Title: Real Time Clock Instructions

Summary: Real Time Clock (RTC) modes will be defined and reviewed.

We will be using the SG2 Client V3.4 software and Windows 7. Examples will be shown using the Ladder Logic program with the SG2-10HR-A model selected.

Procedure:

1.0 Using the SG2 Client Software, duplicate the program as shown in Figure 1 below.

![Figure 1](image1)

2.0 The Real Time Clock (RTC) edit Contact/Coil window opens when RTC R01coil is placed in the last column of the Ladder Logic program.

2.1 RTC selection:
31 RTC instructions available

2.2 Mode selection:
4 operational modes available (Daily, Interval Weekly, Year-Month-Day, and 30 second adjustment)

2.3 On->Off selection:
Choose Day of Week or Year depending on the Mode selection

2.4 Current Value:
Current Time or Date depending on the Mode selection

2.5 Preset Value:
Preset Times or Dates depending on the Mode selection

![Figure 2](image2)
**Mode 1**: This RTC function activates daily at the On Time and deactivates daily at the Off Time across a defined set of days per week. This action is repeated every week.

**Every Day Action (Example)**
For this example, the RTC (R01) is being used to activate a machine at 9:45am and deactivate a machine at 6:30pm Monday through Friday.

1. **First Day**: Set to Monday (MO)
2. **Last Day**: Set to Friday (FR)
3. **Daily On Time**: 9:45am (24 Hour)
   - Set Hour to 09
   - Set Minute to 45
4. **Daily Off Time**: 6:30pm (shown as 18:30, 24 hour format)
   - Set Hour to 18
   - Set Minute to 30

![Figure 3](image1)

**Mode 2**: This RTC function activates at a preset On Time on a set day of the week. It deactivates at a preset Off Time on a set day during the same week.

**Interval Time Action (Example)**
For this example, the RTC (R01) is being used to activate a machine at 8:15am on Tuesday. The machine will remain activated until Saturday at 9:30pm.

1. **Start Day**: Set to Tuesday (TU)
2. **End Day**: Set to Saturday (SA)
3. **On Time**: 8:15am (24 Hour)
   - Set Hour to 08
   - Set Minute to 15
4. **Off Time**: 9:30pm (shown as 21:30, 24 Hour format)
   - Set Hour to 21
   - Set Minute to 30

![Figure 4](image2)
Mode 3: This RTC function activates ON at midnight (00:00) on the preset date in the set year. The function remains activate until midnight (00:00) of the OFF preset date in the set year.

**Interval Month Action (Example)**
For this example, the RTC (R01) activates an irrigation system beginning at midnight on May 14, 2015 and deactivates the irrigation system at midnight on Sept 30, 2015.

1. **Start Year:** Set to 2015 (shown as 15)
2. **End Year:** Set to 2015 (shown as 15)
3. **Start Month:** Set to 05
4. **Start Date:** Set to 14
5. **End Month:** Set to 09
6. **End Date:** Set to 30

![Interval Month Action Mode](image)

Figure 5

Mode 4: This RTC function is a 30 second compensator (time correction). The RTC adds 2-3 seconds a day to the RTC time. This function allows a 30 second correction once a week to compensate for the time being added every day.

**30s Modify Mode (Example)**
For this example, the RTC (R01) will activate a 30ms Output pulse every Wednesday at 7:25 am. This pulse tells the RTC to wait 30 seconds before continuing to time.

1. **Day of Activity:** Wednesday (WE)
2. **Time of Day:** 7:25:00 am
   - **Hour:** 07
   - **Minute:** 25
   - **Second:** 00

![30s Modify Mode](image)

Figure 6