INSTALLATION AND MAINTENANCE INSTRUCTIONS

ULTRA*KAM™ ROTATING CAM LIMIT SWITCH

DESCRIPTION
The ULTRA*KAM™ rotating cam switch features a unique cam design which allows independent dwell and timing adjustments to be made with an ordinary screwdriver. We call the feature ULTRA*ADJUST. Dwell from 18° to 356° can be achieved with normally open (NO) switches, without the need to use normally closed (NC) switches to achieve short dwells. Standard models have 4, 6, 8, or 12 circuits with all cams mounted on a single shaft. Each cam operates the contacts of one snap switch.

The optional ULTRA*CHECK mounting base dampens shock and vibration and keeps constant tension on the drive chain or belt. It can also be used to detect a broken drive chain or belt.

INSTALLATION
Remove all source of power.

Mount the limit switch in desired position using the four mounting holes provided in the enclosure. The switch is normally driven by a chain or belt. If the input shaft is to be driven directly by another shaft, a flexible coupling is recommended to eliminate stress on the shaft and bearings. The input shaft is provided with a slot for a #606 Woodruff key for ease in mounting any type of sprocket, pulley or coupling. Shaft speed greater than 300 rpm is not recommended.

If switch is mounted on an ULTRA*CHECK mounting base, secure base in desire position and complete electrical wiring to SPDT switch in base prior to operating equipment.

Warning
Always disconnect power before installing or servicing. Failure to do so could lead to product damage or personal injury.

Cam Adjustment
Each cam must be adjusted separately to correlate the motion of the equipment that it is controlling. Two adjustments are required on each cam:
1. DWELL is adjusted for the proper degrees of shaft rotation.
2. Second, the cam is rotated on the shaft to set the TIMING...that point at which the switch is actuated.

Adjusting Dwell
Figure 2. Adjusting Dwell

To adjust cam of each switch unit:
1. Remove all power from the device.
2. Remove the enclosure cover.
3. Position shaft at “0” by aligning “0” on the shaft indexing ring (BLUE numerals) with the pointer on the frame (Fig 1).
4. Check to make sure that the ORANGE “0” on the cam to be adjusted is aligned with the pointer on the frame. If cam must be rotated, use a screwdriver to turn the ORANGE worm on the side of the cam (Fig 3).
5. Adjust DWELL by turning the WHITE worm on the cam until the desired number of degrees (WHITE numerals) is aligned with the pointer on the frame (Fig 2).
6. Adjust the TIMING by turning the ORANGE worm to rotate the cam until the desired marking on the scale (ORANGE numerals) aligns with the pointer.

NOTE: With shaft positioned at “0” (Blue numerals) the ORANGE scale can be used to read shaft position at which the switch will be activated. The WHITE scale can be used to read shaft position at which the switch will be deactivated.

The difference between the WHITE scale and the ORANGE scale is the DWELL.

To adjust cam of each switch unit:
7. Repeat for each cam.
8. Replace the enclosure cover.

Adjusting Timing
Figure 3. Adjusting Timing

Figure 1. Internal Switch Mechanism
MAINTENANCE
The device has been permanently lubricated at the factory and shaft bearings are sealed. Periodic lubrication is not required.

⚠️ WARNING
Always disconnect power before installing or servicing. Failure to do so could lead to product damage or personal injury.

SWITCH REPLACEMENT
To replace switch unit:
1. Remove all power from the device.
2. Remove the enclosure cover.
3. Turn cam so that cam lobe is away from cam follower on switch.
4. Remove two screws retaining switch, mounting block and shim. Remove old switch assembly (Fig 4).
5. Install new switch, shim and mounting block with cam follower. Be sure to insert shim between switch and mounting plate.
6. Tighten both mounting screws. CAUTION: Do not over-tighten. Excessive tightening can break mounting block.
7. Replace enclosure cover and restore power.

REPLACEMENT SWITCHES
Switch kits include switch shown, mounting block, cam follower, shim plate and two mounting screws.

<table>
<thead>
<tr>
<th>KIT NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>EUK–SP</td>
<td>Single Pole Double Throw switch kit</td>
</tr>
<tr>
<td>EUK–DP</td>
<td>Double Pole Double Throw switch kit</td>
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<tr>
<td>SPDT</td>
<td>Single Pole Double Throw switch only</td>
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<tr>
<td>DPDT</td>
<td>Double Pole Double Throw switch only</td>
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CAM REPLACEMENT
Removal and/or replacement of individual cams is not a recommended field service procedure because of the requirement for specialized tools and large amount of labor. Contact factory for more information.