

## Limit Switches

### ATO - Features

#### High Control Circuit Reliability with Universal Contacts

With low control circuit voltage, an increased number of circuit failures can occur in electrical control systems. That is the reason why special universal contacts, with low contact resistance, are used in all Moeller Electric limit switches. It offers a high level of control circuit reliability with low circuit voltages and thus makes these limit switches most suitable for use with electronic systems. The galvanically separated contacts permit circuit voltages as high as 300V (A300 contact rating).

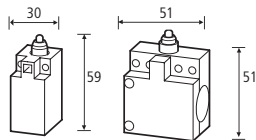
#### Contact Types

- normal action contacts
- overlapping contacts
- snap-action contacts

#### Versatile Modular System

Flexibility in application - simplified stocking

The modular system consists of standard and non-standard basic switches, enclosures, actuating heads and levers. The system allows the assembly of the required switch, on the spot, from the modules in stock.



#### Enclosures

The enclosures are made of glass reinforced thermoplast. This enclosure design is totally insulated, corrosion-resistant, has high mechanical impact strength and is extremely water, dust and oil tight.

#### Actuating heads

All actuating heads can be turned in 90° stops, to the position required. Also, in order to meet more applications, besides the standard actuating heads, other heads such as the angled lever roller, actuating rod and spring actuating rod are available.

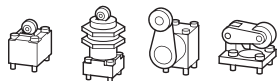
#### Plunger

The plunger head can be actuated in the direction of the plunger axis and with a drive it can be actuated in every direction perpendicular to the plunger axis.



#### Roller plunger, Roller lever

If the limit switch application has a high speed operating sequence or the drive cam has a long operating stroke, these actuating heads are ideal because of their long wear rollers.



The normal and overlapping contacts are activated directly by the actuating plunger. This makes these limit switches suitable for safety circuits where the control circuit must safely stop a machine even if the switch is damaged. Snap-action contacts close and open rapidly and are independent of the actuation speed. These are used when the activation speed is very slow ( $\leq 0.3\text{m/s}$ ), when there is excessive machine vibration, when switching DC voltages or when make and break contacts must be switched simultaneously. Only with snap-action contacts can the arc created in breaking a DC circuit be effectively extinguished. The uninterrupted (defined) change-over time of the limit switch make/break contacts makes the snap-action switch suitable for interfaces with electronic systems and assembly lines. The actuating rod or spring rod actuator operating head is only used with the snap-action switches.

Therefore, if many different model switches are required, the costs in storing assembled switches can be reduced. There are available, however, any standard models completely assembled as required.

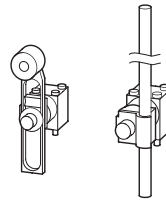
#### Angled roller lever

These actuating heads can be operated horizontally as well as vertically.



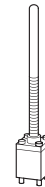
#### Actuating heads with adjustable lever length

If the mounting points of the limit switches are known during the planning of an application, but the kind of operation cam or its distance to the limit switch is not yet known, then the actuating heads with the adjustable lever or adjustable rod offer the flexibility for a final adjustment in the field.



#### Spring rod actuator

This model can be actuated from any direction perpendicular to the spring rod axis. The head can be used with objects with irregular shapes; the spring rod absorbs strong vibrations and, therefore, the snap-action switch is actuated only as required.






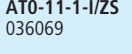


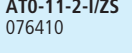


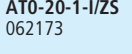

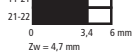
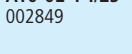

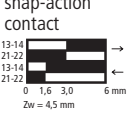
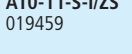

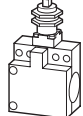

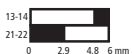
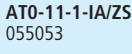


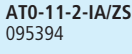


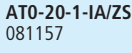

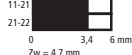
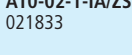


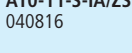


# AT 0 Compact Oiltight Limit Switches

## Complete Units



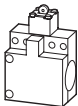
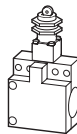
NEMA 4, 13 / IEC IP 65 / CE

Limit Switches

Contact		Contact Sequence		Plunger		Plunger	
N.O. = normally open N.C. = normally closed ⊕ = safety function with positively opening contacts to IEC/EN 60 947-5-1		■ closed □ open Zw = positive opening clearance to IEC/EN 60 947-5-1		EN 50 047 Form B Basic unit Type		Single hole mounting	
N.O. N.C.				Article No.		Article No.	
				Price see price list		Price see price list	
<b>Complete units</b>							
<b>Narrow enclosures</b>							
							
