

PART 1 - GENERAL

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| <u>1.1 RELATED REQUIREMENTS</u> | .1 | Section 01 33 00 - Submittal Procedures. |
| | .2 | Section 26 05 00 - Common Work Results - Electrical. |
| <u>1.2 REFERENCES</u> | .1 | International Electrotechnical Commission (IEC)
.1 IEC 947-4-1-2002, Part 4: Electromechanical contactors and motor-starters. |
| <u>1.3 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Product Data:
.1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations. |
| | .3 | Shop Drawings:
.1 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures
.1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Newfoundland and Labrador, Canada.
.2 Provide shop drawings for each type of starter to indicate:
.1 Mounting method and dimensions.
.2 Starter size and type.
.3 Layout and components.
.4 Enclosure types.
.5 Wiring diagram.
.6 Interconnection diagrams. |
| <u>1.4 CLOSEOUT SUBMITTALS</u> | .1 | Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals. |
| | .2 | Submit operation and maintenance data for each type and style of motor starters for incorporation into maintenance manual. |
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| 1.4 CLOSEOUT
SUBMITTALS
(Cont'd) | .3 | Extra Materials:
.1 Provide listed spare parts for each different size and type of starter.
.1 3 contacts, stationary.
.2 3 contacts, movable.
.3 1 contacts, auxiliary.
.4 1 control transformers.
.5 1 operating coil.
.6 2 fuses.
.7 10 % indicating lamp bulbs used. |
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| 1.5 DELIVERY,
STORAGE AND
HANDLING | .1 | Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements. |
| | .2 | Deliver materials to site in original factory packaging, labelled with manufacturer's name, address. |

PART 2 - PRODUCTS

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| 2.1 MATERIALS | .1 | Starters: to IEC 947-4 with AC4 utilization category. |
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| 2.2 MANUAL MOTOR
STARTERS | .1 | Single and three phase manual motor starters of size, type, rating, and enclosure type as indicated, with components as follows:
.1 Switching mechanism, quick make and break.
.2 One and three overload heaters, manual reset, trip indicating handle. |
| | .2 | Accessories:
.1 Toggle Key switch pushbutton: heavy duty labelled as indicated.
.2 Indicating light: heavy duty type and colour as indicated.
.3 Locking tab to permit padlocking in "ON" or "OFF" position. |

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| 2.3 FULL VOLTAGE
MAGNETIC STARTERS | .1 | Magnetic and combination magnetic starters of size, type, rating and enclosure type as indicated with components as follows:
.1 Contactor solenoid operated, rapid action type.
.2 Motor overload protective device in each phase, manually reset from outside enclosure. |
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- 2.3 FULL VOLTAGE
MAGNETIC STARTERS
(Cont'd)
- .1 (Cont'd)
 - .3 Wiring and schematic diagram inside starter enclosure in visible location.
 - .4 Identify each wire and terminal for external connections, within starter, with permanent number marking identical to diagram.
 - .2 Combination type starters to include fused disconnect switch with operating lever on outside of enclosure to control disconnect motor circuit interrupter circuit breaker, and provision for:
 - .1 Locking in "OFF" position with up to 3 padlocks.
 - .2 Independent locking of enclosure door.
 - .3 Provision for preventing switching to "ON" position while enclosure door open.
 - .3 Accessories:
 - .1 Pushbuttons and selector switches: standard heavy duty oil tight labelled as indicated.
 - .2 Indicating lights: heavy duty type and color as indicated.
 - .3 1-N/O and 1-N/C spare auxiliary contacts unless otherwise indicated.
- 2.4 CONTROL
TRANSFORMER
- .1 Single phase, dry type, control transformer with primary voltage as indicated and 120 V secondary, complete with secondary fuse, installed in with starter as indicated.
 - .2 Size control transformer for control circuit load plus 20% spare capacity.
- 2.5 ACCESSORIES
- .1 Pushbutton: heavy duty, oil tight as required.
 - .2 Selector switches: heavy duty, oil tight as required.
 - .3 Indicating lights: heavy duty, oil tight, type and colour as indicated.
- 2.6 FINISHES
- .1 Apply finishes to enclosure in accordance with Section 26 05 00 - Common Work Results for Electrical.
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| <u>2.7 EQUIPMENT IDENTIFICATION</u> | .1 | Provide equipment identification in accordance with Section 26 05 00 - Common Work Results for Electrical. |
| | .2 | Manual starter designation label, white plate, black letters, size 1, engraved as indicated. |
| | .3 | Magnetic starter designation label, white plate, black letters, size engraved as indicated. |

PART 3 - EXECUTION

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| <u>3.1 INSTALLATION</u> | .1 | Install starters and control devices in accordance with manufacturer's instructions. |
| | .2 | Install and wire starters and controls as indicated. |
| | .3 | Ensure correct fuses installed. |
| | .4 | Confirm motor nameplate and adjust overload device to suit. |
| <u>3.2 FIELD QUALITY CONTROL</u> | .1 | Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical and manufacturer's instructions. |
| | .2 | Operate switches and contactors to verify correct functioning. |
| | .3 | Perform starting and stopping sequences of contactors and relays. |
| | .4 | Check that sequence controls, interlocking with other separate related starters, equipment, control devices, operate as indicated. |