The <BFN> module of “Data acquisition” subsystem

Module:	BFN
Name:	BFN module
Type:	DAQ
Source:	daq_BFN.so
Version:	0.5.1
Author:	Roman Savochenko
Financing:	JSC «Jaroslavskiy Broiler»
Description:	Support of the BFN modules for Viper CT/BAS and others from "Big Dutchman" (http://www.bigdutchman.com).
License:	GPL

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Introduction

This module is written for the current data and alarms acquisition from the data concentration module BFN(BigFarmNet) of the poultry automation of "Big Dutchman" company (http://www.bigdutchman.com). To the one module of data concentration (BFN) can be connected multiple controllers of the poultry house, for example, Viper CT/BAS — a computer to control the microclimate and production processes, designed in a modular principle; it is provided to maintain an optimal climate and production efficiency in the poultry-yard.

An inquiry of the BFN module is made by the SOAP/XML protocol, during which it can be obtained at once all available data of the one house computer. As a result of this and because of the connection of multiple house computers to one BFN module total query time of current data can reach 30 (thirty) seconds!

Data and alarms are transmitted as signals' codes and alarms, and, therefore, to convert them to text messages it is necessary to have correspondence tables. Formation of a signals' code table and alarms are provided by this module at the module's object level and in the "Symbols" tab (Fig. 1). For use in multilingual projects data tables can be configured separately for each language.

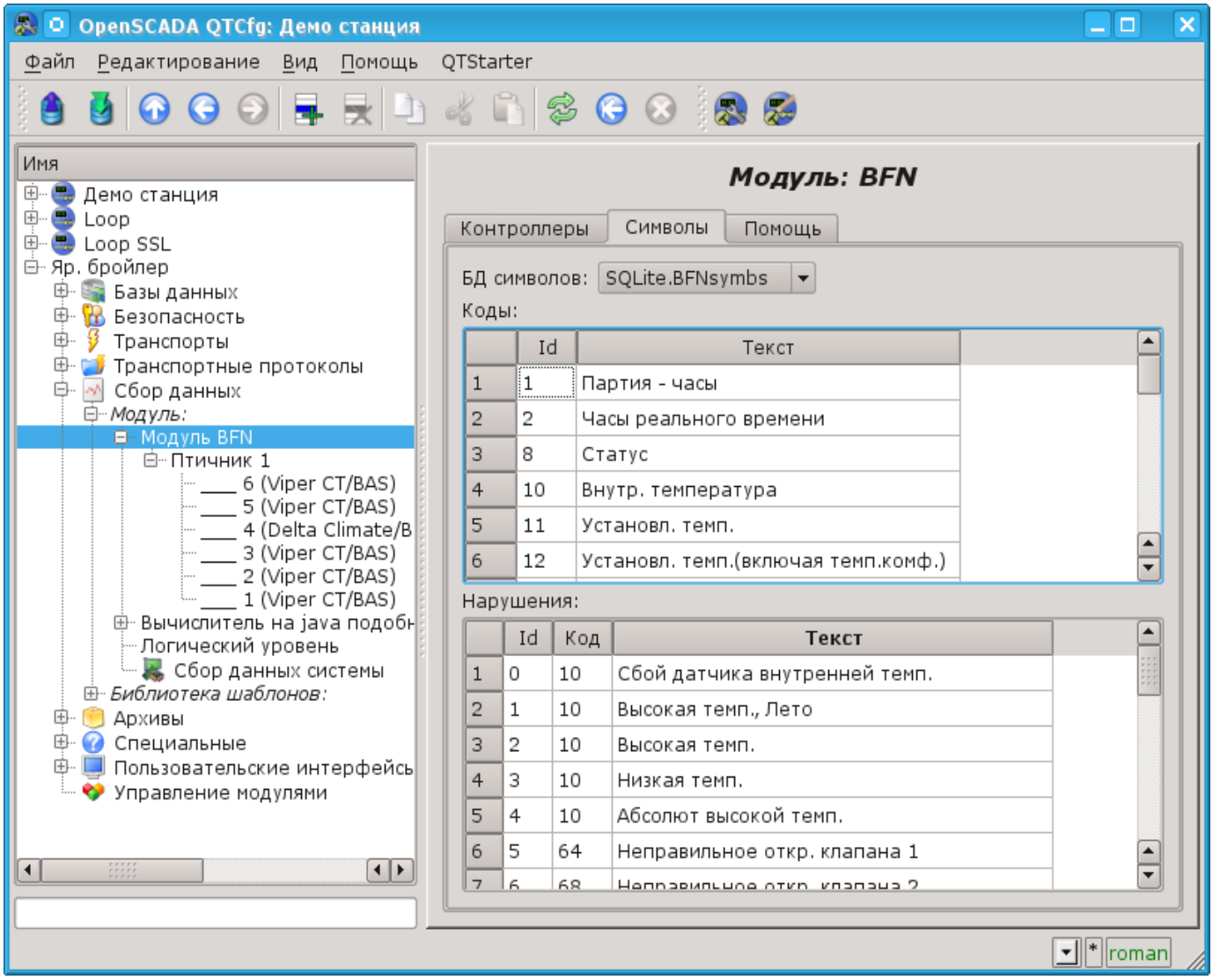

Fig.1. Configuration tab of signals and alarms symbols.