							
1	1	⊕		 13-14 21-22 0 2,9 4,8 6 mm Zw = 4,2 mm	<b>AT0-11-1-I</b> 095406	 <b>AT0-11-1-I/ZS</b> 036069	
1	1	⊕		 17-18 25-26 0 2,1 3,4 6 mm Zw = 4,7 mm	<b>AT0-11-2-I</b> 097779	 <b>AT0-11-2-I/ZS</b> 076410	
2	-	-		 13-14 23-24 0 1,3 6 mm	<b>AT0-20-1-I</b> 002860	 <b>AT0-20-1-I/ZS</b> 062173	
-	2	⊕		 11-21 21-22 0 3,4 6 mm Zw = 4,7 mm	<b>AT0-02-1-I</b> 005233	 <b>AT0-02-1-I/ZS</b> 002849	
1	1	⊕		 13-14 21-22 13-14 21-22 0 1,6 3,0 6 mm Zw = 4,5 mm snap-action contact	<b>AT0-11-S-I</b> 000487	 <b>AT0-11-S-I/ZS</b> 019459	
<b>Wide enclosures</b>							
							
1	1	⊕		 13-14 21-22 0 2,9 4,8 6 mm Zw = 4,2 mm	<b>AT0-11-1-IA</b> 007606	 <b>AT0-11-1-IA/ZS</b> 055053	
1	1	⊕		 17-18 25-26 0 2,1 3,4 6 mm Zw = 4,7 mm	<b>AT0-11-2-IA</b> 009979	 <b>AT0-11-2-IA/ZS</b> 095394	
2	-	-		 13-14 23-24 0 1,3 6 mm	<b>AT0-20-1-IA</b> 014725	 <b>AT0-20-1-IA/ZS</b> 081157	
-	2	⊕		 11-21 21-22 0 3,4 6 mm Zw = 4,7 mm	<b>AT0-02-1-IA</b> 017098	 <b>AT0-02-1-IA/ZS</b> 021833	
1	1	⊕		 13-14 21-22 13-14 21-22 0 1,6 3,0 6 mm Zw = 4,5 mm snap-action contact	<b>AT0-11-S-IA</b> 012352	 <b>AT0-11-S-IA/ZS</b> 040816	

# AT 0 Compact Oiltight Limit Switches Complete Units

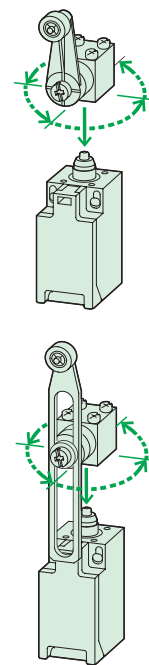
NEMA 4, 13 / IEC IP 65 / CE

Roller plunger EN 50 047 Form C		Roller plunger Single hole mounting	
Type	Price	Type	Price
Article No.	see price list	Article No.	see price list
			
AT0-11-1-I/RS 024204		AT0-11-1-I/ZRS 033696	
AT0-11-2-I/RS 064545		AT0-11-2-I/ZRS 074037	
AT0-20-1-I/RS 050308		AT0-20-1-I/ZRS 059800	
AT0-02-1-I/RS 090649		AT0-02-1-I/ZRS 000476	
AT0-11-S-I/RS 007594		AT0-11-S-I/ZRS 017086	
			
AT0-11-1-IA/RS 045561		AT0-11-1-IA/ZRS 052680	
AT0-11-2-IA/RS 085902		AT0-11-2-IA/ZRS 093021	
AT0-20-1-IA/RS 071665		AT0-20-1-IA/ZRS 078784	
AT0-02-1-IA/RS 012341		AT0-02-1-IA/ZRS 019460	
AT0-11-S-IA/RS 031324		AT0-11-S-IA/ZRS 038443	

**Notes**

The operating head can be turned in 90° stages to match the specified direction of actuation.  
For IP 65 protection, use cable gland M20 with a maximum connection thread length of 9.5mm (V-M20).

For external applications and temperatures down to - 40°C, use sealing membrane RBS-AT0.



