

DESCRIPTION

The MS3719 is a slim, plug-in filter unit that filters voltage input signals with preset filter characteristics and provides a single output. The unit has no isolation between input and output.

ORDERING CODE

MS3719 - -

Model _____

Output _____
No code: -10 to 10V
I: -20 to 20mA

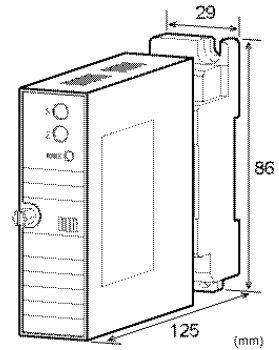
Input Connection _____
No code: Differential
SE: Single-Ended

Power Supply _____
A: 100 to 240V AC (47 to 63Hz)
P: 100 to 240V DC
D: 24V DC

High Pass Filter _____
1: 1st order filter
2: 2nd order filter
4: 4th order filter
N: No high pass filter.

Low Pass Filter _____
2: 2nd order filter
4: 4th order filter
8: 8th order filter
N: No low pass filter.

Options _____
No code: None
/A: External power supply $\pm 15V$ DC (50mA)
/X: Others (Special order)
 * For non-standard options, ask MTT for availability.


SPECIFICATIONS
POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC $\pm 10\%$ 100 to 240V DC: 85 to 264V DC		
Power Sensitivity	Better than $\pm 0.1\%$ of span for each power supply range.		
Power Line Fuse	Voltage output: 160mA fuse Current output: 200mA fuse		
Power Consumption			
Power	100-240V AC	24V DC	100-240V DC
Single Output	9.0VA max	3.2W max	9.6W max
Dual Output	9.0VA max	3.5W max	9.6W max

INPUT SECTION

Input Signal	-10 to 10V
Input Resistance	1M Ω min. with or without power.
Allowable Input Voltage	$\pm 30V$ DC max., continuous.
External Power Supply	Output voltage: $\pm 15V$ ($\pm 5\%$) Output current: 50mA max.

Cutoff Frequencies Available

<Standard specifications>

Item	Order	Standard Specifications
Cutoff Frequency for High Pass Filters	1st	0.05Hz, 0.1Hz, 1Hz, 10Hz, 100Hz, 200Hz
	2nd, 4th	10Hz, 100Hz, 200Hz
Cutoff Frequency for Low Pass Filters	2nd	1Hz, 10Hz, 100Hz, 1kHz, 10kHz
	4th, 8th	100Hz, 1kHz, 10kHz
Gains		1x, 2x, 10x, 50x, 100x, 300x

<Quasi-standard specifications>

Item	Order	Ranges Available
Cutoff Frequency for High Pass Filters	1st	0.05 to 200Hz
	2nd, 4th	1 to 200Hz
Cutoff Frequency for Low Pass Filters		1 to 10kHz
Gains		1x to 300x

Notes:

- Any specification out of the cutoff frequency or gain range listed above is treated as a special order.
 - The cutoff frequency of a high pass filter should be lower than that of a low pass filter.
 - For current output models, the cutoff frequency of a low pass filter should be lower than or equal to 1kHz.
- (Example) Setting an input of $\pm 100mV$ with a gain of 100x produces an output of $\pm 10V$.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above. Also specify a cutoff frequency and gain.

(e.g.) MS3719-A-12

(High pass filter: 200Hz / Low pass filter: 10kHz / Gain 10x)

Notes:

- If you select a 2nd or 4th order high pass filter, an 8th order low pass filter is not available.
- If you select an 8th order low pass filter, neither a 2nd nor 4th order high pass filter is not available.
- If no gain is specified, the unit will be manufactured so as to have a gain of 1x.
- If you wish to include multiple options in your order, specify the option codes in series (e.g. /AX).

● OUTPUT SECTION

Output Signal	-10 to 10V -20 to 20mA
Maximum Output Load	Voltage output: 2kΩ min. Current output: 550Ω max.
Zero Adjustment	Approx. ±1.2% of span. (Adjustable by the front-accessible trimmer.)
Span Adjustment	Approx. ±1.0% of span. (Adjustable by the front-accessible trimmer.)

