Storing Constants in a Database

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You might have noticed that unlike some of the other fields under **Sync Controller** the **Constants** field does not have a folder system implemented. While this is not really a problem if you are only using 2 or 3 constants, it can make it difficult if you are using 20 or 30. Because of this I will show you how its possible to store constants in a database where they can be easily organised. Here I will be using the configuration contained it Package 3 which has the database **ProcessDB** connected to it.

1. Open SCADA Configurator
2. Open **Process Databases** 🡪 **ProcessDB**
   * Create a new table and label it *Constants*
   * Set the **Table Length** to 1

If necessary, test the connection to the database by clicking **ProcessDB** 🡪 **Edit** 🡪 **Test Connection**

1. Create two new columns
   * **Name**: ID
   * **Data Type**: Integer
   * **Ordinal nr**.: 0
   * **Name**: C

*Figure 1 Creating a new table to store constants*

* + **Data Type**: Integer
  + **Ordinal nr**.: 1

At the moment we only need these two columns, if we had more constants we could create more but since we only have the constant *C* one is enough for now.

1. Now open the *ProcessDB* MS Access database and open the **Constants** table we have just created
   * Open it in Design View and change the **Field Size** to **Double**
   * Go back to Datasheet View and type in any value below 0 that you want for the constant

Figure Setting the value of the constant C

1. Now we need to go **Sync Controller** 🡪 **DB Operands** and create a new **Database Operand** (DO) for our constant *C*
   * **Name:** Constant\_C
   * **Type:** Cell
   * **Table:** ProcessDB.Constants
   * **Field:** C
   * **Row:** 1
2. Finally we just need to change the commands in our Function Blocks (FBs) to use the **DO** *Constant\_C* instead of the actual constant in the **Sync Controller** 🡪 **Constants** field
3. First find the Initialize\_Regulator **FB** and the Initialize\_1-C command
   * Change **Input 2** to Database operand, *Constants/Constant\_C*
4. Then go to the Main FB and the Mult\_Yn-1xC command
   * Change Input 2 to DO *Costants/Constant\_C*
5. And last you can delete the constant *C* from the **Constants** field if you want
6. To check if everything is working as it should turn on **Monitor View** and write in a value for Xn, if Ynx1-C approaches Xn then it is working correctly