EcoStruxure™

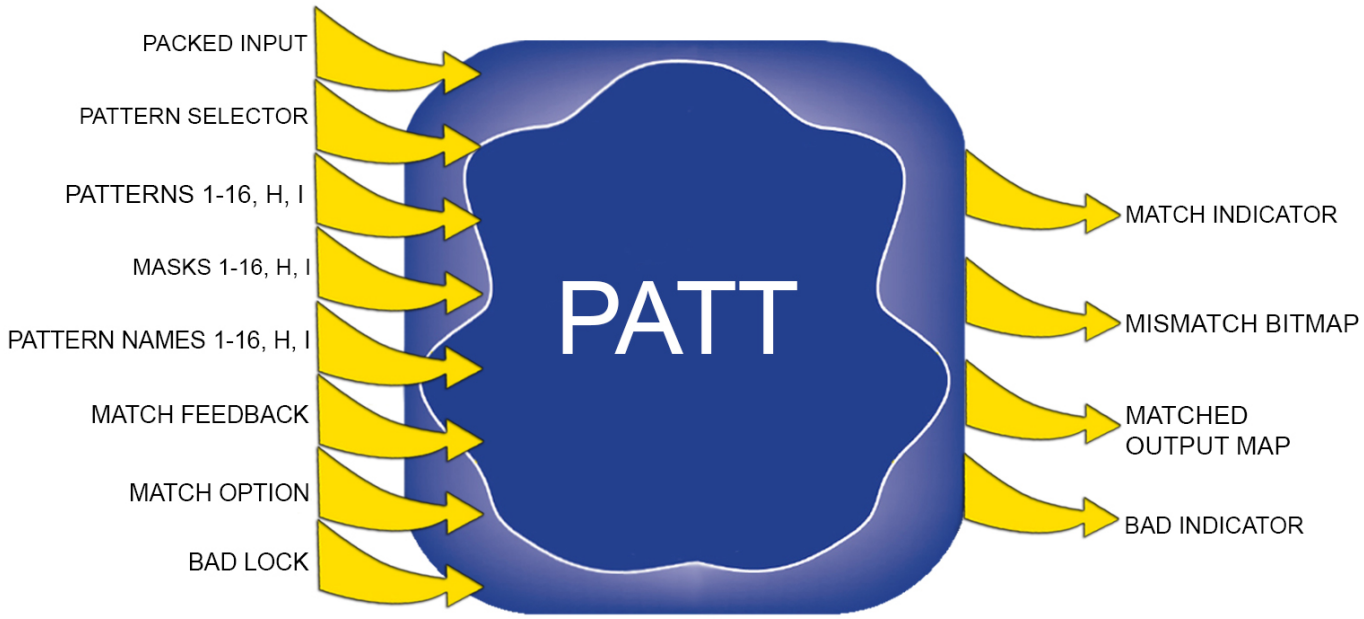
Foxboro™ DCS

Pattern (PATT) Block

PSS 41S-3PATT

Product Specification

May 2019



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Legal Information

Overview

The PATT block allows you to compare an input consisting of a 16-bit packed Boolean pattern against any one of a list of configured packed Boolean patterns stored in the block. The results of the comparison are provided as block outputs.

The PATT block has two main inputs:

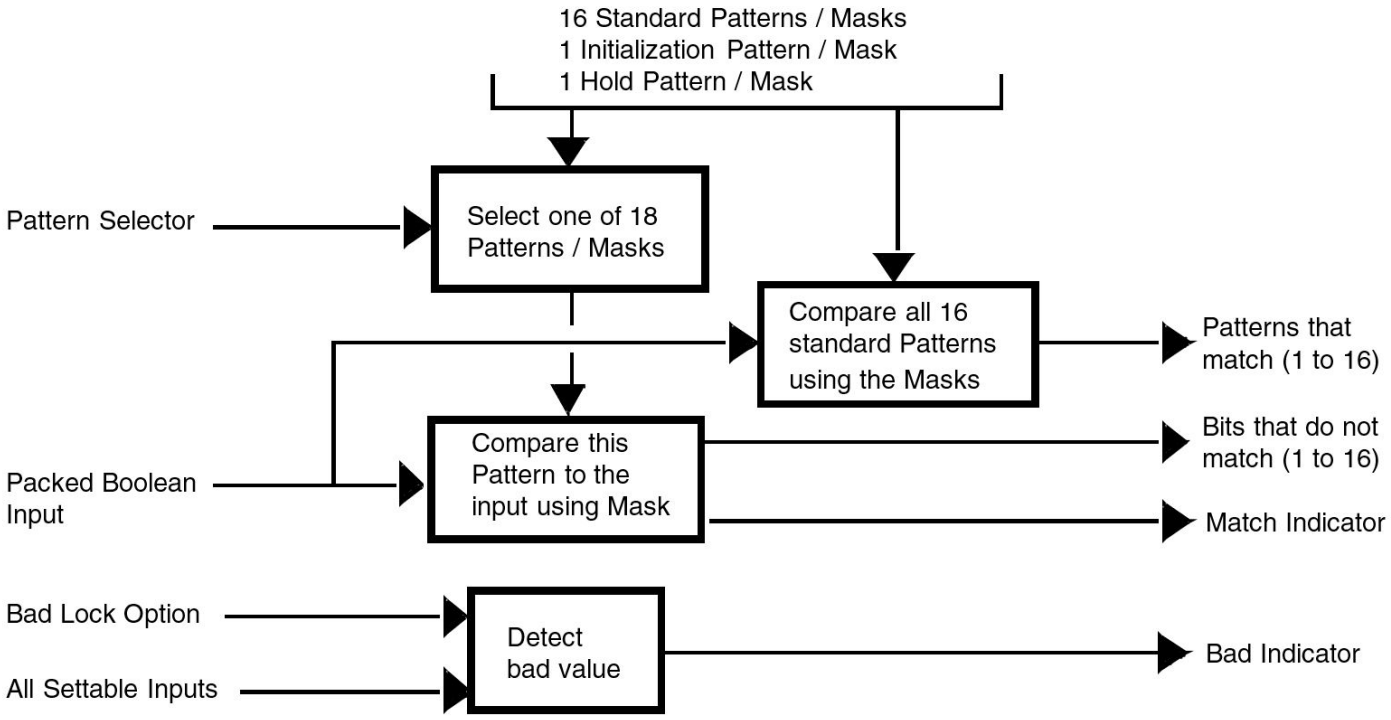
- Packed Input, which is a 16-bit pattern which you may set or connect to the block.
- Pattern Selector, an integer specifying the number of the stored pattern against which Packed Input is to be compared. A value of 0 indicates use of Pattern I (the Initialize Pattern). A value of 17 indicates use of Pattern H (the Hold pattern).

The main stored values configured into the block are:

- Patterns 1-16, H, and I, the stored target patterns.
- Masks 1-16, H, and I, which specify the bits to be considered when Packed Input is compared against the selected Pattern.

The block generates three forms of output reflecting the results of the comparisons:

- Match Indicator
- Mismatch Bitmap
- Matched Output Map



Standard Features

- Packed Input is compared bit by bit against the stored Pattern selected by Pattern Selector.
- Mask x is applied when the selected Pattern is Pattern x. A false value of a Mask bit causes the comparison in that bit position to be ignored.
- The Match Indicator Boolean output is set true when all bit positions specified by Mask x match.
- Mismatch Bitmap indicates positions in which Packed Input does not match its Pattern.
- Matched Output Map indicates which, if any, of the stored Patterns 1-16 match Packed Input. A Pattern whose corresponding Mask is all-zero is not considered to be matched by Packed Input.
- Manual control of all three block outputs is available in Manual mode.
- A Character Name string may be configured for each of the 18 stored Patterns, for display purposes.

Options

Cascade Option

- Configuring Match Option true allows you to cascade PATT blocks. You should connect Match Feedback to the Match Indicator output of the previous PATT block.
- The Match Indicator output of the present PATT block indicates an AND condition of the Match Feedback input with a successful pattern comparison in this block.
- The Mismatch Indicator reflects only the mismatches in this block's pattern comparison.
- Matched Output Map also reflects only the matched patterns in this block.

Bad Lock Option

- Bad Indicator is set true if there is unhealthy status of Packed Input, Pattern Selector, or (if Cascade Option is selected) of Match Feedback.
- Match Indicator is set false when any input is unhealthy.
- Mismatch Bitmap and Matched Output Map retain their last good values whenever Packed Input is unhealthy.
- When Pattern Selector is unhealthy, but Packed Input is healthy, Mismatch Bitmap holds its last good value, and Matched Output Map is processed normally.
- When only Match Feedback is unhealthy, Mismatch Bitmap and Matched Output Map are processed normally.

Extended Features

- Workstation lock allows write access to the block parameters only by the Display Manager that owns the block.
- Owner identifier allows you to allocate control blocks to applications.

Example

Let Pattern Selector = 3 and Match Option = False

Packed Input	0011 1101 0110 0111
Pattern 3	0001 0100 1010 0111
Mask 3	1100 0000 0011 1111
Mismatch Bitmap	0000 0000 0000 0000
Matched Output Map	0010 0000 0000 0000
Match Indicator	True

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