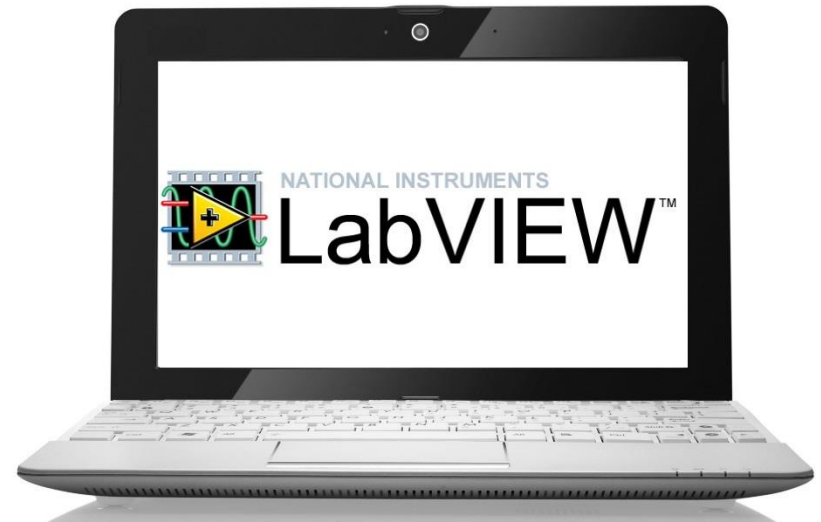


Les automates « Low-cost » Rockwell



- **Besoin initial #1**

- Appareil de «sécurité niveau0» = autonome, sans programme LabVIEW
2 seuils de pression qui pilotent un relais
=> Solution commerciale onéreuse et pas facilement trouvable pour un non «initié»

SOLUTION:

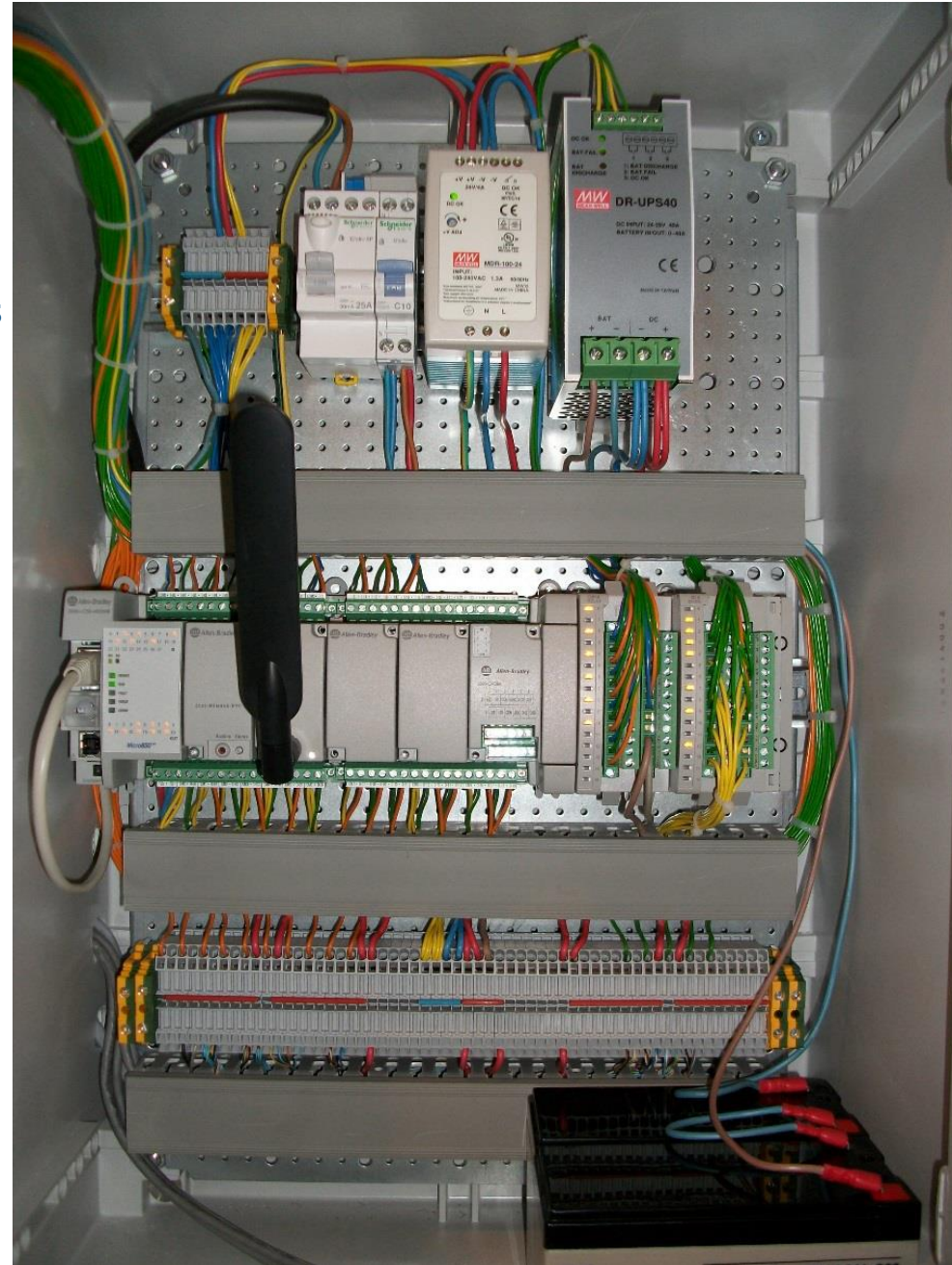
0/10V
(Pression mesurée)



