User's Manual

DAQSTATION CX1000/CX2000
CX Operator

IM 04L31Q01-04E
1st Edition

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Foreword

This manual describes an instruction of CX Operator. To ensure correct use, please read this manual thoroughly before beginning operation. Refer to the manuals supplied with CX1000/CX2000 for the product functions and settings. After you have read this manual, keep it in a safe place where it can be referred to anytime a question arises.

Note

- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functions.
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Contents

1.1 Overview of CX Operator

CX Operator allows you to execute recording START/STOP and control loop operations with monitoring measurement/control screen. Operation screens such as CX trend screen, control screen, and program screen can be switched and monitored from remote site.   Operations related to trend recording, control operation such as parameters (SP, OUT, operation mode) can be executed from remote site.

Connect available instruments: The following model after Style3 including special specification
(/S33 and /S35)

CX1000,CX1006, CX1200, CX1206
CX2000, CX2010, CX2020, CX2200   CX2210, CX2220, CX2410, CX2420, CX2610, CX2620

Note

- Simultaneous use with DAQWORX
  It is recommended to login by an administrator level for the CX operator:
  - DAQEXPLORER can not be used simultaneously.
  - Please login by user level for DAQLOGGER.
- Simultaneous use with Web browser:
  Please use "monitor mode" not "operator mode" for CX Web browser.
- When CX operation on site and CX operation from CX Operator are done simultaneously, there is a case that an error message appears. In operating from CX Operator, do not operate on site.

1.2 Required PC System Environment:

- OS
  Windows2000, Windows XP
- Personal computer
  A computer which runs on Windows 2000, or Windows XP, and is equipped with a following Pentium processor, Pentium II, 266 MHz or higher is recommended.
- Hard Disk
  100MB or more (30 MB for desirable empty capacity)
- Monitor
  A monitor supported by Windows 2000, or Windows XP. Resolution: 800 pixel or higher, number of colors: 32 K or more (A monitor with 1024 x 768 pixels and 65536 colors is recommended)

1.3 CX Operator Installation and Operation Flow
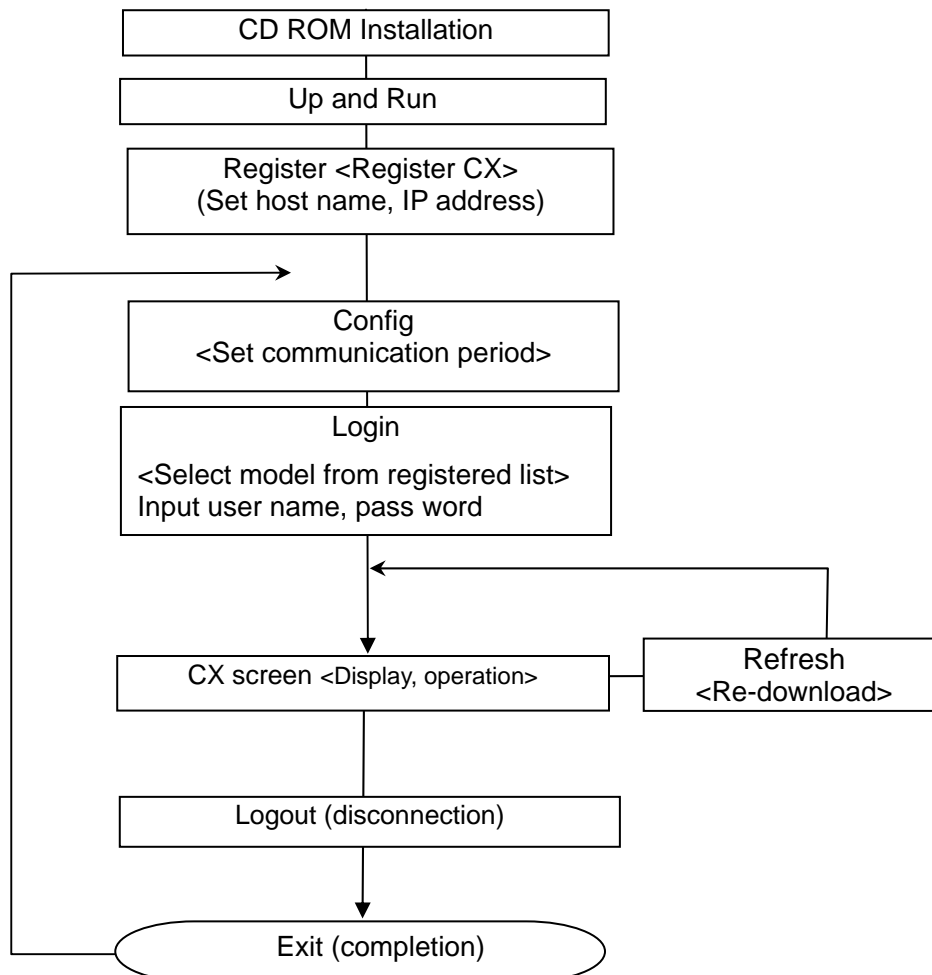
CX Operator is provided on a CD-ROM.

