1. Introduction

The microprocessor controlled Multi-Channel-Controller CR15 is a member of the FELLER-ENGINEERING product family. The product is a merge of the well known and since several years in the market established FP13 / GA13 control and display units.

The corepart of the CR15 is a multi-processor technique. This technique allows faster handling of control algorithms. This ends in an enhanced controller quality and the possibility to realise additional customer specific solutions. Also the requirements for more protocolling and bus-interfacing can be realized easier.

The CR15 electrical (sensors, load and bus interface) and mechanical interfacing is identical with the FP13. Even terminals for alarm and power connection allow a compatible replacement. This makes possible an easy and fast system interchangability from FP13 to CR15 without additional wiring and documentation changes.

The Multi-Channel-Controller CR15 is a modular system. It is available in 3 different versions, with 5, 10 or 15 output circuits.

2. Short Description

Inputs / Outputs

The outputs can switch 24 VDC, 24VAC or 240 VAC and are configured for digital pulses. Temperature sensors may be PT100, Fe-CuNi or NiCr-Ni. The supply voltage must be preselected either 24 VDC, 24 VAC or 240 VDC.

A serial communication interface is a standard feature. The type can be selected from RS232, RS422 to RS485.

Operating - and Display-Unit

The display of parameters and the setting of parameters and operation modes is performed via the operating- and display-unit. Two general modes are used.

- Display mode, depending on customer requirements all setpoints, process values, deviations or output values are displayed simultaneously. The display looks like the known display of the GA13 unit.
- Programming mode, allows entry of all necessary parameters for the control functions. For clear visibility only the numbers of the selected zones, the setpoint values and the process values are displayed, as this is done at the FP13 controller. (Following picture).
Alarms

All control circuits are monitored for over- and under-temperature. In case of an error, the related alarm relays are energized to switch isolated contacts. The alarm conditions are displayed either as single alarm or as collected alarm. The error messages are displayed for each channel by a code in the channel display. This allows a fast analysis of the type of error (over / under temperature, open or short circuit of a sensor) and the location of error (number of zone).

Control Structure

- The controller uses for internal calculation a temperature resolution of $\frac{1}{4}$ °C. The display will use 1 °C resolution only.
- The minimum calculation cycle per channel is 10 msec (= 1% regulation rate).
- The scan time for all 15 channels is 1 sec.
- The control structure for all heating circuits is similar to a PID control with start up ramp.
- The customer can select either 2 point or 3 point control.
- For every channel four independent setpoint programmes can be stored, e.g. ramp down temperature or new temperature profiles. The programmes are stored in a non volatile RAM. A 24 VDC PLC-parallel input allows external selection of setpoint programmes.
- Via the parameter level, process and user required presets are possible, e.g. activating ramp functions, selecting °C or °F or the modification of the PID-structure.
- For each channel the CR15 may be switched to a power mode (manual or preselected output), this enables a mixed operation of the channels.

Installation

An additional feature of the CR15 is the built-in diagnosis programme. This will check all external connections and monitor faults like wrong wiring of sensors, sensor and heating circuit configuration. This is a useful tool for installation and start up.

3. Dimensions/Weight

Front panel:

- **Rack-model**
  - Height 128,4 mm (3PU)
  - Width 213 mm (42TE=½19")

- **Cabinet-front-mount-model**
  - Height 128,4 mm (3PU)
  - Width 230 mm

Depth:

- without terminals 213 mm
- with terminals 230 mm
- with interface connector 260 mm

Panel cut-out for front mounting:

- Height 114,5 mm
- Width 212,0 mm

Weigh: approx. 3 kg

4. Ordering information

please specify:

- supply voltage
- output voltage
- required communication interface
- type of sensors
- number of channels
- rack or front panel mounting

5. Pricing

Please refer to the actual price list.

6. Delivery

approx. 2 - 3 weeks ARO