DISTRIBUTION CUTOOUTS

ICX Cutout
Instructions for installation and use

SAFETY NOTICE
Keep these instructions available to those responsible for product’s proper installation, maintenance and operation. Contact your local ABB representative if more information is desired regarding installation, operation or maintenance of equipment.

Follow your company’s safety procedures. Read these instructions carefully before attempting to install, operate, or maintain this device. Failure to follow these instructions could cause severe personal injury, death, or property damage.

Apparatus covered by this instruction literature should be operated and serviced only by competent personnel familiar with good safety practice. These instructions are written for such personnel and are not intended as a substitute for proper training and experience in safety procedures for this type of equipment.

Introduction
ICX fused cutouts are outdoor products used for over-current protection of high voltage circuits up to 10,000 feet above sea level. They are designed and tested in accordance with IEEE C37.41-2008/2016 and IEEE C37.42-2016.

Description
Each phase of a circuit to be protected is to have a cutout. Many purchase options exist, and all possible contingencies and variations of this equipment are not covered by these instructions.

The nameplate (6) lists the style number, date of manufacture, Instruction guide catalog number and ratings that must not be exceeded (full voltage ratings and interrupting/continuous current ratings). In addition, the insulator’s manufacturing date, BIL voltage rating and the maximum current rating are embossed on the silicon insulator (9).

Receipt
On receipt of the cutout, carefully inspect the shipping packaging and units for any visible signs of damage. Check nameplates (6) to be sure the desired ratings have been received, and check parts against the packing list. If damage or shortage exists, save the shipping packaging and packing materials, file a claim immediately with the carrier and promptly notify your ABB sales representative.

Ratings
The ratings of ABB cutouts are expressed in terms of voltage (kV), interrupting current (kA), and continuous current (A).

Voltage Rating
This number is expressed as system line-to-line voltage also referred to as “full-rated” (“27 kV” for example). Full rated cutouts may be applied on any system where the line-to-line voltage does not exceed the voltage rating.

The fuse support (or insulator) assembly is identified with the “BIL rating” (9) embossed onto the side of the silicon insulator. The fuse holder (interrupter tube which holds the fuse link) assembly has the “full rated” voltage marked on the nameplate (6).

Interrupting Current Rating
This is the maximum rms asymmetrical fault current which can be interrupted successfully by the fuse holder at rated voltage. This rating is marked on the nameplate (6) with the voltage rating. The nameplate will show if the interrupting rating is obtainable only with a link extender.

Continuous Current Rating
The ICX Cutout fuse supports are rated 300 amperes maximum. Fuse holders are identified as 100 or 200 amperes.

Construction
Construction of the ICX cutout is such that the fuse holder will accept NEMA standard fuse links and solid caps (3). Fuse holders which use link extenders require fuse links with removable heads. The fuse holder may be operated by hookstick to remove from or place into the fuse support. A disconnect blade may be substituted for the 100A or 200A fuse holders thus converting either fuse cutout into a 300A disconnect, and vice versa. The disconnect may be hookstick operated as well.

Cutouts can be supplied with NEMA standard mounting bracket assemblies (8) suitable for standard crossarm mounting when specified.

Conductor size ranges for cutouts with parallel groove terminals (7) are from No. 8 solid through 4/0. For cutouts with eyebolt terminals, the conductor size range is from No. 6 solid to 250MCM. Terminal bolts are staked so nuts cannot be easily removed. Special types of terminals are also available by contacting your ABB Representative.

Operation
The open cutout is a high voltage device normally operated with standard hot line tools. Closing and opening the cutout is accomplished by hookstick operation pushing or pulling on the fuse holder hook eye (1). Closing operations must be done quickly and firmly to minimize arcing and burning of the contact (2).

CAUTION
When closing in an expulsion type cutout, the lineman should stand clear of the open end of the fuse tube. If there is still a fault on the line, the cutout would operate expelling a large amount of gas and objects from the fuse link. It is recommended to stand to one side of the cutout when closing the fuse holder. The ICX cutout is not a loadbreak device, and it is not designed to be opened under load. An arc started by opening under load could cause injury or damage equipment.

