

HOW TO SELECT A D.C. POWER CONTACTOR FOR YOUR APPLICATION:

1. *Determine environmental conditions.*

- Water-resistant, non-submersible enclosure
 - Type 120
 - Type 586
- Dust-proof enclosure
 - Type 70
 - Type 124
- Hermetically sealed
 - Type 686

2. *Determine pole form requirements.*

- SPNO - Single pole, normally open
- SPDT - Single pole, double throw

3. *Determine maximum inrush and carrying current.*

- Exceeding the rated current for either inrush or continuous full load could result in welded contacts and overheating.
- The maximum safe operating current for any STANCOR D.C. Power Contactor is the rated current.
- Contact material is silver alloy for most parts.

4. *Contact material selection*

- Copper contacts are more susceptible to contact erosion due to high inrush and high brake amperages, resulting in a shorter life.
- Silver alloy contacts are harder and are less susceptible.

5. *Determine physical requirements.*

- Each type of D.C. Power Contactor has a suggested mounting position to achieve ideal performance. These positions are:
 - Type 70: Plunger vertical with cap down
 - Type 120: Coil terminals up or horizontal
 - Type 124: Vertical plane with coil terminals up
 - Type 586: Vertical plane with coil terminals up
 - Type 686: Not position sensitive

6. *Select coil voltage.*

- The maximum safe operating voltage for any STANCOR D.C. Power Contactor is 10% over the nominal coil voltage. Standard pull-in is 75% of nominal voltage.
- Caution must be used in coil selection for use in 12 volt systems where battery charging may be exposed to continuous, higher-than-rated voltage. STANCOR offers some parts with 15 volt coils for this type of application.

7. *Determine whether isolated, common or ground coil is required.*

8. *Determine Duty Cycle requirement.*

- For starting applications or any application with rapid on-off cycling, an intermittent duty coil will be necessary. Coil construction of these parts will compensate for heat build-up associated with rapid cycling.
- Duty cycle for intermittent parts is 30 seconds ON maximum; 6 minutes OFF minimum.
- For applications with cycle times longer than stated above, a continuous duty coil may be used. All standard catalog types are available with continuous duty coils.

9. *Determine agency requirements.*

- The Type 70 is the only STANCOR D.C. Power Contactor which is a U.L. recognized component. It has been tested under the UL 583 standard for Industrial Lift Trucks, and is recognized in UL File #AU2138.
- The Type 120, Type 124, and Type 586, although built to meet UL 583 requirements, have not been submitted for testing.

SOME THINGS TO BE AWARE OF:

1. *Mounting location and position can affect performance.*

- Avoid mounting a D.C. Power Contactor directly on an engine block or on extensions from an engine block. Although built to withstand some vibration, excessive vibration and shock will cause failure.

2. *Energizing a coil without an applied load may jeopardize system operation.*

- This no-load condition is commonly referred to as a “dry make.”
- If no load is applied when the coil is energized and then an operator later attempts to turn on a headlamp, for example, the result will often be a failure of the headlamp to function.
- If a small load is applied when a coil is energized, an internal arc is generated between the two contact surfaces. This arc serves the purpose of burning off any surface oxides and ensuring a good make and proper continuity.

3. *Extremely low system voltage or voltage drops through the system can affect performance of a D.C. Power Contactor.*

- If the power source is a battery, proper charge should be maintained.
- Contact the factory for drop-out values specific to each part number.

4. *A small load (ex. headlamp) should be applied during lab testing and measurement in order to ensure reliable results.*

5. *Care should be taken to match electrical life requirements to the electrical life rating of each part.*