Relais 24V qui pilote 3 alimes HT

Besoin initial #2

- Appareil de «sécurité niveau1»
=monitorer des défauts importants
sur un système à contraintes multiples
(T°C, pression,... ≈100 E/S)
 - Panne courant
 - Panne ventilation
 - Défaut température
 - Défaut onduleur
 - Gestion Niveau gaz bouteilles
 - ...
 - Envoi SMS
 - Alarme sonore
 - Mémoire des défauts



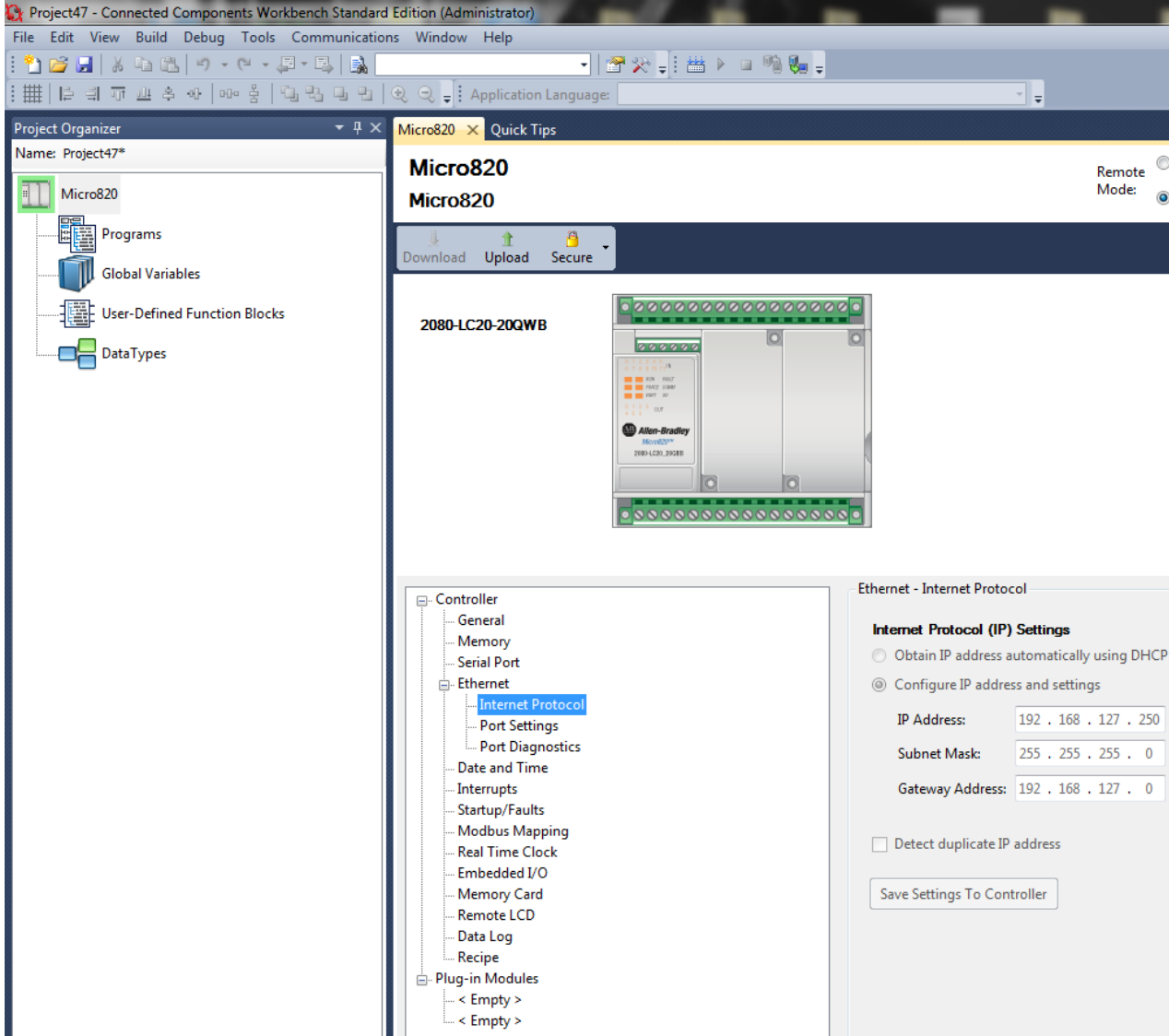
Programmation de l'automate: LADDER

- Peut être aussi attaqué en C
- LADDER Apprentissage en 1/2 journée pour les action basiques! (via le site Rockwell)

The screenshot displays the Rockwell Automation Connected Components Workbench interface. The main workspace shows a Ladder Logic (LAD) program for an alarm system, organized into 8 rungs. Rung 1 contains a text block with instructions: "Si le SOUND est activé : le BUZZER prend le même état que l'ALARME. Si le SOUND est désactivé : le BUZZER est silencieux. La variable SMS reflète l'état de l'ALARME." Below this, a logic network shows a normally open contact labeled "ALARME" connected to a coil labeled "sms". This coil is in series with a normally open contact labeled "SOUND" and a normally closed contact labeled "BUZZER". Rung 2 contains a text block: "Quand on ACQUITTE, l'ALARME est désactivée." Below it, a logic network shows a normally open contact labeled "ACK" connected to a coil labeled "ALARME". Rung 3 contains a text block: "Ci-dessous la gestion individuelle des 16 lignes de défaut de l'armoire câblées à ce jour (1..11 et 14..18). Rq : La ligne 1 (dite 'watchdog') gère le signal de vie du PC." Below this, a logic network shows a normally open contact labeled "heartbeat" connected to a coil labeled "surveil... rouge". This coil is in series with a normally open contact labeled "d01s" and a normally closed contact labeled "d01r". Rung 4 contains a