The ICX open cutout can be used as a loadbreak device if it is opened using a loadbuster tool. Hooks (4) are provided which meet the mechanical and electrical requirements of the tool. Loadbreak ratings as shown on the tool nameplate are the function of the tool and their ability to interrupt given circuit conditions. Also, refer to the nameplate of the tool to make certain the voltage rating of the tool is the same as that of the system where it is being used. For safe, proper operation
of the loadbuster tool, refer to instructions contained with the loadbuster tool and/or individual utility operation procedures.

When placing a cutout in service, it should be visually checked for any obvious defects such as parts bent or silicon (10) damaged in shipping. Also, alignment of the fuse holder in the fuse support should be checked for proper dropout operation. Conductors should be fastened in the terminals (7) using approximately 20 ft.lbs. for all terminals with 3/8-inch hardware.

Refusing the fuse holder using NEMA standard links should be done with the following in mind:

1. Re-use of fuse holders that have operated should be preceded by an examination to ensure that there is enough fiber left to perform the fault interrupting function. The fused cut-out operates by eroding this fiber line thus enlarging the tube inside diameter in successive operations. The suggested maximum inside diameter before fuse holder replacement is required 0.71” (18mm) and 0.94” (24mm) for 100A and 200A fuse holders respectively.

2. 100A and under fuse links should be used only in a 100A fuse holder. The practice of using 100A and under fuse links with a washer in a 200A fuse holder may result in nuisance operations due to over-heating or in failures to interrupt low current faults.

3. The fiber tube which is a part of the fuse link assembly should not be bent or broken during handling. A damaged fiber tube could result in failure to interrupt low currents.

4. The cap (3), which is interchangeable with S&C cap, should be firmly tightened over the button head of the fuse link to insure in a high resistance connection causing excess heat and melting of the fuse link. Caps with link extenders must use fuse links with removable button heads. Remove and discard the button head and washer, then screw the fuse link into the link extender rod. If pliers are used to tighten the fuse link into the link extender rod, make sure that the fuse link tube is not damaged while tightening the fuse link.

5. The flipper (5) reduces strain on the fuse link and is used to assist ejection of the fuse link. To accomplish this, it must be located behind the ferrule casting and held by the fuse link. Pulling firmly on the fuse link (it is constructed to withstand approximately 10 lbs. tension), wrap the pigtail around the stud in a clockwise direction and under the hold-down nut which is tightened to 10-15 ft-lbs. The excess length of the fuse link pigtail should be cut off as close to the nut as possible. See Figure 2.

6. Replacement parts are limited to mounting brackets, terminals, caps, fuse holders and fuse links. Refer to ABB Catalog number 1VAG271201-DB for correct style numbers.

7. Although the open cutout is designed and built to be operated outdoors, the fuse holder should not be left in the cap down position. In this position, water may collect in the tube causing the fiber liner to swell. This could result in a failure to interrupt.

8. The contacts (2) of the cutout are silver plated and protected with a coating of silicon grease. Old grease and accumulated dust and dirt should be wiped clean; the protective coating can be renewed with a light coating of silicon grease. In severe cases of corrosion in extreme environments, casts can be cleaned using very fine emery cloth. Coarse emery cloth or the use of a sharp-edged metal tool is not recommended because of the danger of damaging the silver plating of the contacts.

Handling
The ICX cutouts are packed in heavy cardboard containers for shipping. When handling and during installation, a reasonable amount of care is required to prevent damage and ensure proper operation.

The silicon insulators are soft and flexible. Avoid exposing to sharp edges which can cut or puncture the insulator. This would reduce the creepage or expose the rod reducing the insulation behavior or the lifetime of the insulator which can lead to the failure.

Mounting
The cutout should be mounted on a suitable bracket as shown in Figure 3. Note that the external tooth lock washer is placed between the mounting bracket and the back bracket of the cutout. The lock washer and nut are then tightened down on the carriage bolt.

Recommended procedure for disposal of the cutout
The cutout does not contain environmentally hazardous materials. For disposal of the product after it has been taken out of use, local regulations, if there are any, should be followed.