



# IDEM Micro Switches

## Plunger Series Limit Switches

- A high precision, 15A-rated micro switch available in a wide variety of styles
- Plunger series models are available with a choice of actuator types including pin plunger, spring plunger, and roller plunger
- Panel mount options available
- Screw terminals for easy connection
- Suitable for a wide range of operating conditions
- Terminal enclosure available



IDEM Plunger Series Micro Switches							
Part Number	Price	Drawing Link	Actuator Type	Snap Action Contacts	Pretravel (max)	Over Travel	Force to Operate Contacts
<a href="#">176101-1</a>	\$42x#:	<a href="#">PDF</a>	Metal pin plunger	(1) N.O./ (1) N.C.	0.4 mm [0.016 in]	0.13 mm [0.005 in]	250-350 g [0.55-0.77 lb]
<a href="#">176101-5</a>	\$42y6:	<a href="#">PDF</a>	Metal pin plunger (pack of 5)				
<a href="#">176104-1</a>	\$42x.:	<a href="#">PDF</a>	Metal pin plunger long	(1) N.O./ (1) N.C.	0.4 mm [0.016 in]	1.6 mm [0.063 in]	250-350 g [0.55-0.77 lb]
<a href="#">176104-5</a>	\$42y9:	<a href="#">PDF</a>	Metal pin plunger long (pack of 5)				
<a href="#">176105-1</a>	\$42xx:	<a href="#">PDF</a>	Metal plunger	(1) N.O./ (1) N.C.	0.4 mm [0.016 in]	1.6 mm [0.063 in]	250-350 g [0.55-0.77 lb]
<a href="#">176105-5</a>	\$42ya:	<a href="#">PDF</a>	Metal plunger (pack of 5)				
<a href="#">176106-1</a>	\$42xy:	<a href="#">PDF</a>	Metal plunger with fixing nuts	(1) N.O./ (1) N.C.	0.4 mm [0.016 in]	5.5 mm [0.217 in]	250-350 g [0.55-0.77 lb]
<a href="#">176106-5</a>	\$42yb:	<a href="#">PDF</a>	Metal plunger with fixing nuts (pack of 5)				
<a href="#">176107-1</a>	\$42xz:	<a href="#">PDF</a>	Metal plunger with metal roller and fixing nuts	(1) N.O./ (1) N.C.	0.4 mm [0.016 in]	3.58 mm [0.141 in]	250-350 g [0.55-0.77 lb]
<a href="#">176107-5</a>	\$42yc:	<a href="#">PDF</a>	Metal plunger with metal roller and fixing nuts (pack of 5)				
<a href="#">176108-1</a>	\$42xj:	<a href="#">PDF</a>	Metal plunger with metal cross roller and fixing nuts	(1) N.O./ (1) N.C.	0.4 mm [0.016 in]	3.58 mm [0.141 in]	250-350 g [0.55-0.77 lb]
<a href="#">176108-5</a>	\$42yd:	<a href="#">PDF</a>	Metal plunger with metal cross roller and fixing nuts (pack of 5)				

<a href="#">176000-1</a>	\$42x.:	<a href="#">PDF</a>	IDEM terminal enclosure, PVC. For use with IDEM micro limit switches.
<a href="#">176000-5</a>	\$42y5:	<a href="#">PDF</a>	IDEM terminal enclosure, PVC. Package of 5. For use with IDEM micro limit switches.

[176101-1](#)[176104-1](#)[176105-1](#)[176106-1](#)[176107-1](#)[176108-1](#)[176000-1](#)

# IDEM Micro Switches, Plunger Series

## Operating Characteristics

**Metal Pin Plunger (176101)**



Operating Characteristics	
<b>Operating Force</b>	250-350 g [0.55-0.77 lb]
<b>Release Force (min)</b>	114g [0.25 lb]
<b>Pre-Travel (max)</b>	0.4 mm [0.016 in]
<b>Over-Travel (min)</b>	0.13 mm [0.005 in]
<b>MD (max)</b>	0.05 mm [0.002 in]
<b>Operating Position</b>	15.9 ± 0.4 mm [0.626±0.016 in]

**Metal Pin Plunger Long (176104)**



Operating Characteristics	
<b>Operating Force</b>	250-350 g [0.55-0.77 lb]
<b>Release Force (min)</b>	114g [0.25 lb]
<b>Pre-Travel (max)</b>	0.4 mm [0.016 in]
<b>Over-Travel (min)</b>	1.6 mm [0.063 in]
<b>MD (max)</b>	0.5 mm [0.020 in]
<b>Operating Position</b>	28.2 ± 0.5 mm [1.110±0.020 in]