1. Data controller

For addition of the data source the controller is created and configured in the OpenSCADA system. Example of the configuration tab of the controller is depicted in Figure 2.

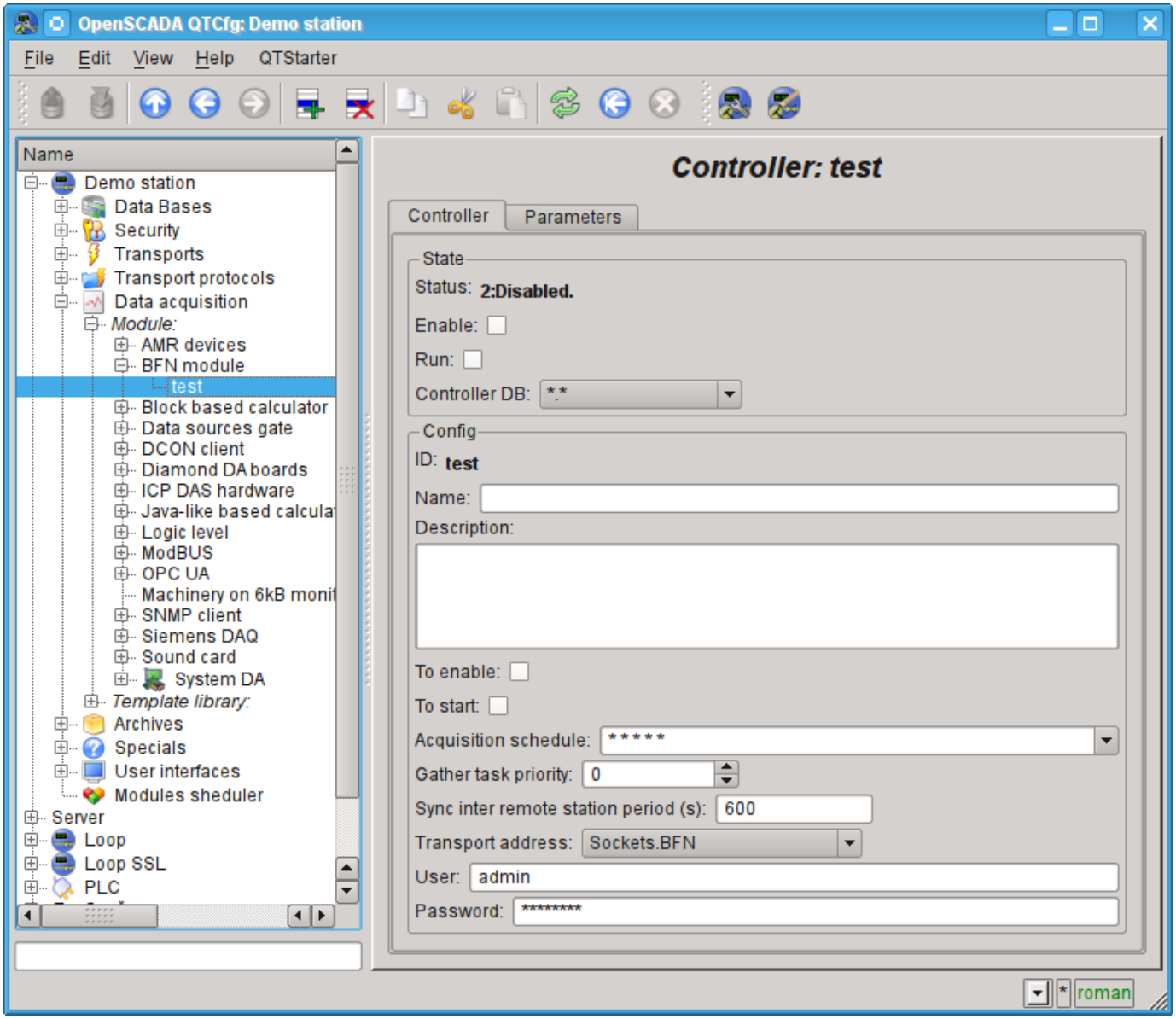

Fig.2. Configuration tab of the controller.

From this tab you can set:

- The state of the controller, as follows: «Enable», «Run» and the name of the database containing the configuration.
- Id, name and description of the controller.
- The state, in which the controller must be set at boot: «To enable» and «To start».
- The acquisition schedule policy and the priority of the task of data acquisition.
- Synchronization period of configuration.
- An address of the transport by which the access to the BFN module is made. Usually the TCP-sockets of the transports' module "Soskets" are used.
- User and password to connect to the BFN module.

