

Section 15

Limit Switches

Obsolete Reed Limit Switches

Miniature Enclosed Reed	9007XA	15-1
Heavy Duty, Industrial Reed Contact	9007C	15-2

Heavy Duty, Industrial Precision and Oiltight

Type XA

Class 9007 / Refer to Catalog 9006CT1007

Miniature Enclosed Reed

Type XA is designed for use in applications where contact reliability, environmental immunity, small size, or low cost are required. Sealed construction keeps contaminants out of the contact area, making it the ideal choice for low voltage, low current circuits such as Programmable Controllers. ▲

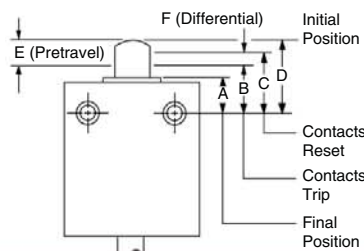
NOTE: Because reed switches are magnet operated, they should not be installed where strong magnetic fields may be present. The devices should always be checked for proper operation after installation.

Table 15.1: Class 9007 Type XA

Cable Length ■	Straight Plunger		Roller Plunger		Cross Roller Plunger	
	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.
	Type	Type	Type	Type	Type	Type
3 ft	XA7303E	XA7503E	XA7303D	XA7503D	XA7303DC	XA7503DC
6 ft	XA7306E	XA7506E	XA7306D	XA7506D	XA7306DC	XA7506DC
9 ft	XA7309E	XA7509E	XA7309D	XA7509D	XA7309DC	XA7509DC

- ▲ See the current ratings table in Section 21 of Digest 176 for contact specifications.
- Other cable lengths are available. Order by changing the last two digits of the type number to the length desired. Example: An XA7303E with 15 ft of cable would become an XA7315E.

Operating Data



Contacts: The contact is a fully encapsulated hermetically sealed reed, suitable for controlling solid state loads as well as industrial relays. Switches can also be used as inputs to intrinsically safe systems. Use of a transient suppressor will extend life of the switch when using on heavy electrical loads.

Type XA cannot be used in Division 2 locations as the Type C Reed switches can, since the National Electrical Code (NEC) requires provisions for conduit connection. The Type C Reed switches have this provision for conduit and the Type XA does not.

Enclosure Construction: Die cast zinc-baked gray enamel finish. Meets NEMA Type 2, 4, 4X, 6P, 12 and 13 requirements. Oiltight, dusttight, watertight, and submersible.

Cable: SJTOWA jacketed cable with 18 gauge wire.

Ambient Temperature Range: -20 to + 140 °F (-28.9 to 60 °C).

NOTE: The XA switch is available with 3 ft of cable and 3 pin Brad Harrison male connector No. 40904 (or equivalent): **Form Y190.**

	Top Push Rod (Type E)	Roller Plunger (Types D, DC)
Initial position (D)	0.690 in.	1.190 in.
Trip position (B)	0.620 in.	1.120 in.
Pretravel (E)	0.07 in.	0.07 in.
Reset position (C) max.	0.655 in.	1.155 in.
Differential (F)	0.015 in.	0.015 in.
Final position (A)	0.492 in.	0.992 in.
Total stroke	0.198 in.	0.198 in.
Operating force (max.)	2.75 lb	2.75 lb

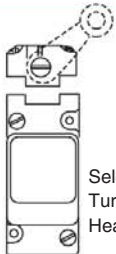
Heavy Duty Precision Turret Head Type

These switches can be used with standard industrial relays and starters.
UL Listed for Class I, II and III Division 2 Groups B, C, D, F and G hazardous locations.
They can also be used as inputs to intrinsically safe systems.

NOTE: Because reed switches are operated by a magnet, they should not be installed in areas where strong magnetic fields may be present. The devices should always be checked for proper operation after installation.

