

SECTION 6

Communications Program Examples

This section provides communications programs examples using CV-series PCs and using C200HX/C200HE/ C200HG PCs.

- 6-1 CVM1/CV-series PCs
- 6-2 C200HX/C200HE/C200HG PCs

6-1 CVM1/CV-series PCs

The programming used in this section provides an example of writing and reading alarm 1 temperatures using message communications for all the E5ZE's control points from a ladder program in a CVM1 Programmable Controller.

Procedure

- 1, 2, 3...**
1. Transmit the program to the CVM1 PC.
 2. Set the CVM1 PC to RUN or MONITOR Mode.
 3. Set the alarm 1 temperature data to be written in order in words D00020 to D00027 for all control points (0 to 7). (This program will set the temperature to 100.0°C (&H03E8) for all control points.)
 4. Writing will be executed when work bit CIO 013100 is turned ON at the CVM1 PC.
 5. When writing is completed CIO 013100 will turn OFF.
 6. When the work bit CIO 013101 is turned ON at the CVM1 PC, reading will be executed.
 7. When reading is completed CIO 013101 will turn OFF.
 8. The data that has been read will be stored in order in words D00040 to D00047 for all control points (0 to 7).
 9. If an attempt is made to execute reading and writing simultaneously, either only reading or only writing will be executed.

When processing has been completed, the contents of CIO 0130 will be set to 0002 if data has been written, and to 0004 if data has been read. If message communications are not executed properly, the same instructions will be executed.

Program Application Conditions

- Set the CVM1-DRM21-EV1 CompoBus/D Master Unit as a CPU Bus Unit to unit number 0.
- Use a CVM1-CPU21-E CPU Unit.
- Set the communications parameters as follows:
 - Baud rate: 500 kbps
 - CVM1-DRM21-EV1 node address: 00
 - E5ZE node address: 32

| Local network | CPU Bus Unit No. |
|---------------|------------------|
| 001 | 00 |

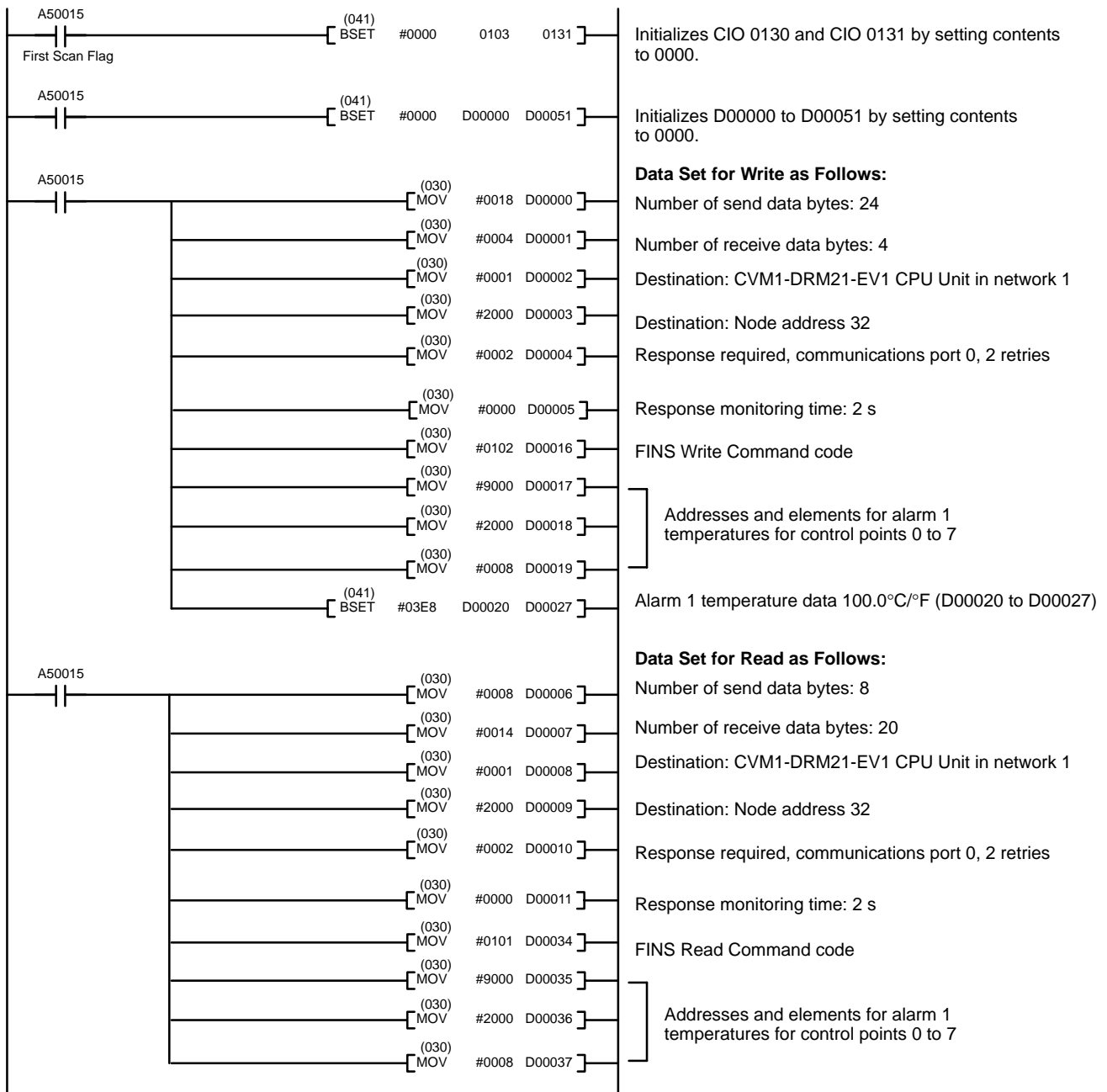
Refer to the *CompoBus/D (DeviceNet) Operation Manual (W267)* for details on using the CMND(194) instruction.

