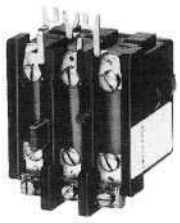
Replacement Parts

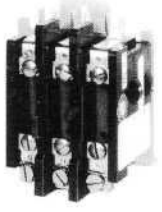
■ Overload Relays

Bimetal Class 16



Third Character of Cat No	Fourth Character of Cat No	Number of Poles	Cat No	Price
N	E	1	**48DC17A**	$66
		3	**48DC37A**	69
B	E	1	**48DC17AA6**	66
		3	**48DC37AA6**	69
C	E	1	**48EC17AA6**	90
		3	**48EC37AA6**	93
D, E	E	1	**48GC17AA6**	99
		3	**48GC37AA6**	102
F, G	E	1 Requires 3 for 3 Ph	**48HC17A**	60
H	F	3	**48HC37AA2**	174
I	F	3	**48IC37AA6**	180
J	B	Left	**48JA17AA2L**	99
		Center	**48JA17AA2R**	99
		Right	**48JA17AA3R**	117
R, K	F	3	**48DC37A4**	63
1 Current Transformer per pole required			**48KBIT**	213
M	F	3	**48DC37A4**	63
1 Current Transformer per pole required			**48MBIT**	213

Ambient Compensated Bimetal Class 16



Third Character of Cat No	Fourth Character of Cat No	Number of Poles	Cat No	Price
N	E	1	**48DC18A**	$78
		3	**48DC38A**	81
B	E	1	**48DC18AA6**	78
		3	**48DC38AA6**	81
C	E	1	**48EC18AA6**	102
		3	**48EC38AA6**	105
D, E	E	1	**48GC18AA6**	111
		3	**48GC38AA6**	114
F, G	E	1 Requires 3 for 3 Ph	**48HC18A**	75
H	F	3	**48HC38AA2**	192
I	F	3	**48IC38AA6**	198
J	B	Left	**48JA18AA2L**	114
		Center	**48JA18AA2R**	114
		Right	**48JA18AA3R**	138
R, K	F	3	**48DC38A4**	75
1 Current Transformer per pole required			**48KBIT**	213
M	F	3	**48DC38A4**	63
1 Current Transformer per pole required			**48MBIT**	213

16

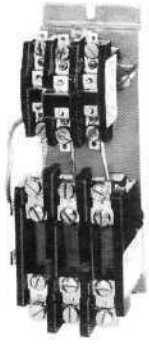
DEFINITE PURPOSE STARTERS

Definite Purpose Starters

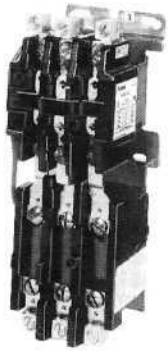
■ 60 FLA 60 Hz 600VAC Max

■ For Centurion 2000 Starters Thru 650 FLA see page 11.

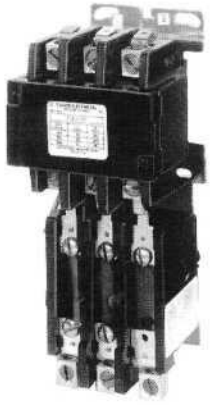
- Weld Resistant Contacts
- Dependable Overload Relays
- Non Tracking Arc Box
- Compact
- Straight Thru Wiring



25A



30A, 40A



50A, 60A

APPLICATION

Furnas Electric Class 16 definite purpose magnetic starters are designed for the control of air conditioning, heating and refrigeration equipment. They provide dependable, full voltage control for compressors, grain driers, conveyors and custom pump motors. These controls are available in 5 sizes from 25-60 FLA at 240V, 480V and 600V.

CONSTRUCTION

Class 16 definite purpose magnetic starters incorporate the following construction features.

Common Mounting– 25-60A definite purpose starters share common mounting configurations and dimensions.

Straight Thru Wiring– Line terminals are located at the top, load terminals at the bottom. This construction eliminates looping wires around the control and reduces wiring costs.

Magnet– Laminated layers of silicon steel are riveted to form a durable magnet. The horizontal type armatures operate with a snap action and a short stroke that reduce contact bounce and mechanical wear. A shading coil insures positive sealing of the armature. An air gap in the central leg of the magnet prevents residual magnetism from interfering with normal contact drop out.