logic network with a normally open contact labeled "d02d" connected to a coil labeled "surveil... rouge". This coil is in series with a normally open contact labeled "d02s" and a normally closed contact labeled "d02r". Rung 5 contains a logic network with a normally open contact labeled "d03d" connected to a coil labeled "surveil... rouge". This coil is in series with a normally open contact labeled "d03s" and a normally closed contact labeled "d03r". Rung 6 contains a logic network with a normally open contact labeled "d04d" connected to a coil labeled "surveil... rouge". This coil is in series with a normally open contact labeled "d04s" and a normally closed contact labeled "d04r". Rung 7 contains a logic network with a normally open contact labeled "d05d" connected to a coil labeled "surveil... rouge". This coil is in series with a normally open contact labeled "d05s" and a normally closed contact labeled "d05r". Rung 8 contains a logic network with a normally open contact labeled "d06d" connected to a coil labeled "surveil... rouge". This coil is in series with a normally open contact labeled "d06s" and a normally closed contact labeled "d06r". The interface includes a Project Organizer on the left, a Properties panel on the right, and a Device Toolbox at the bottom right. The status bar at the bottom indicates "Debugging color priority set by variables".

- **Interfaçage avec LabVIEW**
 - Monitoring des différentes variables => Modbus TCP

1) Variables / assignations des adresses Modbus



1b) Variables / assignations des adresses Modbus

The screenshot displays the Rockwell Automation Connected Components Workbench interface. The main window shows the configuration for a **Micro820** controller. The **Controller - Modbus Mapping** table is visible, listing variables and their assigned Modbus addresses.