2. Parameters

The module doesn't provides the possibility of creating parameters manually, all parameters are automatically created taking into account the list of house controllers connected to the BFN module. In fact, one parameter - a single house controller and all its data is presented as the attributes of the parameter. One controller of the house computer contains approximately 250 parameters, and some up to 500. As a result, the total amount of information of one BFN can reach 2000 signals! An example of the "Attributes" tab of the poultry house computer's parameter is shown in Fig. 3.

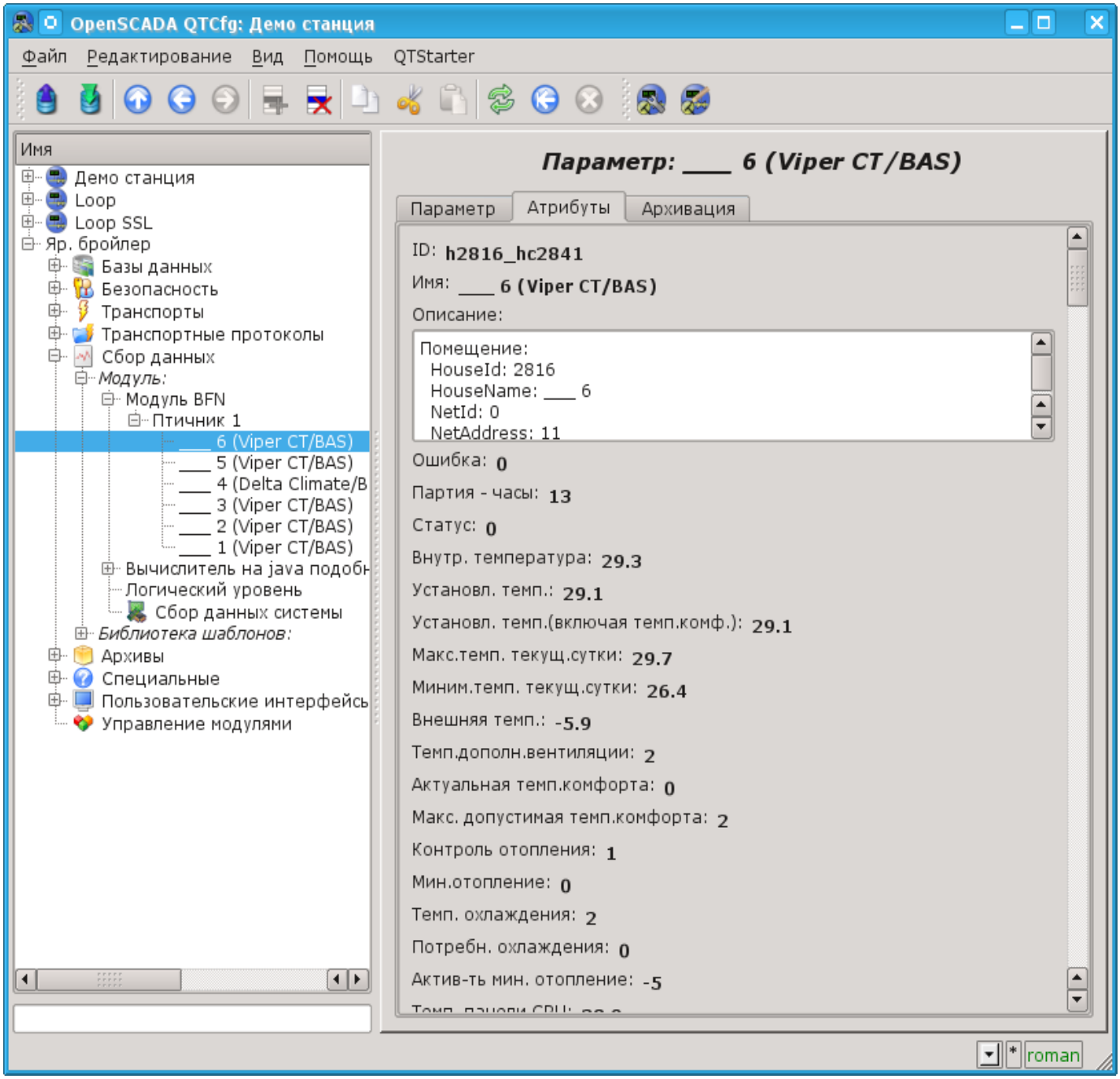

Fig.3. The "Attributes" tab of the poultry house computer's parameter.

Obtained alarms of the poultry computer are placed in the alarms list and to the messages' archive with:

- Category: **alBFN:{cntrId}:{house}:{nodeCode}:{alarmId}**, where:
  - *cntrId* - controller's ID;
  - *house* - house or the parameter's object ID;
  - *nodeCode* - the code of the node-signal for which the alarm is formed;
  - *alarmId* - alarm's ID.
- Name: **{HouseName} > {NodeName} : {AlarmMess}**, where:
  - *HouseName* - house name;
  - *NodeName* - house or the parameter's object name;
  - *AlarmMess* - alarm message.
- Alarm level: -4(Error) - error; 1(Info) - norm.