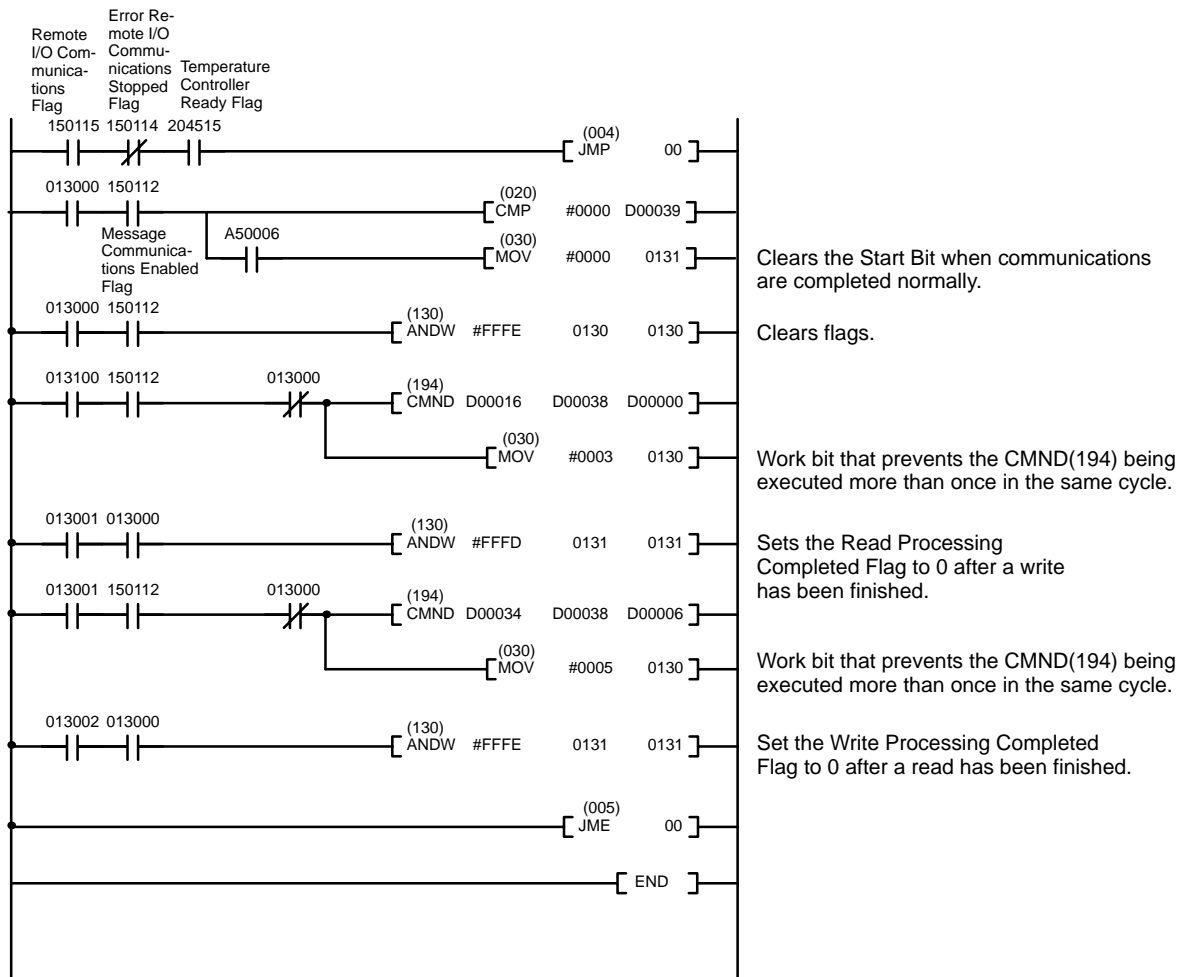
- The following tables show the Work Area and DM Area contents. The function of all of these bits and words is defined by the user for the program.
- Some of the other bits that appear in the program are allocated to the Master Unit. Refer to the *CompoBus/D (DeviceNet) Operation Manual (W267)* for details.