Installation procedure

1. Turn on the computer. Windows starts.
2. Insert the CD-ROM into the CD-ROM drive of the computer.
3. The installation program starts automatically. Follow the instructions on the screen to proceed with the installation. If the installation program does not start automatically when you insert the CDROM into the CD-ROM drive, use the following procedure to start it.
   - In [My Computer], double-click the CD-ROM icon.
   - Double-click the setup.exe file in the root directory. Installation starts. Follow the instructions on the screen to complete the installation.

Note

- Before starting the installation, make sure to exit all resident programs such as anti-virus programs.
- To reinstall the software, first remove it, then reinstall it.
- To remove the software, follow the procedure below.
   1. In the [Control Panel], double-click [Add/Remove Programs]. The [Add/Remove Programs Properties] dialog box appears. From the list, select [CX Operator] to remove it.
   2. In Windows Explorer, delete all the files (data files and folders) created after the installation, as well as the folder where the software was installed.

The CX Operator operation is followed by the order below.

```
        ┌─────────────────────────────┐
        │      CD ROM Installation     │
        └─────────────────────────────┘
        ┌─────────────────────────────┐
        │          Up and Run          │
        └─────────────────────────────┘
        ┌─────────────────────────────┐
        │   Register <Register CX>     │
        │  (Set host name, IP address) │
        └─────────────────────────────┘
        ┌─────────────────────────────┐
        │            Config            │
        │  <Set communication period>  │
        └─────────────────────────────┘
        ┌─────────────────────────────┐
        │            Login             │
        │ <Select model from registered│
        │          list>               │
        │  Input user name, pass word  │
        └─────────────────────────────┘
  ┌─────────────────────────────┐   ┌──────────────┐
  │  CX screen <Display,         │───│   Refresh    │
  │           operation>         │   │<Re-download> │
  └─────────────────────────────┘   └──────────────┘
        ┌─────────────────────────────┐
        │    Logout (disconnection)    │
        └─────────────────────────────┘
        (       Exit (completion)      )
```

1.4   Registration of CX IP Address

After running "Simple control panel", register CX IP address you wish to connect.

