15W1102B400

IRIS BLUE "Sleep" e "Wake up" function
with variable PID Set Point - R01

05/10/2017
SW Version: IB4.13x

Test for finding the minimum speed in case of fixed or variable PID set point. This test must be done when the system is ready for operating.

To calibrate the optimal levels, it is necessary to start the system with the outlet flow totally closed.

1) Temporarily set C028 (minimum speed). P237 (min PID), P255a, P255c e P255d at a value of 0.
2) If the system is an IRIS BLUE Multi-Motor, disable all the pumps, except for the Master 1 pump that will calibrate the system.

Low pressure Test

3) Set the minimum level for system operation; for example, if you want to adjust the operating range from 3 to 7 bars, set 3, "low pressure".
4) Leave the outlet valve of the system almost completely closed, allowing for a reduced flow.
5) Turn the Master 1 pump on, wait until it reaches and settles at the set pressure.
6) Close the outlet valve completely and very slowly, not to create excessive pressure fluctuations.
7) Wait 1 minute for the value of the output speed to stabilize, and take note of the value of parameters M022 and M018.
8) Set the value read from M018 in P255a.
9) Set the value read from M022 in P255c.
10) Set P237(min PID) about 3% lower than P255c.
11) Set C028 (min motor speed) as a value of RPM corresponding to P237(%). You can calculate C028 in this way:
C028 = (C029 * P237) / 100

Note: If the system works with a fixed PID reference, it is easier to set the following parameters as shown here. P255a = 0% P255b = 100%(default), P255c – P255d equal to the value of M022 found in point 7, in this way you can avoid the next test made with high pressure.

High pressure Test
12) Set the maximum level for system operation on the keypad; for example, if you want to adjust the operating range from 3 to 7 bars, set 7.
13) Repeat the points 4, 5, 6, 7.
14) Set the value read from M018 in P255b.
15) Set P255d about 2% higher than the value read from M022.

Turn the system off and reset the valve to normal working conditions.

If the system is an IRIS BLUE Multi-Motor, set all the parameters modified before (C028; P237; P255a; P255b; P255c; P255d) in the Master 2 drive, too.
Note: don't forget to set the same PID reference on the keypad of both Master 1 and Master 2 drives. In fact, if the reference is different, in case of automatic change of the Master mode, a different regulation could occur. For example, if the pressure is set on 2 bar on Master 1 drive, it is necessary to set 2 bar also on Master 2 drive to avoid this problem.

Working curve of the "Sleep" automatic stop threshold of the motor as a function of the PID reference and the PID output

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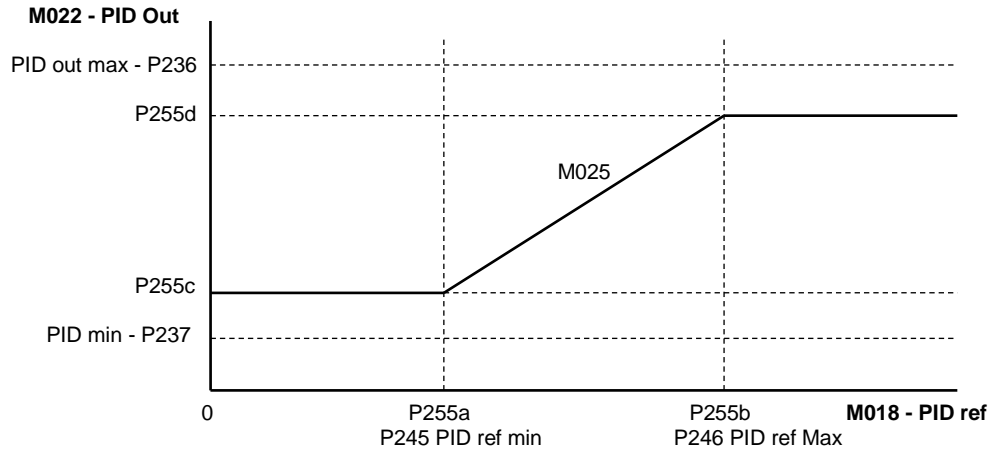
Description of the parameters used for the calibration of the system

M025 - Shows the PID Out threshold, as a percentage, in real time, below which the pump "Sleep" stop is activated.
P236 - Maximum limit that cannot be exceeded by the PID output (the max PID is the maximum pump speed C029)
P237 - Minimum limit that cannot be exceeded by the PID output (the min PID is the minimum pump speed)
P245 - Minimum limit that can be set on PID reference   (default 0%)
P246 - Maximum limit that can be set on PID reference   (default 100%)
P255a - Minimum PID reference as a percentage   (default 100%)
P255b - Maximum PID reference as a percentage   (default 100%)
P255c - "PID Out" threshold, as a percentage, below which the pump "Sleep" stop is activated,
    based on the PID minimum reference.   (default 100%)
P255d - "PID Out" threshold, as a percentage, below which the pump "Sleep" stop is activated,
    based on the PID maximum reference   (default 100%)

Note:
The above-mentioned diagrams and parameter values represent a mere example of how the application can be used, and they may be modified according to the User requirements and the technical specifications of the system. Therefore, it is the installer's responsibility to ensure a correct implementation. Compliance with the current safety regulations and successful installation are responsibility of the installer; please refer to the application manual of the product.