



U.S. Patent 8,997,789; Other Patents Pending

# MIID-1000

## Malema Interconnect Interlock Device

### Description

The Malema Interconnect Interlock device (MIID) provides backflow protection for bulk chemical and High Purity Water services in laboratories, industrial plants and wafer fabrication facilities.

### Operation

The Malema Interconnect Interlock Device protects against back siphonage of process critical liquids including toxic, hazardous or non-toxic liquids. It consists of a manifold of pneumatically actuated valves that operate in a coordinated fashion ensuring that the bulk supplies cannot be contaminated during unplanned or unexpected pressure fluctuation occurring during normal operations. The MIID provides for the pneumatic selection of either of two bulk supplies and for the flushing of a slurry drain between dispense cycles. Sweeping the MIID with a “process inert gas” ensures that only such process inert gas enters the piping systems during any back siphonage event. A specialized Malema liquid flow detector monitors the Vent-Drain pathway in the MIID detecting very small by-pass leaks prior to any adverse effects on the process or bulk supply systems.

### Key Features

- All high purity PTFE and PFA construction of the wetted components
- Integrated design for compact, space savings installation
- Designed for minimal head loss
- Field configurable flare connections [Inlets can be configured as either ¼” or 3/8” flare nipples] allowing for simplified retrofit installation and reduced inventories
- Valve components tested to over 10,000,000 cycles in DIW (over 1,050,000 in Cabot SS-12)
- Valve Cv = 0.8
- Built-in Leak detection & monitoring
- Built-in Optical Valve position sensing

## Specifications

Media Pressure	0 to 80 PSIG 0 to 5.5 Bar
Pneumatic Actuation Pressure	60 to 120 PSIG 4.1 to 8.3 Bar
Media Temperature	0°F to 266°F (excluding phase changes)
Ambient Temperature	-17.7° C to 130° C
	0°F to 150°F (no freezing liquids)
	-17.7° C to 65.5° C
Mounting	Mount the MIID horizontally with the Drain Outlet facing UP
	Two(2) 10-32 screws required but, not provided
Pneumatic Control Interface	10-32 UNF-2B (M5)
Electrical Interface	24 VDC, 0.1 A max
Critical Valve Characteristic	Cv = 0.8

## Dimensions

Inlets	Field Configurable as 1/4" or 3/8" Flare nipple		
Outlets	POU Outlet	1/4" Flare nipple	
	Vent-Drain Outlet	3/8" Flare nipple	
Overall Dimensions (each MIID block)	Height	5.50"	139.70 mm
	Width	3.75"	95.25 mm
	Length	6.50"	165.10 mm
Overall Dimension (Three(3) MIID Kit)	Height	5.50"	139.70 mm
	Width	11.25"	285.75 mm
	Length	6.50"	165.10 mm
Overall Dimensions (PLC Module)	Height	2.75"	70.00 mm
	Width	3.68"	93.00 mm
	Length	6.31"	160.00 mm

## Material Specifications

Wetted Surfaces	PFA & PTFE (modified)
Non-Wetted Surfaces	PFA, PVDF
Other Materials	Viton Seals, Halar Coated Stainless Steel, Stainless Steel, Polypropylene, Nylon, Acetyl

Ordering Information

Model Code					Description
MIID-1000	-	*	-	***	
	-				
Wetted Parts		T			PTFE
		-			
			XXX		Unique PN Identifier

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