1. Register
    Open Register window by clicking (1) icon or selecting register from file menu
2. Add a new item
    Add new CX IP address
    (2):   Enter new CX IP address
    (3):   Delete a current item or move item up/down or change the item order
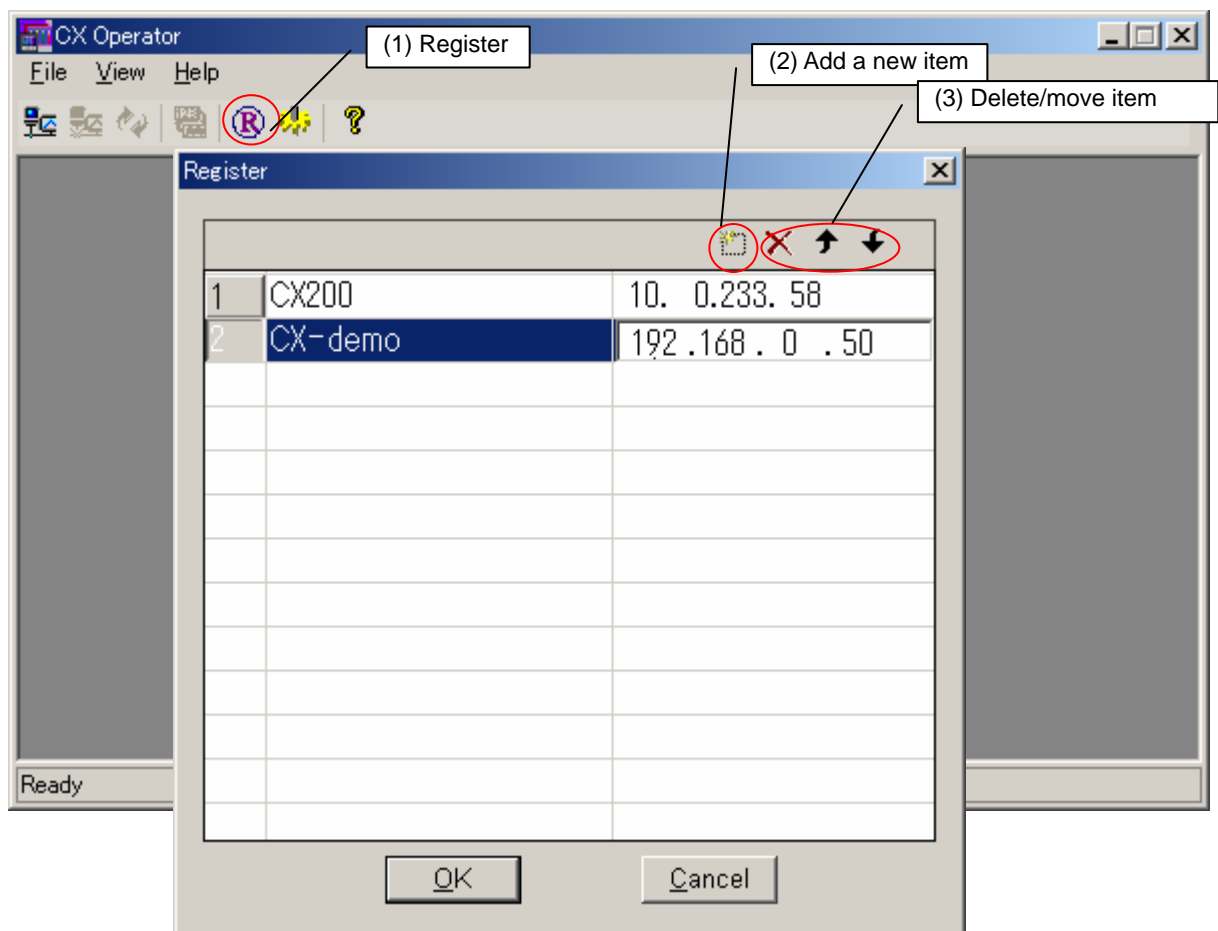3. After CX operator registration, click "OK", the dialog window will be closed and the registration is completed.

Figure 1 CX registration

1.5   Login

CX Login procedure:
1. Open CX Login window by clicking (1) icon or selecting login from file menu.
2. Select CX host name that you have registered in 1.4 chapter.
3. Enter User Name and Password (see the below Note).
4. When CX Login settings are set, click [OK]. To cancel the settings, click [Cancel].
    After succeeding the communication, CX control screen will be displayed.