**Metal Plunger (176105)**



Operating Characteristics	
<b>Operating Force</b>	250-350 g [0.55-0.77 lb]
<b>Release Force (min)</b>	114g [0.25 lb]
<b>Pre-Travel (max)</b>	0.4 mm [0.016 in]
<b>Over-Travel (min)</b>	1.6 mm [0.063 in]
<b>MD (max)</b>	0.05 mm [0.002 in]
<b>Operating Position</b>	21.5 ± 0.5 mm [0.846±0.020 in]

**Metal Plunger With Fixing Nuts (176106)**



Operating Characteristics	
<b>Operating Force</b>	250-350 g [0.55-0.77 lb]
<b>Release Force (min)</b>	114g [0.25 lb]
<b>Pre-Travel (max)</b>	0.4 mm [0.016 in]
<b>Over-Travel (min)</b>	5.5 mm [0.217 in]
<b>MD (max)</b>	0.05 mm [0.002 in]
<b>Operating Position</b>	21.8 ± 0.8 mm [0.858±0.032 in]

**Metal Plunger With Metal Roller and Fixing Nuts (176107)**



Operating Characteristics	
<b>Operating Force</b>	250-350 g [0.55-0.77 lb]
<b>Release Force (min)</b>	114g [0.25 lb]
<b>Pre-Travel (max)</b>	0.4 mm [0.016 in]
<b>Over-Travel (min)</b>	3.58 mm [0.141 in]
<b>MD (max)</b>	0.05 mm [0.002 in]
<b>Operating Position</b>	33.4 ± 1.2 mm [1.315±0.047 in]

### Operating Characteristics definitions:

- Operating Force: Force required to cause "snap."
- Release Force: Force still applied to plunger or lever when the contacts snap back from the operated position.
- Pre-Travel: Distance from free position to operating position.
- Over-Travel: The extra travel for the plunger or lever to travel safely beyond the operating position.
- MD (Max): Maximum differential (plunger or lever travel from the point where the contacts snap to the point where they snap back).
- FP (max): Extra distance relative to mounting holes that the plunger or lever travels to the snap position, including loose flex.
- Operating Position: Distance relative to mounting holes that the plunger or lever travels to the snap position.

# IDEM Micro Switches, Plunger Series

## Operating Characteristics (continued)

### Metal Plunger With Cross Roller and Fixing Nuts (176108)



Operating Characteristics	
<b>Operating Force</b>	250-350 g [0.55-0.77 lb]
<b>Release Force (min)</b>	114g [0.25 lb]
<b>Pre-Travel (max)</b>	0.4 mm [0.016 in]
<b>Over-Travel (min)</b>	3.58 mm [0.141 in]
<b>MD (max)</b>	0.05 mm [0.002 in]
<b>Operating Position</b>	33.4 ± 1.2 mm [1.315±0.047 in]

### Terminal Enclosure for IDEM Micro Limit Switches (176000)



Operating Characteristics
Designed to cover and protect all varieties of IDEM Micro Switches

#### Operating Characteristics definitions:

- Operating Force: Force required to cause "snap."
- Release Force: Force still applied to plunger or lever when the contacts snap back from the operated position.
- Pre-Travel: Distance from free position to operating position.
- Over-Travel: The extra travel for the plunger or lever to travel safely beyond the operating position.
- MD (Max): Maximum differential (plunger or lever travel from the point where the contacts snap to the point where they snap back).
- FP (max): Extra distance relative to mounting holes that the plunger or lever travels to the snap position, including loose flex.
- Operating Position: Distance relative to mounting holes that the plunger or lever travels to the snap position.

# IDEM Micro Switches General Specifications

IDEM Micro Switches General Specifications	
<b>Environmental</b>	
<b>Degree of Protection</b>	None
<b>Temperature Range</b>	-25 to 80°C [-13 to 176°F]
<b>Mechanical Ratings</b>	
<b>Mechanical Life</b>	1,000,000 operations minimum
<b>Switch Body</b>	Phenolic (composite resin)
<b>Enclosure (Part Number 176000)</b>	Polyvinyl chloride (PVC)
<b>Contact Blocks Rating</b>	
<b>Contact Resistance</b>	15m Ohms max (initial)
<b>Electrical Ratings</b>	0.5 A 125VDC 0.25 A 250VDC 0.125 hp 125VDC 0.25 hp 250VDC 20A @ 250VAC EN61058-1 and 15A @ 125VAC or 250VAC UL61058-1
	Make: 0.25 A at 120VDC; 0.125 A at 240VDC
<b>Dielectric Strength</b>	Between terminals of same polarity 100VAC (50/60 Hz for 1 minute)
<b>Electrical Life</b>	100,000 operations at full load
<b>Wiring Connections</b>	M4x5.5 terminal screw
<b>Torque Requirements</b>	Mounting screws: 1.5 N•m [1.11 lb•ft] Connector screws: 1.0 to 1.2 N•m [0.74 to 0.89 lb•ft]
<b>Agency Approvals *</b>	cULus E482215 (Exception: 176000 not UL listed) CE/Reach compliant

\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.