COURSE DESCRIPTION

RU670G-20
Relion® 670 series

Course goal
The goal is to learn IED Relion® 670 to implement line protection solutions in practice. Using the operating program PCM600 to manage, structure, configure and program a protection application.

Main learning objectives
The participants will be able to:
— Configure hardware, alarms and event handling;
— Explain the basic configuration principle;
— Implement grid protection application solutions with the tool on the training models;
— Configure the communication interface;
— Configure fault recording function handling;
— Implement modifications in the system such as additional alarms, graphic displays and functions;
— Test and verify the implemented application;
— Troubleshoot the system, using the application and configuration manual.

Topics
— Intellectual electronic devices REC 670, RED 670, REL 670, RET 670 and REB670;
— HW/SW structure, system layout and components;
— Installation and commissioning of the IED, recommendations on settings;
— Features of hardware, basic technical characteristics;
— PCM600 software for Relion;
— IEC 61850 configuration settings: GOOSE, MMS.

Duration
The duration is 5 days.

Prerequisites
Engineering degree, technical college qualifications or equivalent. Basics of protection and substation automation as well as PC based data processing.
## Course map

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<td><strong>Topics</strong></td>
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<td>• IED type REC 670; Components and features of the software, protective functions, configuration system, settings, the human-machine interface; PCM 600: ACT, PST, SMT, GDE, DR + WAVEWIN ABB Standard configurations of 615 series IEDs; Excercises: hardware components, connection external circuits, studying the human-machine interface; Excercises: settings, checking the protective functions, working with the Registrar of Abnormal modes by using RETOM 51.</td>
<td>• IED type RED 670; Components and features of the software, protective functions, configuration system, settings, the human-machine interface; PCM 600: ACT, PST, SMT, GDE, DR + WAVEWIN ABB Standard configurations of 615 series IEDs; Excercises: hardware components, connection external circuits, studying the human-machine interface; Excercises: settings, checking the protective functions, working with the Registrar of Abnormal modes by using RETOM 51.</td>
<td>• IED type REL 670; Components and features of the software, protective functions, configuration system, settings, the human-machine interface; PCM 600: ACT, PST, SMT, GDE, DR + WAVEWIN ABB Standard configurations of 615 series IEDs; Excercises: hardware components, connection external circuits, studying the human-machine interface; Excercises: settings, checking the protective functions, working with the Registrar of Abnormal modes by using RETOM 51.</td>
<td>• IED type RET 670; Components and features of the software, protective functions, configuration system, settings, the human-machine interface; PCM 600: ACT, PST, SMT, GDE, DR + WAVEWIN ABB Standard configurations of 615 series IEDs; Excercises: hardware components, connection external circuits, studying the human-machine interface; Excercises: settings, checking the protective functions, working with the Registrar of Abnormal modes by using RETOM 51.</td>
<td>• IED type REB 670; Components and features of the software, protective functions, configuration system, settings, the human-machine interface; PCM 600: ACT, PST, SMT, GDE, DR + WAVEWIN ABB Standard configurations of 615 series IEDs; Excercises: hardware components, connection external circuits, studying the human-machine interface; Excercises: settings, checking the protective functions, working with the Registrar of Abnormal modes by using RETOM 51.</td>
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**Time**

| 9:00 am – 6:00 pm | 9:00 am – 6:00 pm | 9:00 am – 6:00 pm | 9:00 am – 6:00 pm | 9:00 am – 6:00 pm |

**Typical course layout (time or sequence may change)**