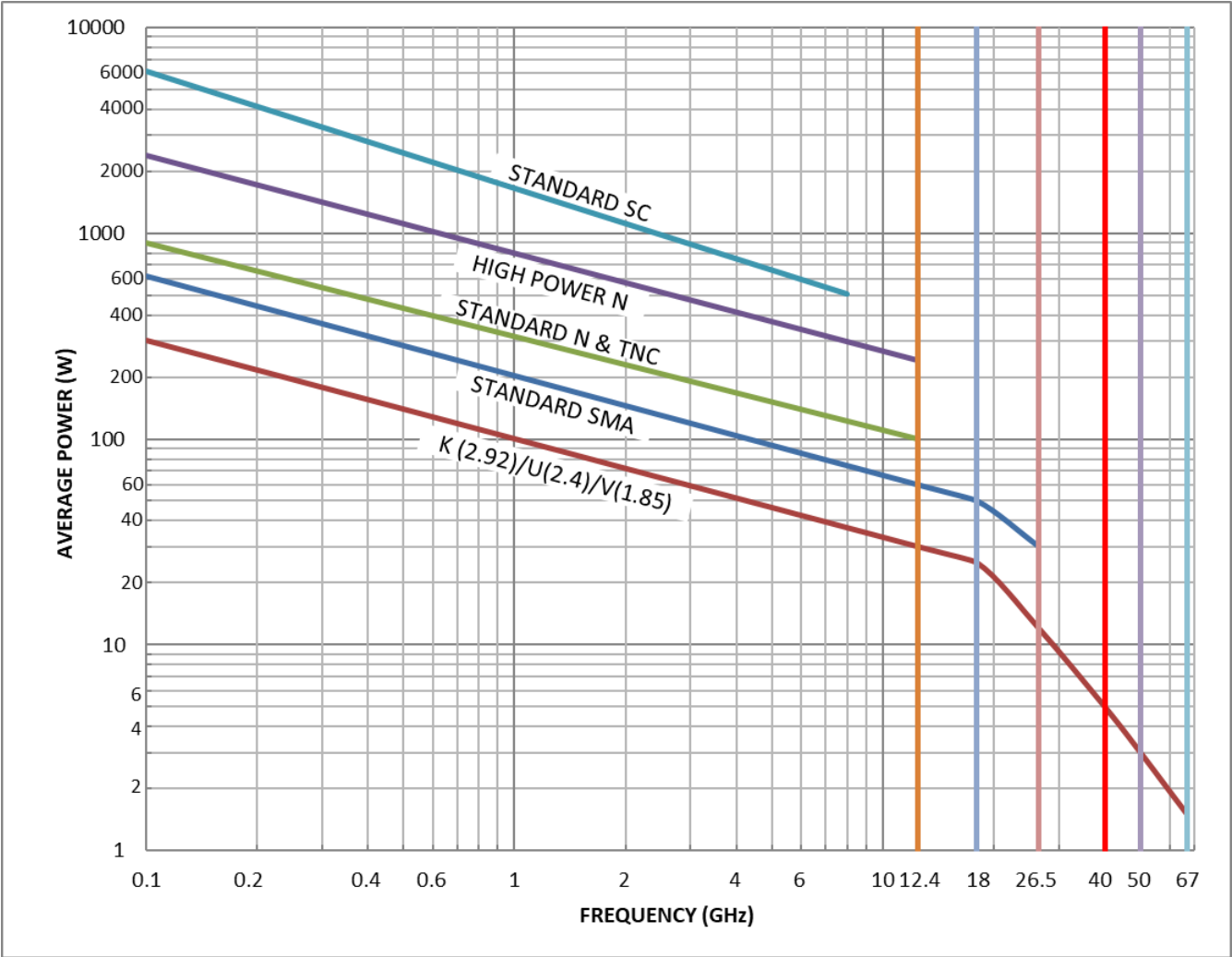
A	1	2	3	4	5	6	7	8	RESET
B	1	2	3	4					RESET
C	1	2							RESET
D	1	2							RESET
E	1	2	3	4					RESET
F	1								RESET
									RESET ALL



 MAGVENTION

POWER CHART

POWER CAPACITY VS. FREQUENCY GRAPH
This graph is based on the following conditions:
Ambient temperature 20°C, sea level, VSWR=1:1 and cold switching



VSWR	DERATING FACTOR
1.5 : 1	0.96
2.0 : 1	0.88
2.5 : 1	0.84
3.0 : 1	0.75

VSWR	DERATING FACTOR
3.5 : 1	0.70
4.0 : 1	0.64
4.5 : 1	0.60
5.0 : 1	0.56



MAGVENTION
Suite 5A-3, No. 8 Zhanye Rd.
Suzhou (SIP), CHINA
Zip: 215121

Phone: +86 (0512)-69567128
Fax: +86 (0512)-69567125
Email: sales@magvention.com
Web: www.magvention.com