

PGC5000 Series Master Controller Modbus Configuration

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Measurement made easy



Introduction

The PGC5000 Series Master Controller, as part of its base design, supports a Modbus TCP interface (acting as a slave). This interface is used to communicate with control systems the servicing of this task is of high priority; therefore care must be given when configuring the Modbus master interface to the PGC5000. The unreasonable and illogical configuration of the Modbus master can result in resource issues with the PGC5000; which can lead to unpredictable behavior. With version 3.0.3.13 of the PGC5000 software, the fastest response time of the Modbus will be set to 50 ms.

The following general guidelines are recommended when configuring the interface.

- When both networks are being connected to one control system, use the secondary network only for failover. The Analyzer Network design is for all normal network traffic to be on the Primary network and use the Secondary network only upon failure (inability to communicate) with the Primary.

- Use the NewDataReady tags that indicate when report data has changed and read them; rather than polling for all report data continually. In a typical analyzer, data may not change for 6-10 minutes (cycle time of analysis). Polling for report data at a sub second interval places an undue load on both the PGC5000 and the control system, polling rates from Master connections should be 1 second or greater.
- Group transactions, as much as possible, use function codes 1,2,3,4 to perform reads of blocks of data. This is a more efficient use of each packet of data a read of 2 registers 10 times (10 transactions, 40 bytes) is *much* more costly of CPU time; for both the control system and PGC5000, than, read of 20 registers once (1 transaction, still 40 bytes).
- Do not configure the Modbus master to poll for large blocks of empty data. This is not an efficient use of transactions.

Contact us

ABB Inc.
Process Automation
Analytical Measurements
843 N. Jefferson Street
Lewisburg, WV 24901
USA
Tel.: 1 304 647 4358
Fax: 1 304 645 4236
Email: analyzeit@us.abb.com

www.abb.com/analytical

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