Accessories	Page
Sealing membrane RBS-AT0	06/021
Cable glands	06/020

Limit Switches

# AT 0 Compact Oiltight Limit Switches Complete Units

NEMA 4, 13 / IEC IP 65 / CE

Limit Switches

Contact		Contact Sequence		Spring rod actuator head <sup>1)</sup>		Roller lever EN 50 047 Form E	
N.O. = normally open N.C. = normally closed ⊕ = safety function contacts with positively opening contacts to IEC/EN 60 947-5-1		■ closed □ open Zw = positive opening clearance to IEC/EN 60 947-5-1		Type	Price	Type	Price
N.O. N.C.				Article No.	see price list	Article No.	see price list
<b>Complete units</b>							
<b>Narrow enclosures</b>							
1	1	⊕		—			<b>AT0-11-1-I/AR</b> 017085
1	1	⊕		—			<b>AT0-11-2-I/AR</b> 057426
2	—	—		—			<b>AT0-20-1-I/AR</b> 043189
—	2	⊕		—			<b>AT0-02-1-I/AR</b> 083530
1	1	⊕		AT0-11-S-I/F 000475			<b>AT0-11-S-I/AR</b> 097767
		snap-action contact 					
<b>Wide enclosures</b>							
1	1	⊕		—			<b>AT0-11-1-IA/AR</b> 038442
1	1	⊕		—			<b>AT0-11-2-IA/AR</b> 078783
2	—	—		—			<b>AT0-20-1-IA/AR</b> 064546
—	2	⊕		—			<b>AT0-02-1-IA/AR</b> 005222
1	1	⊕		AT0-11-S-IA/F 024205			<b>AT0-11-S-IA/AR</b> 021832
		snap-action contact 					

**Notes**


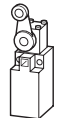
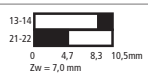
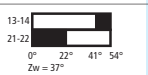
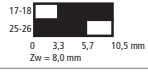
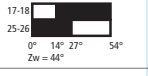


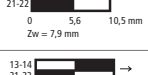
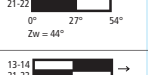
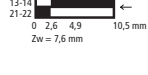
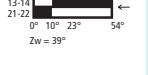

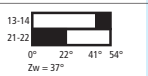
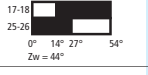

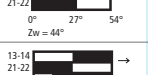
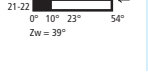
<sup>1)</sup> Not to be used as a safety switch. Use only with snap-action contacts.

For Immediate Delivery call KMParts.com at (866) 595-9616

# AT 0 Compact Oiltight Limit Switches Complete Units

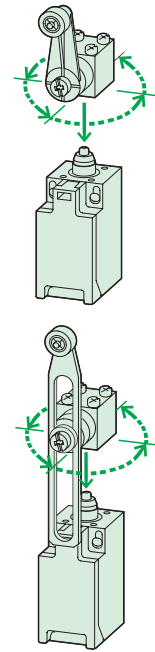
NEMA 4, 13 / IEC IP 65 / CE

Limit Switches

Angle roller lever		Side roller lever EN 50 047 Form A	
Type	Price	Type	Price
Article No.	see price list	Article No.	see price list
			
	<b>ATO-11-1-I/WR</b> 031323		<b>ATO-11-1-I/R</b> 021831
	<b>ATO-11-2-I/WR</b> 071664		<b>ATO-11-2-I/R</b> 062172
	<b>ATO-20-1-I/WR</b> 057427		<b>ATO-20-1-I/R</b> 047935
	<b>ATO-02-1-I/WR</b> 097768		<b>ATO-02-1-I/R</b> 088276
	<b>ATO-11-S-I/WR</b> 014713		<b>ATO-11-S-I/R</b> 005221
			
			<b>ATO-11-1-IA/R</b> 043188
			<b>ATO-11-2-IA/R</b> 083529
			<b>ATO-20-1-IA/R</b> 069292
			<b>ATO-02-1-IA/R</b> 009968
			<b>ATO-11-S-IA/R</b> 028951

**Notes**

The operating head can be turned in 90° stages to match the specified direction of actuation. For IP 65 protection, use cable gland M20 with a maximum connection thread length of 9.5mm (V-M20). For external applications and temperatures down to -40°C, use sealing membrane RBS-AT0.



Accessories	Page
Sealing membrane RBS-AT0	06/021
Cable glands	06/020

# AT 0 Compact Oiltight Limit Switches

## Complete Units

Limit Switches

Contact  
 N.O. = normally open  
 N.C. = normally closed  
 ⊕ = safety function with positively opening contacts to IEC/EN 60 947-5-1

Contact Sequence  
 ■ closed  
 □ open  
 Zw = positive opening clearance to IEC/EN 60 947-5-1

N.O. N.C.

