SHORT CIRCUIT ISOLATOR
BRIZ
INSTRUCTION MANUAL

GENERAL

BRIZ Short Circuit Isolator is designed to be brought into a Two Wire Multiplex Addressable Polling Loop controlled by an S2000-KDL controller. BRIZ isolators divide the Addressable Polling Loop into segments, disabling individual segments in case of a short circuit and automatically reconnecting them after the fault has been repaired.

When a short circuit failure has been occurred within an addressable loop segment located between two adjacent BRIZ isolators (closest isolators to the left and right of the shorted segment) these isolators activate and both their yellow LED indicators are turned on. All the devices between the active short circuit isolators are dead, preventing entire loop failure.

When a short failure has been occurred within an addressable loop segment restricted by a BRIZ isolator only from one end then this isolator activates and its yellow LED indicator are turned on. All the devices beyond the shorted segment are disabled.

Upon removal of the short condition the BRIZ isolator (isolators) automatically restore(s) the entire loop to the normal operating state and its (their) LED indicator(s) are turned off.

BRIZ Short Circuit Isolator is round-the-clock operable.

SPECIFICATIONS

Input Voltage (provided by S2000-KDL)	6 ÷ 12 VDC
Normal Current Consumption	40 µA max
Active Current Consumption (Short Circuit Condition)	3 mA max
Triggering Voltage	2,9 ÷ 3,4 V
Triggering Time	200 ms max
Maximum Quantity Per One Loop	Up to 127 (see the estimation below)
Operating Temperature Range	from −30 to +55°C
Ingress Protection Rating	IP20
Relative Humidity	up to 93 % at +40°C, non-condensing
Overall Dimensions	56 mm x 38 mm x 20 mm max
Weight	40 g

QUANTITY OF ISOLATORS PER ONE LOOP

The maximum number of BRIZ isolators to be brought into a single addressable polling loop can be estimated by formula below:

$$N = (0.1\ mkF - C_{pl})/0.0005\ mkF,$$

where **N** stands for the maximum number of BRIZ isolators, and

C_{pl} stands for the summary electrical capacity of the wires of the polling loop in microfarads.

The resistance of the multiplex addressable polling loop should be estimated taking into account the sum of the resistances of all the BRIZ isolators connected to the polling loop. The resistance of a single BRIZ isolator is taken to be equal to 25 mOhm.
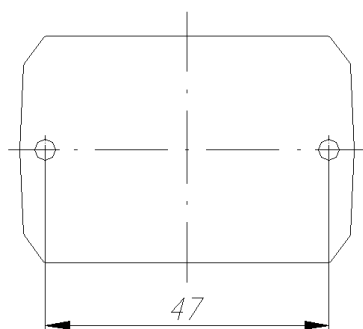
MOUNTING

BRIZ Short Circuit Isolator is mounted on a wall using the two screws provided, in accordance with the drilling pattern shown in Figure 1.

Figure 1. Drilling Pattern

WIRING

Figure 2 shows BRIZ terminal blocks. BRIZ is constructed to be symmetrical. The terminals "+PL" of each of the blocks XT1 and XT2 are connected together for more convenience but the terminals "+PL" of the block XT1 are isolated from the terminals "+PL" of the block XT2. The terminal "-PL" is common for all the blocks.

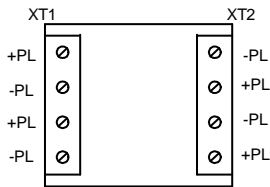Figures 3, 4, and 5 shows BRIZ wiring diagrams in cases of ring, tree, and mixed loop topologies respectively.
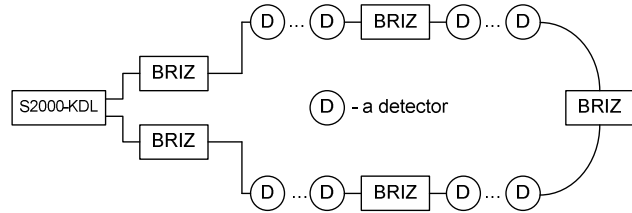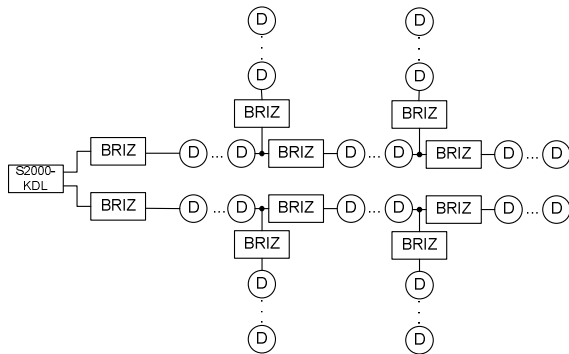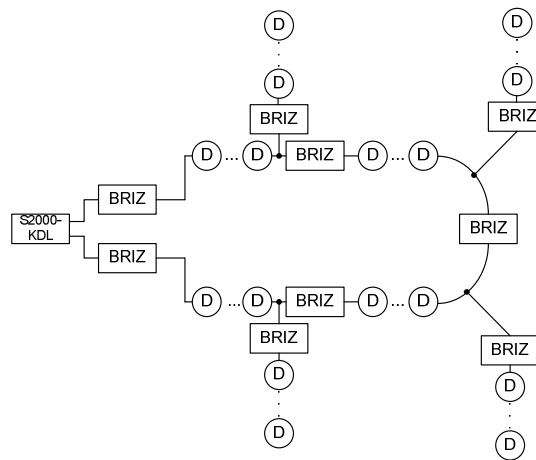

Figure 2

Figure 3

Figure 4

Figure 5

TESTING

Please notify the proper authorities before testing.

Ensure all the equipment to be used in the test is functioning.

At first, verify triggering of the BRIZ isolators connected to the S2000-KDL outputs directly. To do this, couple together "**+PL**" and "**–PL**" contacts of that terminal block which is NOT directly connected to the S2000-KDL controller. The LED indicator should be turned on. Then cut off the contacts "**+PL**" and "**–PL**". The LED indicator should be turned off.

Then, check all the other BRIZ isolators in the loop that are not directly connected to the S2000-KDL outputs. For each the BRIZ, couple the "**+PL**" and "**–PL**" contacts of its terminal block XT1. The LED indicator should be turned on. Then break the contacts "**+PL**" and "**–PL**" of XT1. The LED indicator should be turned off. Repeat such routine for XT2 terminal block of the BRIZ.

LEDs on triggered BRIZes can slightly flutter when lighting.