Note
• **For login by administrator level, which allows to operate CX parameters and monitor screen switching)**:
    not use Ethernet login function of CX → Input "admin" for username and leave blank for password.
    use Ethernet login function of CX → Input the registered username and password for administrator
                                                level in CX.
• **For login by user level, which allows to display digital values of measurement/control data**:
    not use Ethernet login function of CX → Input "user" for username and leave blank for password.
    use Ethernet login function of CX → Input the registered username and password for user level
                                                in CX.
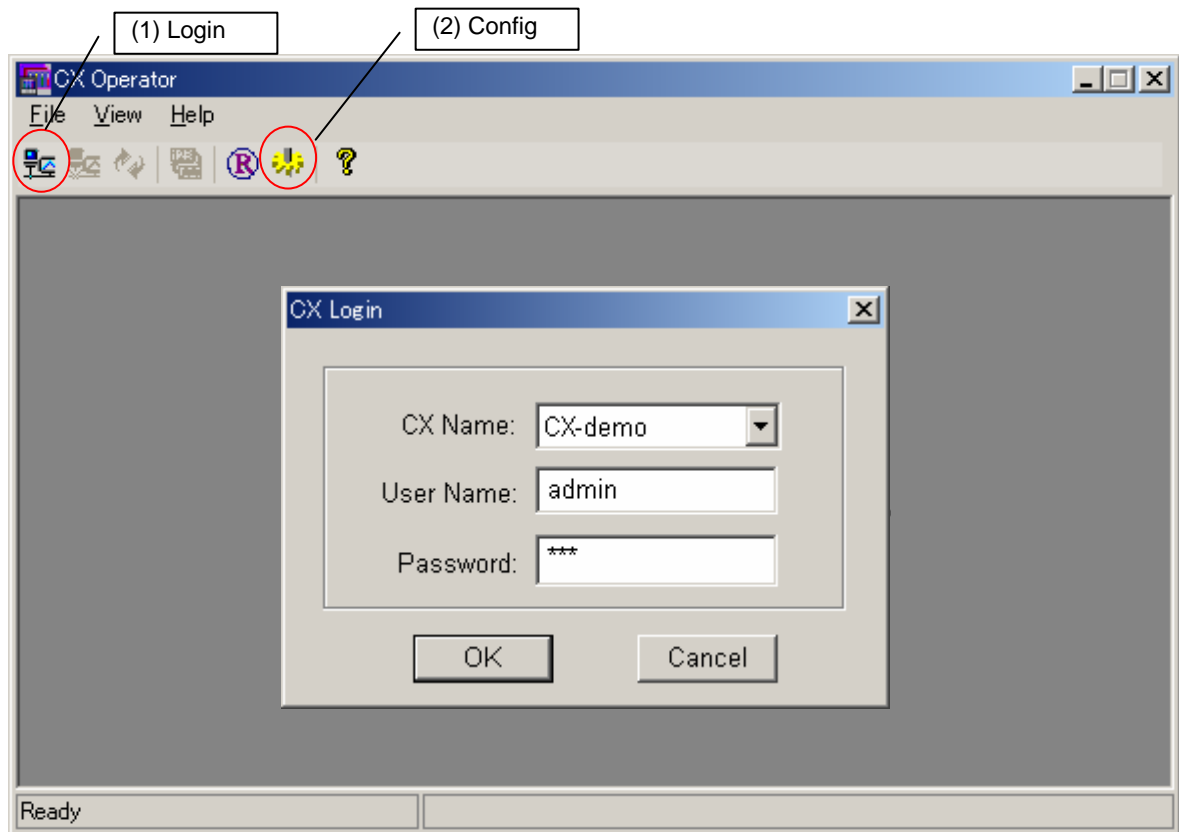
Figure 2 CX IP address setting

Communication Period

　Set communication cycle between CX and "CX Operator": click (2) icon in figure 2 or select "Config" from file menu.　Unit for communication cycle is m sec.

　Communication period can be set from 1000 ms to 60000 ms.

Note

• When there are large amount of communication data between CX and CX operator, some data cannot be updated within setting communication period. In that case, set longer period in order to update data within communication period.

1.6　Displaying the Version Information

To confirm the version of the CX Operator, open the [Help] dialog box.

Procedure

1. On the [Help] menu, click [About CX Operator].
   The [About CX Operator] dialog box appears.
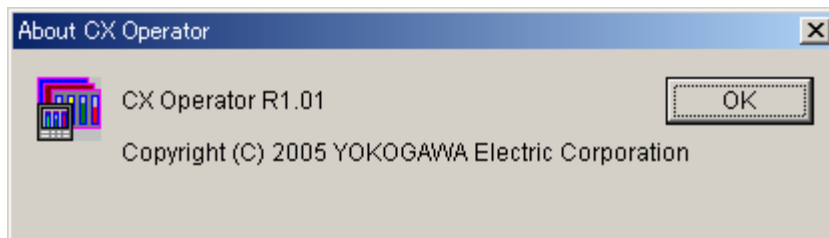
2. To close the dialog box, click [OK].

2.1 CX Operator Display

After succeeding communication with CX, the connected CX display screen is displayed.

Figure 3 CX Operator operation display

Control Tool Bar

Click View (check "Control tool bar") and the icons display ON/OFF of control/ trend/digital/bar/ overview/snapshot can be selected.

Note

• Even when CX display is control operation screen after up and run of CX, the operation for each loop can not be executed until selecting control group.

• The displayed error message number below the screen corresponds to the error message number of CX1000/CX2000.   The message displays until operating the control parameters.

