

Partial List of Electrical Equipment for Damp and Corrosive Environment

Each year there are more wiring materials on the market that will meet the requirements of the corrosive and wet atmospheres in agricultural buildings. Ten years ago many of these devices were not available. The following list of equipment is presently recommended with the limitations noted. It is called a partial list as there may be other suitable equipment. Select this or identical equipment which will make the agricultural building electrically safe and insurable when properly installed and maintained.

Lampholders

Incandescent--(order with plastic globes)

- ♦ McGill 605 (1/2") or 606 (3/4")--rated for 60EC conductors, rated watertight
- ♦ Superior AO-159-60 = rated for 60EC conductors but not watertight
- ♦ Superior AO-159 or Carlon E960LV (105-130EC rated wiring required)--Note special high temperature conductor insulation requirements. Not approved for use in livestock buildings unless gasketed and of a watertight design. (Note: watertight and waterproof are not synonymous terms)

Fluorescent--industrial quality, corrosion-resistant, gasketed

- ♦ H.E. Williams, Inc. Carthage, Missouri, (417) 358-4034
- ♦ Series 86 fully enclosed, fiberglass, 1- or 2-lamp industrial, 4 or 8 ft (Order with Lexan polycarbonate diffuser; specify for wet location. Note: WET=end wiring hub WTT = top wiring hub)
- ♦ Nu-Art STAL-2-4', 6' or 8' (aluminum w/ stainless steel latches)
- ♦ Rig-a-Lite HEF series 46901Z or 46913Z
- ♦ McGill--compact; 22W; wet locations; rated for 90EC conductors -- 605-FL22 (1/2"); or 606-FL22 (3/4")
- ♦ Retrolite Corp. 703-789-7383
- ♦ Fluorescent. Model CVP, 2', 4' or 8' models--fiberglass housing with lexan diffuser (with optional brackets for rafter mounting). Starts at 0EF
- ♦ Fluorescent compact. Model CVT with prism or clear diffuser 5,7,9,22 or 28 W. (Start at -20EF)
- ♦ Fluorescent retrofit bulbs--5,7,9 13 watt HID
- ♦ High Pressure Sodium Megalux7 50, 70, 100, 150 watt. Clear prism adjustable diffuser. (Bracket for rafter mounting included) (Retrolite low boy luminaire, lexan lens)
- ♦ General Electric U1M15S1H418ELW - low bay with wet location kit Switches, Boxes and Receptacles
- ♦ Switch box--Carlon E981DE or Challenger FSC

- ♦ Switch operator/cover--Carlton E98TSC
- ♦ Switch cover--Challenger FSC55 or Carlton E98SSC
- ♦ Combination gasket and switch bubble--Pass and Seymour 4515
- ♦ Corrosive-resistant stainless steel switch cover plate--Pass and Seymour S-725
- ♦ Grounding switch--Leviton 5521-2
- ♦ Press switch--Hubbell 1251
- ♦ Weatherproof plate, press switch--Hubbell 1750
- ♦ Receptacle cover--Challenger FSC53 or Carlton E98DRC
- ♦ Weatherproof receptacle cover for protecting plugs left in receptacle (raintight while in use)--
 - Taymac 35710 for single receptacle, 10310 for duplex receptacle, 20310 for GFCI receptacle
 - Intermatic--numerous options, including WP1000 for GFCI, WP1010 for duplex/receptacle and WP14 for single receptacle
 (Carlton, Red Dot, T&B and others now make raintight when- in-use covers)

Individual Motor Protection

- ♦ Fused switch--Bussmann Model SSN (115 Vac)
Circuit breaker--Aerovent (230 Vac, 2-7A)
- ♦ Combination switch (e.g. Carlton E98TSC) and fuse holder (Midwest FH-1) in a Carlton E98SRC single outlet cover (115 Vac)
- ♦ Bussmann Model STY fused switch (230 Vac) in corrosion-resistant enclosure (Klockner Moeller Gi-G18x18x12 w/ lift-off cover or RobRoy Industries J606 HLLW w/ hinged cover)
- ♦ Carlton 230V switch box/cover--No. V-22FA

Junction Boxes

- ♦ For lampholders--Challenger AO4-12 or Carlton E960D
- ♦ General use--Challenger AO-4 or Carlton E970D
- ♦ Cover (general use)--Challenger AO-51

Conduit, Cables and Conductors

- ♦ Nonmetallic liquidtight flexible conduit--Carlton Carflex; T&B Xtraflex; Hubbell Polytuff I
- ♦ Type UF cable (rated 90EC for temperatures but 60EC for ampacity)
- ♦ Rigid nonmetallic conduit, schedule 40 or 80
- ♦ Expansion joint--Carlton E945 (install minimum of one 6: joint per 50' of conduit run)
- ♦ Carlton E955 short expansion coupling (1" expansion) 1/2-in to 2-in size
- ♦ Type THHN/THWN conductors (90EC rating)

Note: Electrical Nonmetallic Tubing (ENT) is not recommended in livestock buildings

Adapters, Fittings, Connectors, Etc.

- ♦ Thread to conduit--Carlson E943D
- ♦ Conduit to thread--Carlson E940D
- ♦ UF cable fittings--Hubbell F2 (10/2wg-14/2wg) (specify cable size)
- ♦ Nonmetallic staples
- ♦ Nonmetallic liquidtight flexible conduit fittings--Carlson LT43D
- ♦ Nonmetallic strain-relief cord fittings--Hubbell F2 (S8) (specify cord size)
- ♦ Conduit (3/4") to flexible cord or cable (w/assorted (6) grommets)--Carlson H978E
- ♦ Twist-on waterproof wire connectors--King "One Step" - (assorted sizes) 7 St. Louis, MO, 800-633-0232 Ideal - (assorted sizes)
- ♦ Waterproof plug/receptacles for cords:
 - Plug: Woodhead 14W47 (15A, 125V, 5-15P)
 - Receptacle: Woodhead 15W47 (15A, 125V, 5-15R)
 - Corrosion-Resistant Entrance Enclosure

Nonmetallic hinged enclosures--

- ♦ Carlson Himeline HM3224D, Hoffman A30H2408GQRLP
- ♦ Klockner Moeller--GSK-Ci 36 x 50 x 12-T-NA Main panel (to fit above box)--Cutler Hammer CH85 (100 amp)
- ♦ Distribution panel enclosure RobRoy Industries, NPB 45205, with Square D NQ042444-2 main panel

Flexible Cords and Connectors

- ♦ Cords used should have a "wet" rating such as SJW, STW, SOW, SJTEW (cords with an E designation are flexible at cold temperatures, are sunlight resistant and suitable for use outdoors)

Watertight Wraps and Covers

- ♦ Direct bury splice kit--3M Scotchlok DBY-6 (not for UV exposure)
 - ♦ Mastic tape--3M Scotch-Seal 2229 (UV resistant)
 - ♦ Heat shrinkable tubing, heavy wall--ILSCO No. 21^{i***}
 - ♦ Heat shrinkable endcaps, heavy wall--ILSCO No. 23^{ii***}
 - ♦ Heat shrinkable wraparound sleeves--Raychem ShrinkWrap CRSM (specify conductor size)
 - ♦ Heat shrinkable end caps--Raychem ShrinkCap ESC (specify conductor size)
 - ♦ Heat shrinkable tubing--Raychem ShrinkTube CSM (specify conductor size)
 - ♦ Insulating/sealing no heat Raychem RVS (specify conductor size)
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