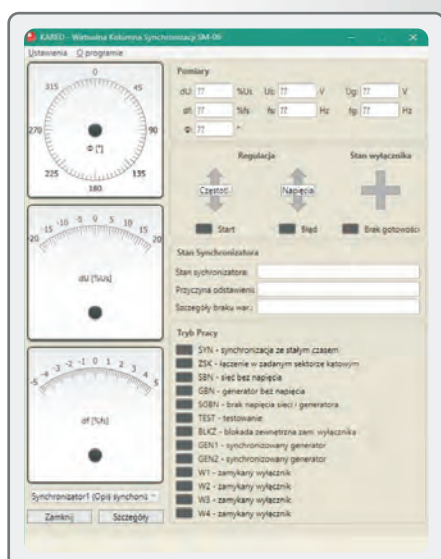


# KARED

## MICROPROCESSOR SYNCHRONIZERS SM-06



## DESIGNED PURPOSE

The SM-06 synchronizers are designed to precisely and safely connect AC heavy current facilities to operate in parallel, and to do so practically without equalizing current surges.

## TYPES OF SWITCHING OPERATIONS:

SYN - synchronization of facilities that operate asynchronously,

ZSK - synchronization of facilities that operate synchronously,

SBN - connecting a generator to a non-energized grid,

GBN - connecting a grid voltage to a non-energized generator grid,

SGBN - switching a breaker switch with no voltage on both sides of the breaker switch.

## VERSIONS:

SM-06A - A semi-automatic synchronizer, designed to connect AC heavy current facilities that operate asynchronously (a generator to the grid) or synchronously (e.g. connection of networks) and to do so with a pre-set fixed lead time.

SM-06B - A synchronizer designed to connect AC heavy current facilities to operate in parallel in a fully automatic manner. When connecting facilities that operate asynchronously (connection of a generator to the grid), upon switching power supply on and sending a start signal, the device automatically equalizes the voltages and frequencies of the power generator to be synchronized and, once the voltages and frequencies are brought to the pre-set values, it generates a signal that closes the switch.

When connecting facilities that operate synchronously (connection of networks), the device controls the differences of voltages and frequencies and generates a signal that closes the switch, when the pre-set voltage, frequency and phase conditions are met.

SM-06C - An automatic synchronizer - an extended version of synchronizer SM-06B. It can connect facilities by means of one of 4 switches, without any need to commutate status signals of these switches. Additionally, it is possible - without commutation - to select one of the two models of the dynamics of the facilities to be synchronized.

## PRINCIPAL FEATURES:

1. Two-channel realization of the lead time and connection lock, when the expected phase error for the connection is higher than the pre-set admissible value.
2. Reduced need for external devices that commutate input and output signals of the synchronizer.
3. Elevated synchronizer panel, connected to the synchronizer over an independent line (made of optic fibre, up to 15 km long, or twisted pair, when distances are smaller).
4. Transparent visualization of the parameters of a facility to be synchronized and of the performed functions on a liquid crystal display.
5. Possibility of communication with a control system, event recording and other functions on demand.
6. Reliable operation, supported with a long guarantee period.