EcoStruxure™

Foxboro™ DCS

Characterizer (CHARC) Block

PSS 41S-3CHARC

Product Specification

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Schneider Electric™

www.schneider-electric.com

Legal Information

Overview

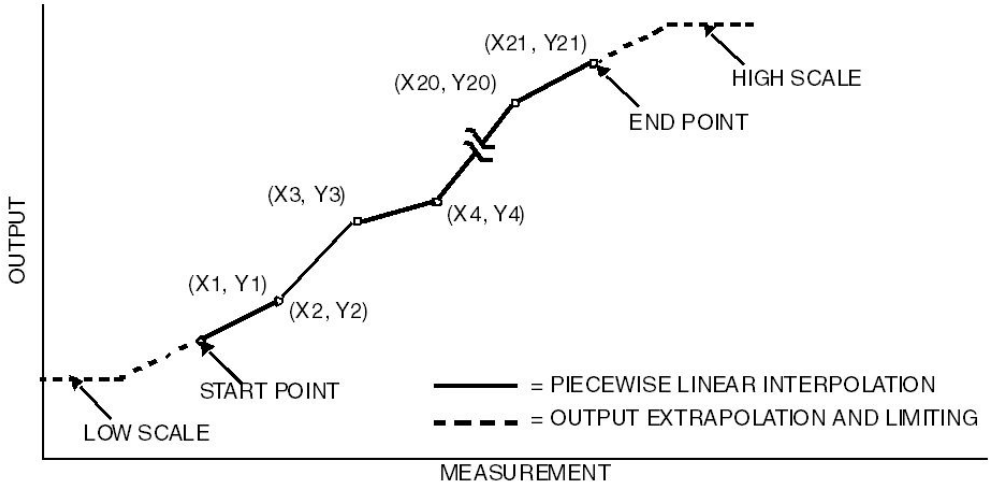
The CHARC block is a linear segment X-Y function calculator. Twenty-one X-Y specifiable coordinates allow 20-segment curve approximation for specialized signal characterization. This allows the user to build custom fit functions for linearization of a nonlinear measurement (for example, fluid volume in a spherical tank as a function of level, or vapor pressure as a function of temperature).

The CHARC block computes an output as a function of the measurement input through the construction of a *piecewise* linear characteristic curve (see Figure 1).

The characterization curve is predetermined by the user and constructed by specifying the breakpoints between each of the available (20) segments.

The user specifies the X-abscissa and Y-ordinate values for each breakpoint between each line segment. Up to 21 unique breakpoints can be specified for a total of 20 *piecewise* segments. The active part of the characterized curve is specified by the start and end point parameters. The characterization coordinates must monotonically increase or decrease, but not both, within the same block.

Figure 1. Characterization Curve



Standard Features

- 20-segment curve for *piecewise* linear characterization of the measurement input
- Auto/Manual control of the output, which can be initiated by a host process or another block
- Input/Output assignable engineering units and range
- Output clamping between the specified output span limits
- Automatic cascade handling for bumpless cascade initialization
- Inhibiting of alarm messages
- Loop identifier which allows the user to identify the loop or process unit that contains the block

Extended Features

- Specifiable interpolation interval via start and end points
- Signal characterization with a step function instead of linear interpolation
- Extender block to an AIN or MAIN block for signal conditioning and thermocouple compensation
- Output out-of-range alarming
- Error propagation from the measurement input to the output
- Disabling of alarm detection
- Workstation lock allows write access to the block parameters only by the Display Manager that owns the block
- Owner identifier allows the user to allocate control blocks to applications

Additional Features

- Initialization Output parameter notifies upstream blocks (such as BIAS, RATIO, AOUT, SIGSEL, AOUTR, CHARC, LIM, MDACT, OUTSEL, and SWCH) when a primary cascade is open or closed, allowing remote cascades to be closed automatically when the Cascade Timer expires without requiring an explicit acknowledgement by the upstream block logic. The Cascade Timer delays the closing of the cascade to a primary block, when the output is initialized in the CHARC block.

WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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