Controller - Modbus Mapping

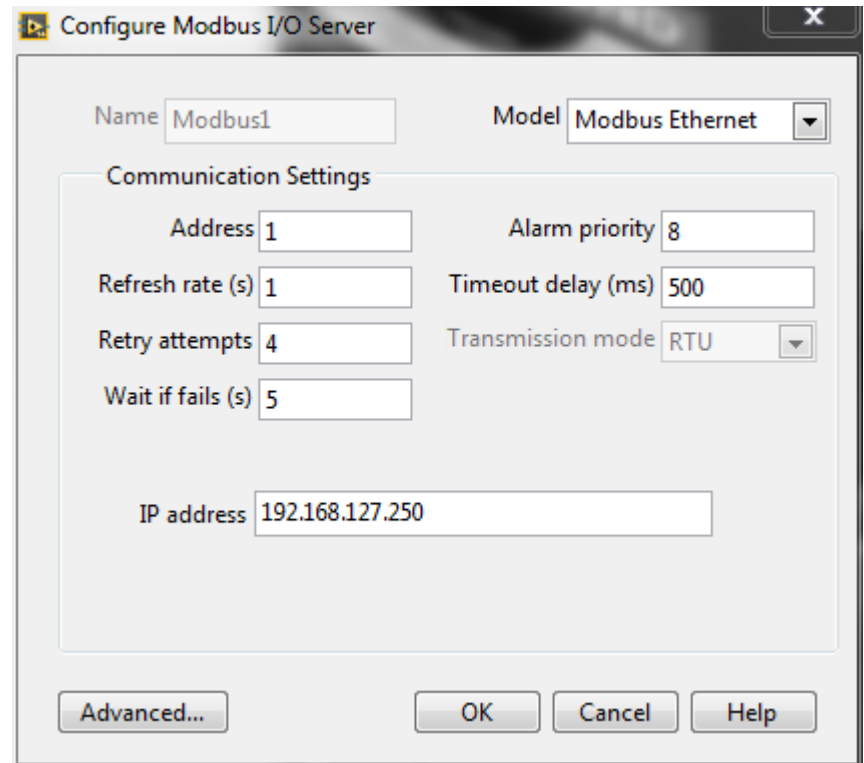
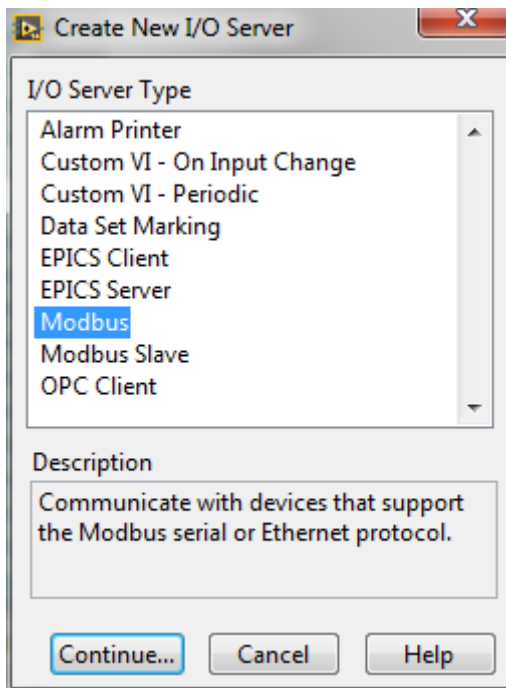
Variable Name	Data Type	Address	Addresses Used
▶ _IO_EM_DO_00	Bool	000001	000001
_IO_EM_DO_01	Bool	000002	000002
_IO_EM_DO_02	Bool	000003	000003
_IO_EM_AO_00	Word	000004	000004 - 000019
_IO_EM_AO_00	Word	400001	400001
_IO_EM_AI_00	Word	400005	400005
*			

The interface also shows the **Project Organizer** on the left, with the **Micro820** project selected. The **Controller** tree view is expanded to **Modbus Mapping**. The **Micro820** hardware is shown as a **2080-LC20-20QWB** module.

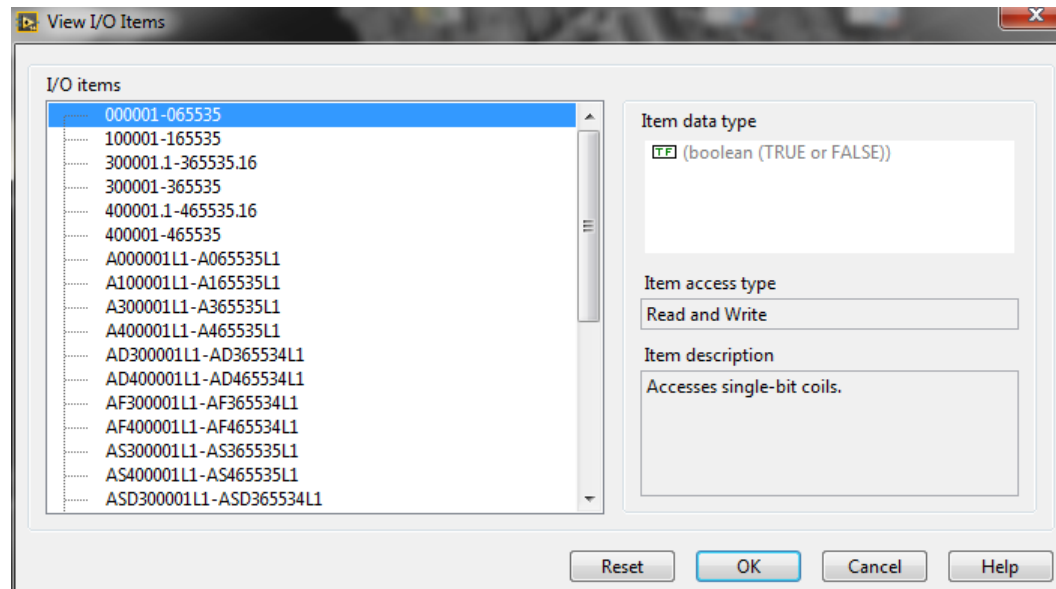
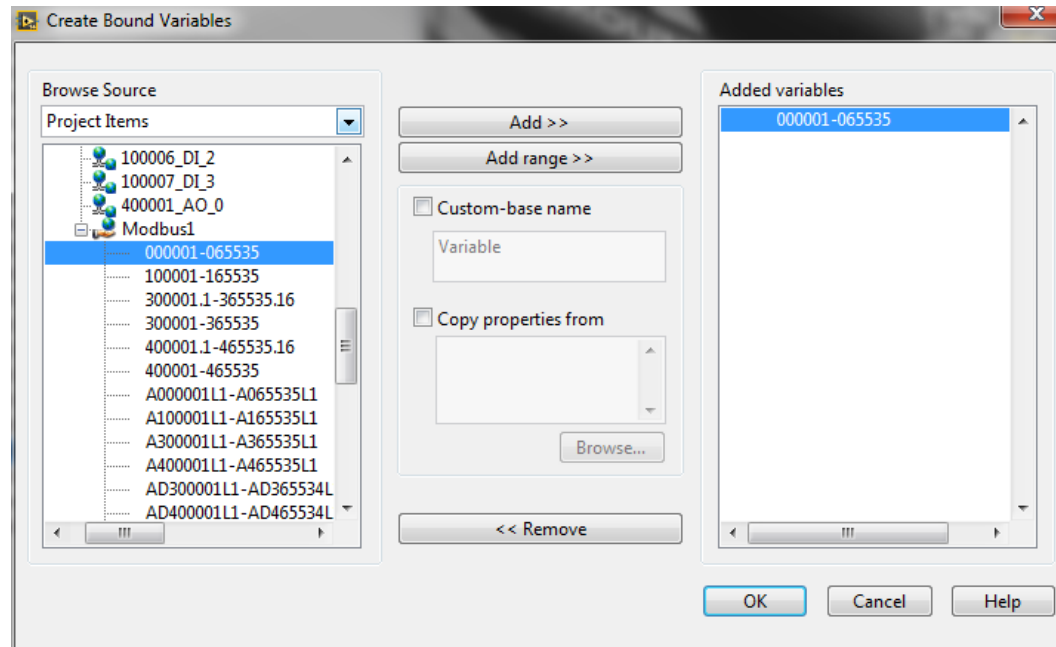
2) Création d'un nouveau projet LV

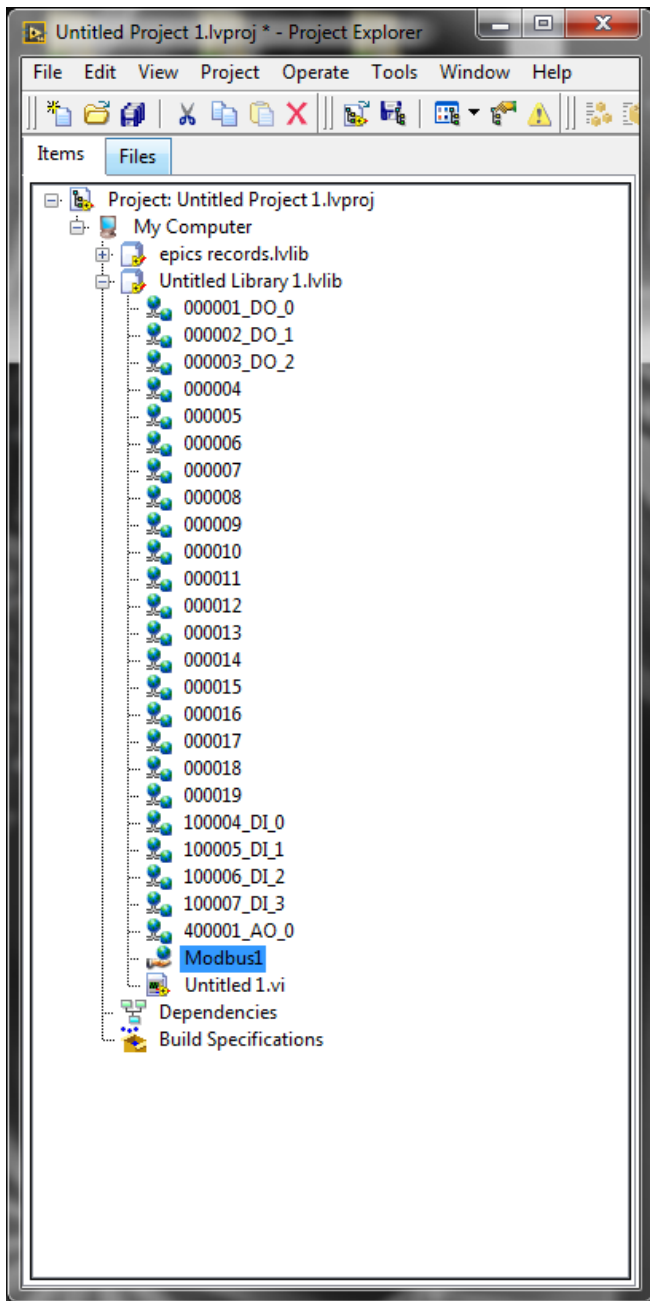
±

Création d'un nouvel IO Server

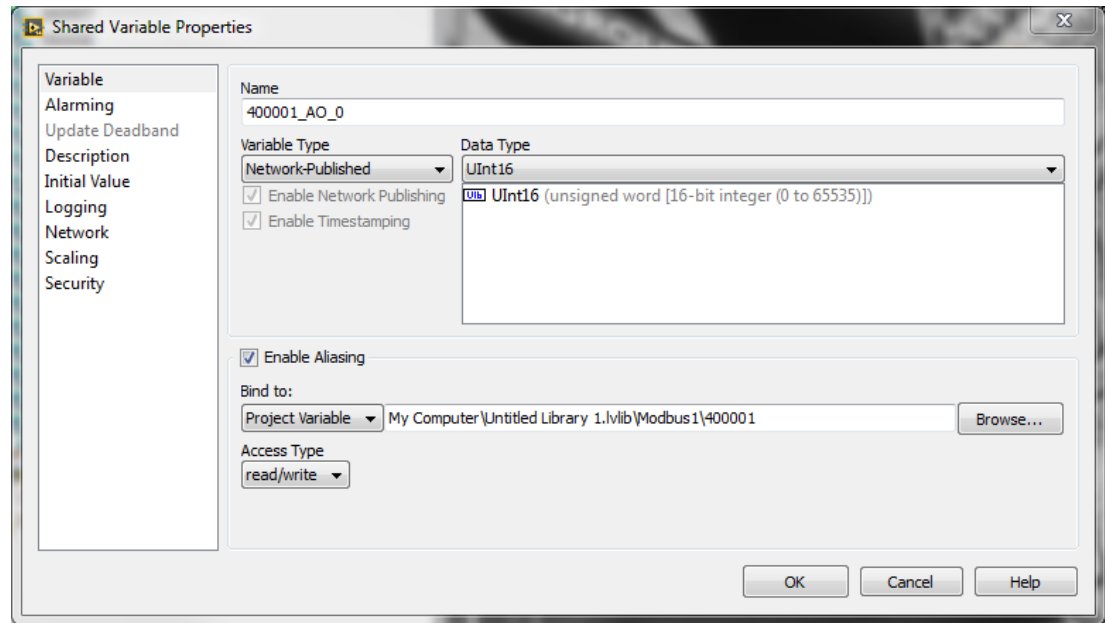


3) Création des variables/adresse(s) modbus

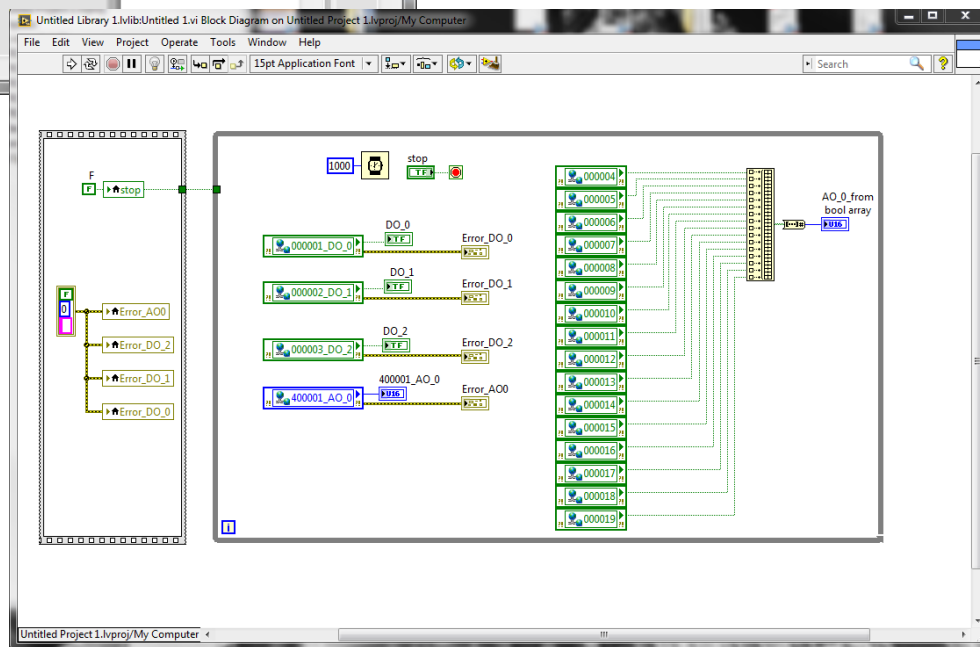
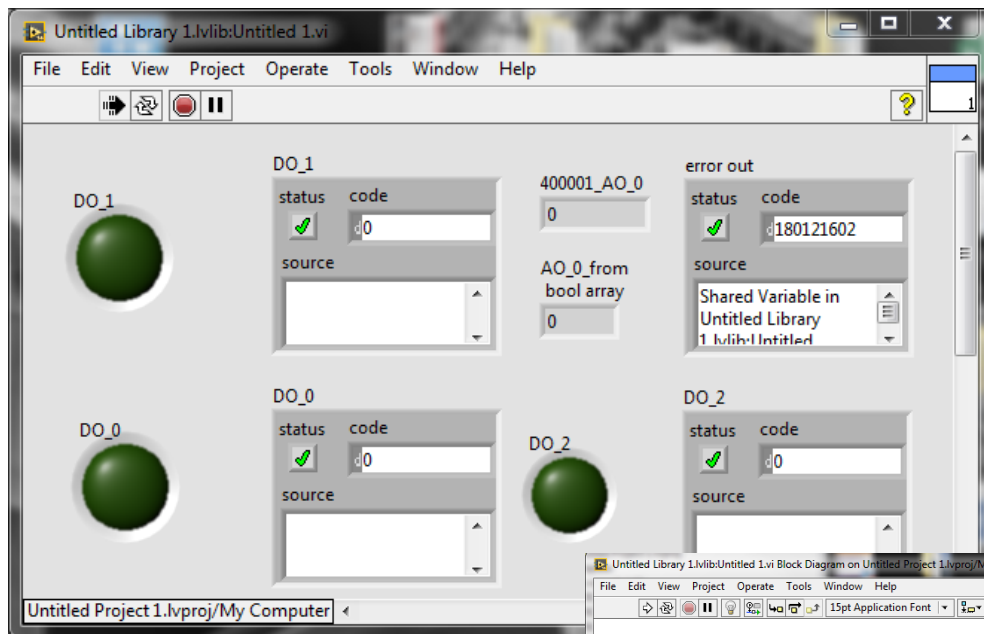


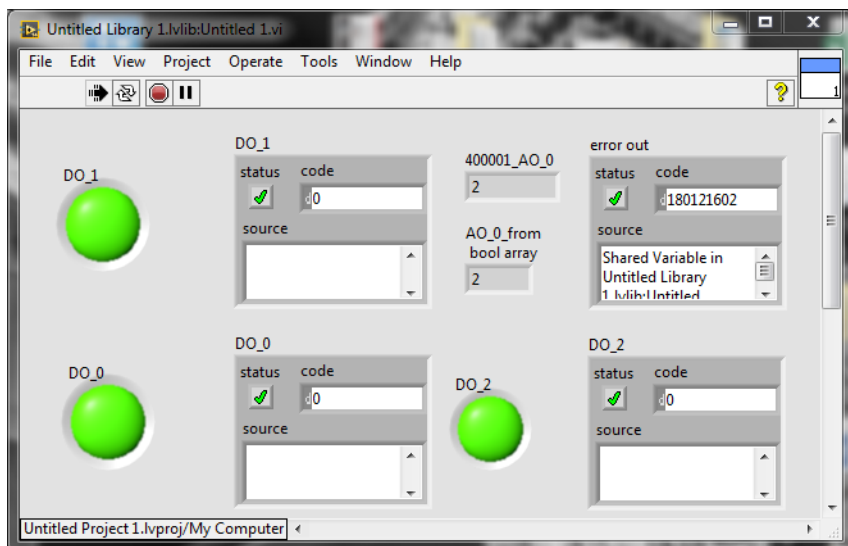
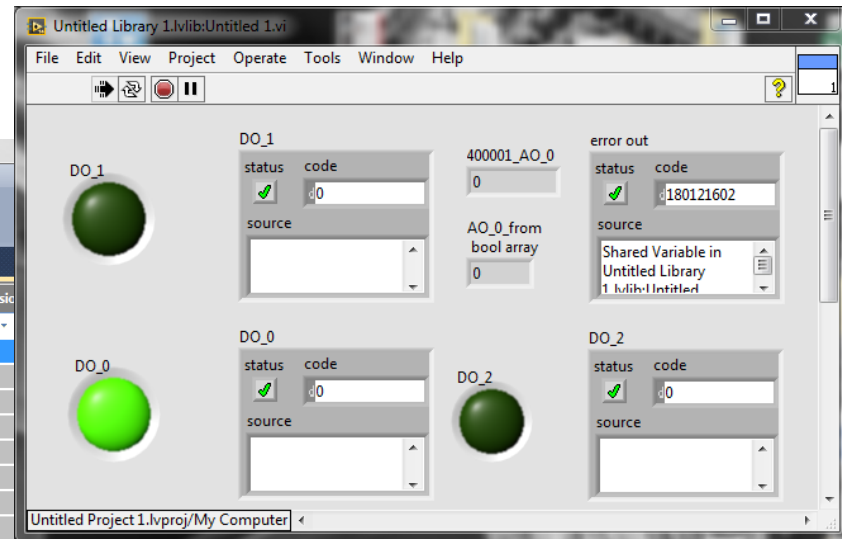
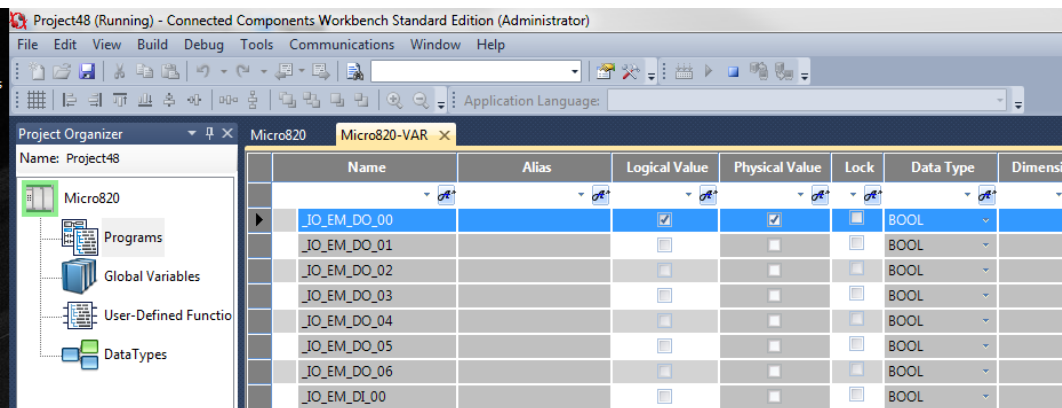


3b) Création des variables/adresse(s) modbus - suite



4) Le programme LV





Temps de dev. : \approx 1h

Reste à tester ce type de matériel sur la durée...