| Work Area | | Contents |
|-----------|------------|---|
| Word | Bit | |
| CIO 0130 | CIO 013000 | Prevents CMND(194) being executed more than once in the same cycle. |
| | CIO 013001 | ON when data has been written. |
| | CIO 013002 | ON when data has been read. |
| CIO 0131 | CIO 013100 | Write Start Bit |
| | CIO 013101 | Read Start Bit |

| DM Area words | Contents |
|------------------|--|
| D00000 to D00005 | Write control data |
| D00006 to D00011 | Read control data |
| D00016 to D00019 | FINS write command header code |
| D00020 to D00027 | Alarm 1 temperature write data for control points 0 to 7 |
| D00034 to D00037 | FINS read command header code |
| D00038 to D00039 | Response block header code storage area |
| D00040 to D00047 | Alarm 1 temperature read data for control points 0 to 7 |

Ladder Logic Program Example





6-2 C200HX/C200HE/C200HG PCs

The programming used in this section provides an example of writing and reading alarm 1 temperatures using message communications for all the E5ZE's control points from a ladder program in a C200HX/C200HG/C200HE Programmable Controller.

Procedure

- 1, 2, 3... 1. Transmit the program to the C200HX/C200HG/C200HE PC.
2. Set the C200HX/C200HG/C200HE PC to RUN or MONITOR Mode.
3. Set the alarm 1 temperature data to be written in order in words DM 0018 to DM 0025 for all control points (0 to 7). (This program will set the temperature to 100.0°C (&H03E8) for all control points.)
4. Writing will be executed when work bit IR 23300 is turned ON at the C200HX/C200HG/C200HE PC.
5. When writing is completed IR 23300 will turn OFF.
6. When work bit IR 23301 is turned ON at the C200HX/C200HG/C200HE PC, reading will be executed.
7. When reading is completed IR 23301 will turn OFF.
8. The data that has been read will be stored in order in words DM 0052 to DM 0059 for all control points (0 to 7).
9. If an attempt is made to execute reading and writing simultaneously, either only reading or only writing will be executed.

When processing has been completed, the contents of IR 232 will be set to 0002 if data has been written, and to 0004 data has been read. If message communications are not executed properly, the same instructions will be executed.

Program Application Conditions

- Set the C200HW-DRM21-EV1 CompoBus/D Master Unit to unit number 0 as a CPU Bus Units.
- Use the CVM1-CPU21-E CPU Unit.
- Set the communications parameters as follows:

Baud rate: 500 kbps

C200H-DRM21-EV1 node address: 00

E5ZE node address: 32

Refer to the *CompoBus/D (DeviceNet) Operation Manual (W267)* for details on using the IOWR(223) instruction.

- The following tables show the IR Area 1 and DM Area contents. The function of all of these bits and words is defined by the user for the program.
- Some of the other bits that appear in the program are allocated to the Master Unit. Refer to the *CompoBus/D (DeviceNet) Operation Manual (W267)* for details.

| IR Area 1 Work Area | | Contents |
|---------------------|----------|---|
| Word | Bit | |
| IR 232 | IR 23200 | Prevents the IOWR(223) being executed more than once in the same cycle. |
| | IR 23201 | ON when data has been written. |
| | IR 23202 | ON when data has been read. |
| IR 233 | IR 23300 | Write Start Bit |
| | IR 23301 | Read Start Bit |

| DM Area words | Contents |
|--------------------|--|
| DM 0000 | Write control data |
| DM 0001 | Read control data |
| DM 0010 to DM 0011 | First word of write command response storage area |
| DM 0012 | Response monitoring time |
| DM 0013 | Command byte length |
| DM 0014 to DM 0017 | FINS command header code (write) |
| DM 0018 to DM 0025 | Alarm 1 temperature write data for control points 0 to 7 |
| DM 0030 to DM 0031 | First word of read command response storage area |
| DM 0032 | Response monitoring time |
| DM 0033 | Command byte length |
| DM 0034 to DM 0037 | FINS command header code (read) |
| DM 0038 | Response block end code comparative data (#0000) |
| DM 0050 to DM 0051 | Response block header code storage area |
| DM 0052 to DM 0059 | Alarm 1 temperature read data for control points 0 to 7 |