### Adjustable roller lever

Type  
 Article No.

Price  
 see price list

### Actuating rod <sup>1)</sup>

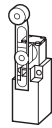
Type  
 Article No.

Price  
 see price list

### Complete units

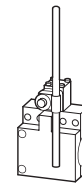
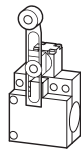
**totally insulated**

### Narrow enclosures



1	1	⊕		 13-14 21-22 0° 22° 41° 54° Zw = 37°	<b>AT0-11-1-I/V</b> 028950	<b>AT0-11-1-I/H</b> 019458
1	1	⊕		 17-18 25-26 0° 14° 27° 54° Zw = 44°	<b>AT0-11-2-I/V</b> 069291	<b>AT0-11-2-I/H</b> 059799
2	-	-		 13-14 23-24 0° 8° 54°	<b>AT0-20-1-I/V</b> 055054	<b>AT0-20-1-I/H</b> 045562
-	2	⊕		 11-12 21-22 0° 27° 54° Zw = 44°	<b>AT0-02-1-I/V</b> 095395	<b>AT0-02-1-I/H</b> 085903
1	1	⊕		 13-14 21-22 13-14 21-22 0° 10° 23° 54° Zw = 39°	<b>AT0-11-S-I/V</b> 012340	<b>AT0-11-S-I/H</b> 002848

### Wide enclosures




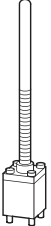







1	1	⊕		 13-14 21-22 0° 22° 41° 54° Zw = 37°	<b>AT0-11-1-IA/V</b> 050307	<b>AT0-11-1-IA/H</b> 040815
1	1	⊕		 17-18 25-26 0° 14° 27° 54° Zw = 44°	<b>AT0-11-2-IA/V</b> 090648	<b>AT0-11-2-IA/H</b> 081156
2	-	-		 13-14 23-24 0° 8° 54°	<b>AT0-20-1-IA/V</b> 076411	<b>AT0-20-1-IA/H</b> 066919
-	2	⊕		 11-12 21-22 0° 27° 54° Zw = 44°	<b>AT0-02-1-IA/V</b> 017087	<b>AT0-02-1-IA/H</b> 007595
1	1	⊕		 13-14 21-22 13-14 21-22 0° 10° 23° 54° Zw = 39°	<b>AT0-11-S-IA/V</b> 036070	<b>AT0-11-S-IA/H</b> 026578

Notes: <sup>1)</sup> Not to be used as a safety limit switch.

**AT 0 Compact Oiltight Limit Switches**  
Operating Heads

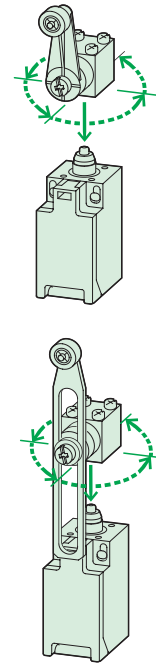
NEMA 4, 13 / IEC IP 65 / CE

	Style	Direction of actuation	Type Article No.	Price see price list
<b>Operating heads</b>				
	with roller plunger	Form C to EN 50 047	lateral	<b>RS-AT0</b> 053145
	with roller plunger	single hole mounting	lateral	<b>ZRS-AT0</b> 031083
	with roller plunger	single hole mounting	axial, lateral	<b>ZS-AT0</b> 033456
	with spring-rod actuator	–	lateral	<b>F-AT0</b> 050772
	with roller lever	Form E to EN 50 047	lateral	<b>AR-AT0</b> 046026
	with angled roller lever	–	lateral	<b>WR-AT0</b> 048399
	with side roller lever	Form A to EN 50 047	lateral	<b>R-AT0</b> 038907
	with adjustable roller lever	–	lateral	<b>V-AT0</b> 041280
	with actuating rod	–	lateral	<b>H-AT0</b> 043653

**Notes**

The operating heads can be turned in 90 ° stages to match the specified direction of operation.

For IP 65 degree of protection, use cable gland M20 with a maximum connection thread length of 9.5mm (V-M20).



Not to be used as a safety limit switch:

- F-AT0
- H-AT0

F-AT0 can be used only in conjunction with snap-action contacts.

Accessories	Page
Cable glands	06/020