Table 15.2: All 9007C Switches Are Rated NEMA 6P and UL Type 6P

		Lever Arm Type				Side Plunger Type				Plug-in	
		Standard Pre-travel Spring Return	Low Differential Spring Return	Extra Light Operating Torque Spring Return	Maintained Contact	Side Roller-Plunger Spring Return Vertical Roller Type	Side Push-Rod Plunger Spring Return	Side Push-Rod Plunger Adjustable Spring Return	Side Push-Rod Plunger Maintained Contact	Plug-in Unit without Head	Plug-in Receptacle Only
		CW & CCW▲	CW & CCW▲	CW & CCW▲	CW (Trip) CCW (Reset)						
Select Basic Switch	Contacts	Type				Type				Type	
	Reed	1 N.O.	C84B2	C84A2	C84N2	C84C	C84F	C84G	C84GD	C84H	▼
Standard Box Plug-in	1 N.C.	C86B2	C86A2	C86N2	C86C	C86F	C86G	C86GD	C86H	▼	CT54 Δ
Head Only Δ		B	A	N	C	F	G	GD	H	—	—
Nominal Operating Data	Pre-travel	13°	7°	13°	45°	0.110" (2.8 mm)			0.14" (3.6 mm)	—	—
	Total Travel	90°	90°	90°	90°	0.25" (6.3 mm)			0.25" (6.3 mm)	—	—
	Differential	7°	4°	7°	—	0.07" (1.8 mm)			—	—	—
	Reverse Overtravel	90°	90°	90°	—	—			—	—	—
Operating Torque/Force		4 lb-in (0.45 N•m)	4 lb-in (0.45 N•m)	25 in-oz (0.08 N•m)	3 lb-in (0.34 N•m)	4 lb (0.45 N•m)			7 lb (0.80 N•m)	—	—
	Repeat Accuracy—Linear travel of cam 1-1/2" (38 mm) lever arm	± 0.006" (0.15 mm)	± 0.003" (0.07 mm)	± 0.006" (0.15 mm)	± 0.006" (0.15 mm)	± 0.003" (0.07 mm)			—	—	—

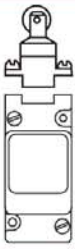


Select Turret Head



15 LIMIT SWITCHES

		Top Plunger Type				Wobble Stick Type				Plug-in		
		Top Roller-Plunger Spring Return	Top Push-Rod Plunger Spring Return	Top Push-Rod Plunger Adjustable Spring Return	Palm Operated ♦	Universal □	Wobble Stick DELRIN Extension □	Wobble Stick Wire Extension □	Wobble Stick Coil Spring Extension □	Cat Whisker	Plug-in Unit without Head	Plug-in Receptacle Only
Select Basic Switch	Contacts	Type				Type				Type		
	Reed	1 N.O.	C84D	C84E	C84ED	C84R ♦	C84JKC	C84J	C84K	C84KC	C84L	▼
Standard Box Plug-in	1 N.C.	C86D	C86E	C86ED	C86R ♦	C86JKC	C86J	C86K	C86KC	C86L	▼	CT54 Δ
Head Only Δ		D	E	ED	R ♦	JKC	J	K	KC	L	—	—
Nominal Operating Data	Pre-travel	0.100" (2.5 mm)				13° (Any Direction)				25°	—	—
	Total Travel	0.25" (6.3 mm)				90°				90°	—	—
	Differential	0.05" (1.3 mm)				11°				18°	—	—
	Operating Torque/Force	4 lb				3 lb-in				7 in-oz	—	—
Repeat Accuracy—Linear travel of cam	± 0.003"				—				—	—	—	



Select Turret Head



▼ Plug-in Replacement Units To order basic switch and head less the plug-in receptacle base, substitute the letters "CO" for the first "C" in the type number.
Example: Open type replacement for Type C84B2 is Type **CO84B2**.

▲ These devices are factory set to operate the contacts in both the CW and CCW directions. Mode of operation is field convertible to CW only or CCW only.
To order factory converted devices—for CCW only operation, change the "2" at the end of the type number to "1" (Example: C84B2 becomes C84B1); for CW only operation, delete the "2" at the end of the type number (Example: C84B2 becomes C84B).

■ Can be converted to horizontal roller type in the field. To order horizontal roller version, add the letter "H" at the end of the equivalent vertical roller version type number (Example: C84F would become C84FH).

♦ Price does not include mushroom button. Must be ordered separately from Section 21 of Digest 176.

★ To lock the nut in the desired position, crimp the slot near the bottom of the nut.

▼ Plug-in units less head are not available as separate units. Order complete plug-in replacement units instead. Plug-in replacement units include the plug-in unit and head.

Δ These products are currently available.

□ Wobble stick extensions are available separately for the universal head or as replacements for complete devices. See Section 21 of Digest 176.



Acceptable Wire Sizes: 12–22 AWG
Recommended Terminal Clamp Torque: 7 lb-in (0.80 N•m)