Molded Arc Box (Contact Block)– Molded from rugged thermosetting materials, Class 16 arc boxes resist arc tracking and the stresses of heat and severe impact. Sizes 50-60A use a two piece enclosed arc box.

Silver Cadmium Oxide Contacts– Furnas definite purpose starters are equipped with silver cadmium oxide contacts, a material having high conductivity and superior resistance to welding and arc erosion. These contacts are the double break type with large surface areas to minimize electrical resistance and attendant heat.

Dependable Thermal Overload Relays– Furnas overload relays are designed to protect motors from excessive current and resultant damage. Mechanical overloading, single phasing, stalled rotor and low voltage are some of the causes of excessive current. Proper selection of heater elements for the overload relay will prolong motor life and help prevent nuisance trips. Furnas overload relays and heater elements are designed to parallel the thermal characteristics of typical electric motors. They trip out on sustained

Coil Data

FLA	Third Character of Cat No	Watts	VA (Nominal) Inrush	VA (Nominal) Sealed	Volts (Nominal) Pick-up	Volts (Nominal) Drop-out
25	N	3.5	35	8	85%	50%
30, 40	B, C	2.5	52	6.2	85%	50%
50, 60	D, E	4.0	92	10	85%	58%

For Centurion 2000 starters thru 650 FLA see page 11.

overload but not on the high starting currents of normal operation.

Bimetal overload relays are available in temperature compensated and noncompensated units. A temperature compensated unit and selected heater elements prevent nuisance tripping caused by locating the controller in an ambient temperature different than that of the motor. Both temperature compensated and noncompensated units are equipped with normally closed control circuit contacts and accept standard or quick trip heater elements. A manual-automatic selector offers choice of reset mode.

Overload relays feature adjustable trip current points which can be field set within ±15% of the rated trip current. Single unit overload relays are designed with adjustable trip especially for use on single phase starters.

Tri-element block overload relays for 3 phase feature three overloads in a common housing. The bimetal strips are independently calibrated and any one of the three strips may sense heat generated by excessive current flow in the power circuit. Bimetal strips deflect when an overload occurs, causing a snap action mechanism to operate and break a normally closed circuit. This overload may be manuallytripped to open the contacts.

ACCESSORIES & MODIFICATIONS

Accessories are available, either factory installed or in field kit form, to make Furnas definite purpose starters suitable for an even greater variety of applications.

Coils– 30-60A starters are supplied as standard with a shrouded coil. This design improves corrosion resistance and minimizes the possibility of failure by contaminants. The shrouded coil eliminates the need for molded coils in high temperatures or humid applications. Epoxy encapsulated coils are also available as an option on 30-60A devices at an additional charge.

Dual Voltage/Dual Frequency Coils– Dual voltage tape wound coils are available in place of standard single voltage coils on 30A, 40A, 50A and 60A starters at additional cost. These coils operate on either 50 or 60 Hz and are rated 120/240V or 240/480V. The dual voltage coils convert from lower to higher or higher to lower voltage connections by simply changing the coil jumpers.

Auxiliary Electrical Interlock– Furnas supplies one or two interlocks as a factory modification or for field installation. Available with either normally open or normally closed contacts.

Enclosure– Class 16 magnetic starters can be supplied in a NEMA type 1 general purpose enclosure. This enclosure protects personnel from accidental contact with electrical apparatus. It meets the needs of indoor applications in a normal atmosphere free of excessive moisture, dust and explosive materials.

ORDERING INFORMATION

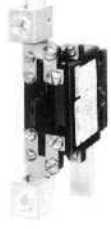
- Heater Elements page 42.
- Modifications page 31.
- Dimensions page 32.
- Replacement Parts page 38.

REFERENCE LITERATURE

Instruction Sheets and Replacement Parts

Size FLA	Instruction Sheet	Replacement Parts
25	PM-60.1	16-GNE
30, 40	PM-60.1	16-GBE
50,60	PM-60.1	16-GDE

Tri element block overloads are used on 3 phase.



Single unit overloads are used on single phase.