CR5+, CR10+, and CR15+

are compact multi-channel controllers with a certain „Plus“ in comfortable operation and controlling. Up to 15 different control-loops will be operated by the installation of a single unit. They master all functions of temperature controlling, -indication or -supervision. As each zone enables individual settings, there is no reduction in relation to a collection of single-loop controllers. This variety of settings refers to a lot of features beside the setpoints:

- alarms for high and low limit and deviation
- separate PID parameters for heating and cooling
- separate ramps for heating and cooling
- separate configuration and limitation of heating- and cooling-outputs
- adaption to different ways of cooling via fans or injection
- heater-current measuring and supervision with indication of nominal values

An external comparison is available in option. It enables to use simple copper cable for thermocouple wiring.

The failure of the complete heater power of one zone may be noticed by decreasing temperatures, depending on process and design. But if only a part of the heater fails, the remaining elements may keep the sensor at constant temperature by increasing the output rate. Common controllers and indicators do not report any changes, but the required distribution of thermal energy is no longer placed. This may result in different types of production breakdowns, depending on the referring application.

CR5+

The advantage of a continuous current measuring goes along with the reduction of malproduction and breakdown time, as the the failure will get indicated without awaiting the results. The supervision of heater-current is specially important for applications with several heater elements for one control-loop.
Also the series CR15+ may control different tasks for each zone under different conditions. These samples show some applications with important advantages for the heater-current measuring and supervision. Breakouts of one heating element in a glue-tube, an heating array or in extrusion lines will directly influence the process or the product. Only the immediately indicated alarm enables prevents malproduction, which would be noticed only with the final quality check.

The serial interface is part of the complete fittings of the controllers. The interface RS485 is bus-compatible and the protocol FE3-protocol enables a long distance connection between a PC and up to 30 partners. The software PARACON opens an overview for operation by columns. FECON enables individual and comfortable design of all linked zones even in graphic mode.