● PERFORMANCE

Accuracy Rating	Better than ±0.1% of span with ±10V DC output (at 25°C±5°C).
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient with ±10V DC output.
Passband Ripple	±0.5dB
Cutoff Frequency	< 10Hz: ±10% (10Hz ≤: ±5%)
Tolerance	
Filter Configurations	
High Pass Filter	1st order filter 2nd and 4th order filters (Butterworth)
Low Pass Filter	2nd, 4th and 8th order filters (Butterworth)
Power-ON Indicator	Green LED
Isolation	3-way isolation between [input, output], power, and ground.
Insulation Resistance	100MΩ min. (@ 500V DC) between [input, output], power, and ground.
Dielectric Strength	[Input, Output] / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 5.0mA)
Surge Withstand Capability	Tested as per ANSI/IEEE C37.90.1-1989.
Operating Environment	Ambient temperature: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

● PHYSICAL

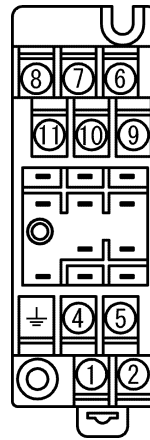
Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

● MATERIALS

Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2μm gold plating
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Anti-Humidity Coating	HumiSeal® 1A27NS (Polyurethane)

* HumiSeal® is a registered trademark of Chase Corporation.

TERMINAL ASSIGNMENT



Differential Input:

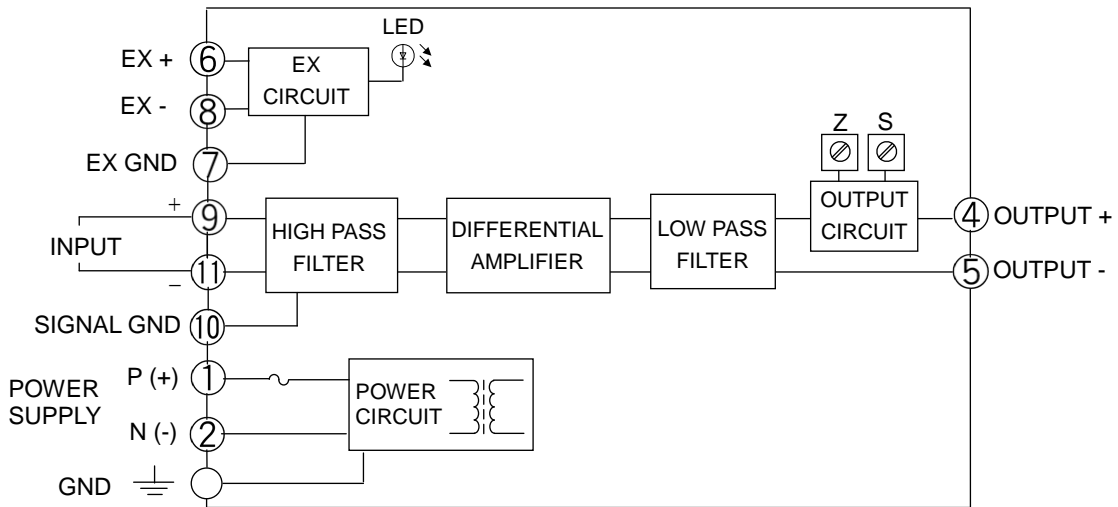
①	P (+)	POWER
②	N (-)	
⊥	GND	
④	+ OUTPUT	
⑤	- OUTPUT	
⑥	EX +	
⑦	EX GND	
⑧	EX -	
⑨	+ INPUT	
⑩	SIG GND	
⑪	- INPUT	

Single-ended Input:

①	P (+)	POWER
②	N (-)	
⊥	GND	
④	+ OUTPUT	
⑤	- OUTPUT	
⑥	EX +	
⑦	EX GND	
⑧	EX -	
⑨	+ INPUT	
⑩	- INPUT	
⑪	N.C.	

BLOCK DIAGRAM

Differential Input:



Single-ended Input:

