

# Backup Control

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## 1. Overview and Operation

### Overview

Do you often feel unsure whether the Backup Object finishes backing up or not? Or accidentally trigger Backup Object before inserting External Device? System registers LW9074~LW9078 (External Devices current free space) allow the system to automatically determine if the Backup Object is currently triggerable.

The screenshot shows a demo project titled "Demo Project - Backup Control" with the following instructions:

1. Take RW register to be backup source as example.
2. The backup object can be triggered only when Current Free Space of external device is > 0 byte.
3. Through system tag and Macro function, HMI can detect if backup object is currently available or not.

The interface includes three backup buttons: "backup to SD", "backup to USB1", and "backup to USB2". Below each button is a display showing "00029241288" K bytes of free space. A red box highlights these buttons and their corresponding free space displays, with the label "Current Free Space (K byte)" below them.

On the right side, there are two indicators:

- "RW register" showing the value "0000".
- "Backup status" showing a red indicator light.

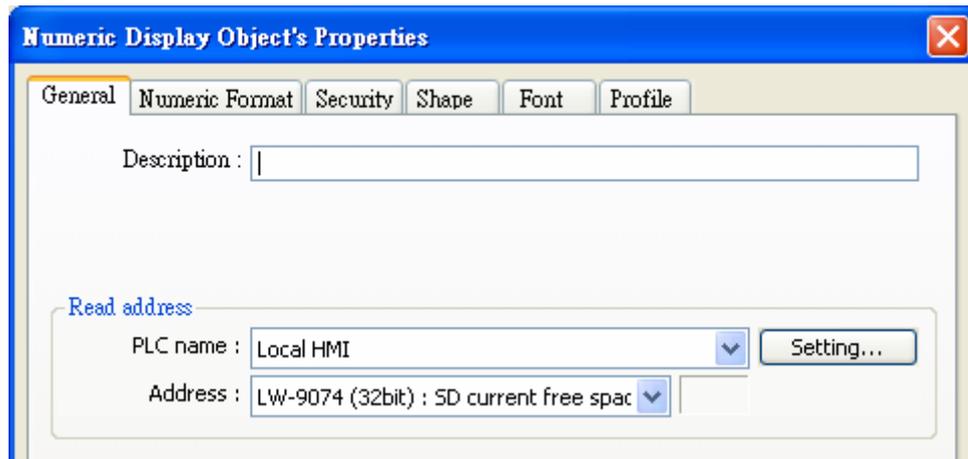
Below the backup status indicator, it says "Backup in process if ON". The editor's name "Editor: Nicolas" is visible at the bottom right.

### Operation

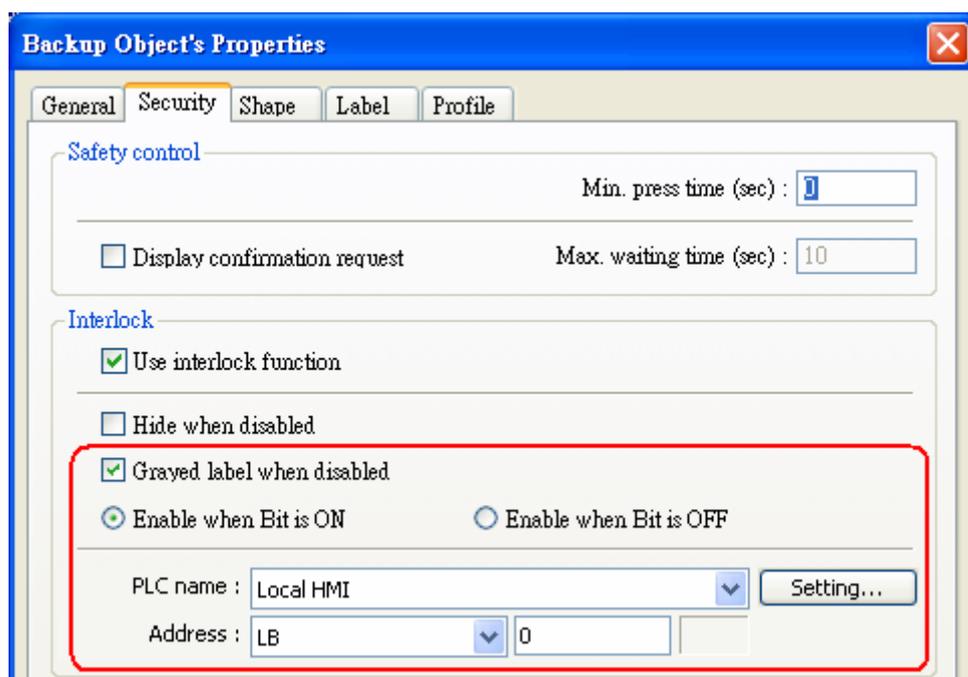
When inserting an External Device (Ex: SD card, USB1, and USB2) into HMI, via the preset relevant properties, that is MACRO interacting with interlock function of Backup Object, to automatically detect if any External Device is currently inserted. If an External Device is inserted and is with enough free space, Backup Object will be automatically enabled, otherwise, the function of triggering Backup Object will be disabled and will be grey labeled.

## 2. Setting up the Screen

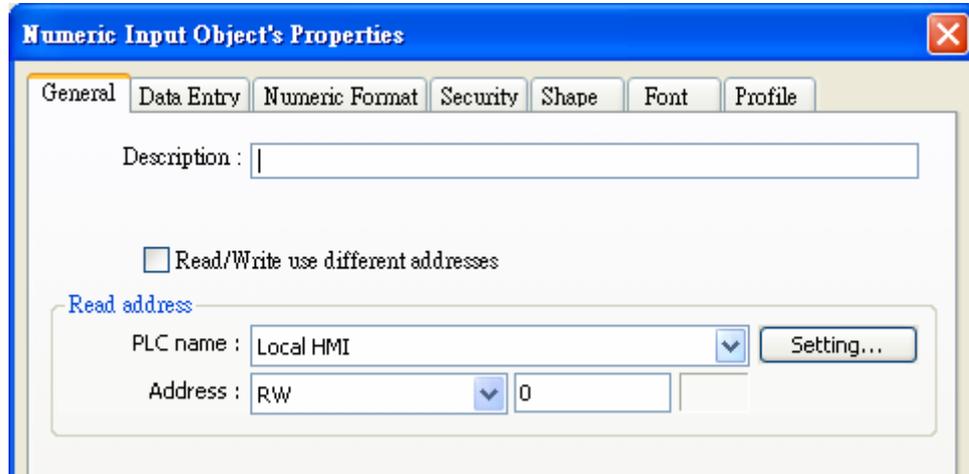
1. Firstly, 3 Numeric Display Objects must be created, with addresses LW9074, LW9076, and LW9078. They are displaying External Device current free space.



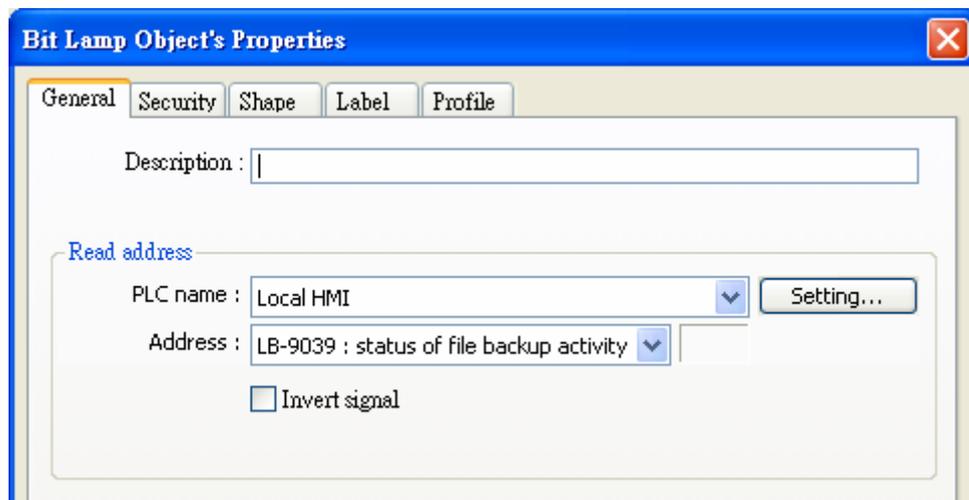
2. Create 3 Backup Objects, and set the target devices to SD card, USB1, and USB 2 respectively, and for each object set interlock function in [Security] tab. Please note that 3 Backup Objects respectively use 3 different Bit to enable / disable backup function.



- You may create any backup source for backup function. In the following demonstration, a RW Numeric Input Object is built as backup source.



- Create a Bit Lamp Object, with address LB9039, to be the indicator of backup activity status.



- Edit MACRO to allow system to determine whether or not to trigger Backup Object.

#### Macro ID 1:

```
macro_command main()
```

```
int a, b, c
```

---

```
bool bit0=0, bit1=1 //status of interlock

GetData(a, "Local HMI", LW, 9074, 1) //SD memory
GetData(b, "Local HMI", LW, 9076, 1) //USB1 memory
GetData(c, "Local HMI", LW, 9078, 1) //USB2 memory

if a>0 then //SD memory
  SetData(bit1, "Local HMI", LB, 0, 1) //enable backup
else
  SetData(bit0, "Local HMI", LB, 0, 1) //disable backup
end if

if b>0 then //USB1 memory
  SetData(bit1, "Local HMI", LB, 1, 1)
else
  SetData(bit0, "Local HMI", LB, 1, 1)
end if

if c>0 then //USB2 memory
  SetData(bit1, "Local HMI", LB, 2, 1)
else
  SetData(bit0, "Local HMI", LB, 2, 1)
end if

end macro_command
```

6. Set a PLC Control Object to trigger MACRO.

**PLC Control**

Description : |

PLC name : Local HMI

**Attribute**

Type of control : Execute macro program

Active only when designated window opened

Macro name : macro\_1 (ID : 1)

**Trigger address**

PLC name : Local HMI

Address : LB 10

Trigger mode : Always active when

7. In the end, create a Set Bit Object to trigger MACRO always, and select "Set ON when window opens" for [Attribute].

**Set Bit Object's Properties**

General Security Shape Label Profile

Description : |

**Write address**

PLC name : Local HMI

Address : LB 10

**Attribute**

Set style : Set ON when window opens

### 3. Addresses

The Object Addresses used in this demo project are listed below: Users can change Addresses and Object ID base on actual usage.

Object	Address	Object ID	Detail
<b>Window 10</b>			
Backup		BU_0	Backup to USB1
		BU_1	Backup to USB2
		BU_2	Backup to SD card
Numeric Input	RW0	NE_0	Backup source
Numeric Display	LW9074	ND_0	SD card memory
	LW9076	ND_1	USB1 memory
	LW9078	ND_2	USB2 memory
Bit Lamp	LB9039	BL_0	Backup status
Set Bit	LB10	SB_0	Trigger MACRO
PLC Control	LB10		Execute MACRO