Display Screen Style

Display screen style change: Click (3) icon, or select "Style shift" in file menu.
Display screen style is changed as follows.
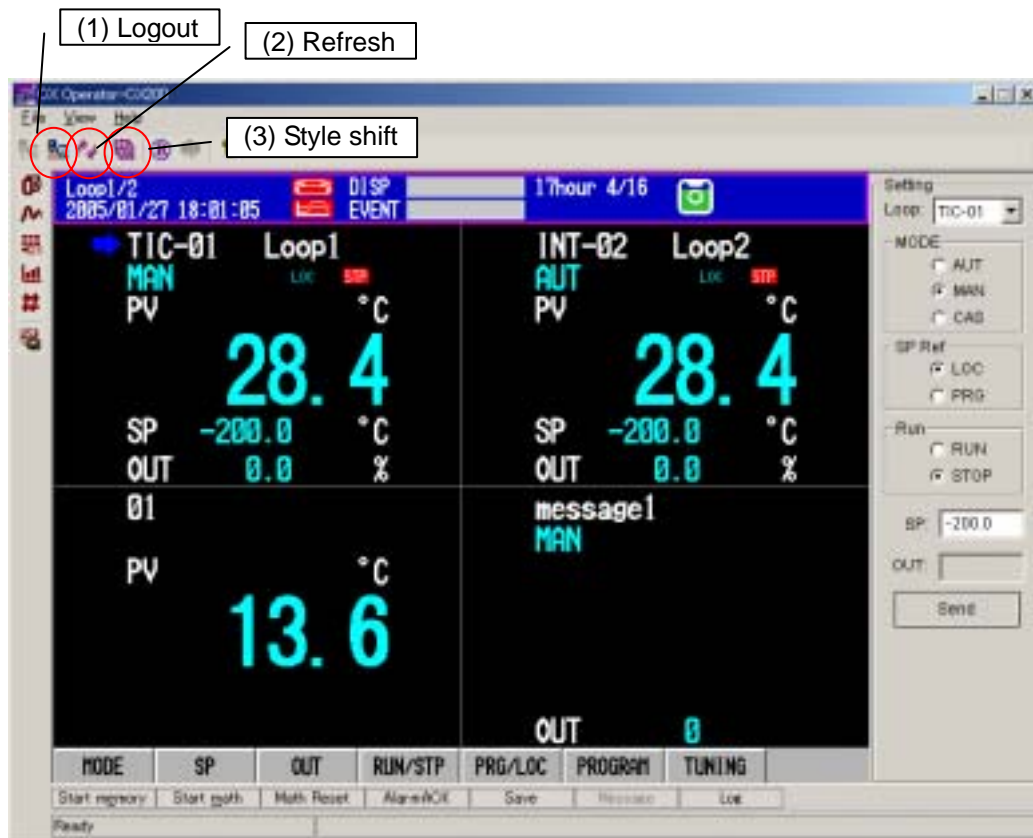
Figure 4 CX display screen1
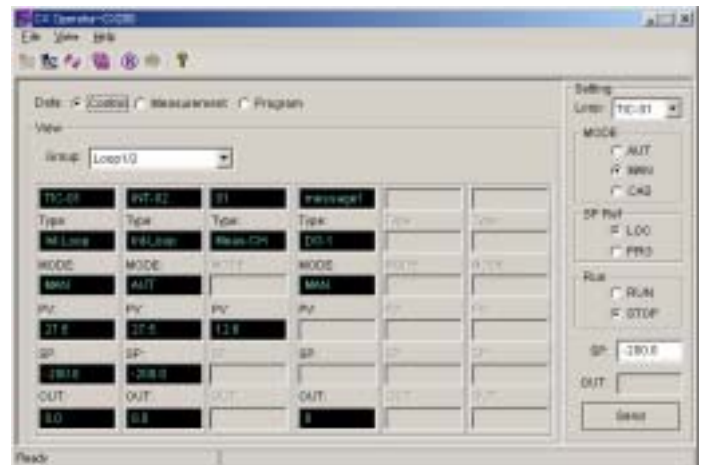
Figure 5 CX display screen 2

Refresh

CX Data update: Click (2) icon or select Refresh in file menu.
When on site CX parameter settings are changed, "Refresh" data.

Logout

CX operator logout: Click (1) icon, or select "Logout" in file menu.

2.2 Control Operation Display

Click the [icon] and select the "control group no." you wish to display, and the CX Operator display will be the selected control display.
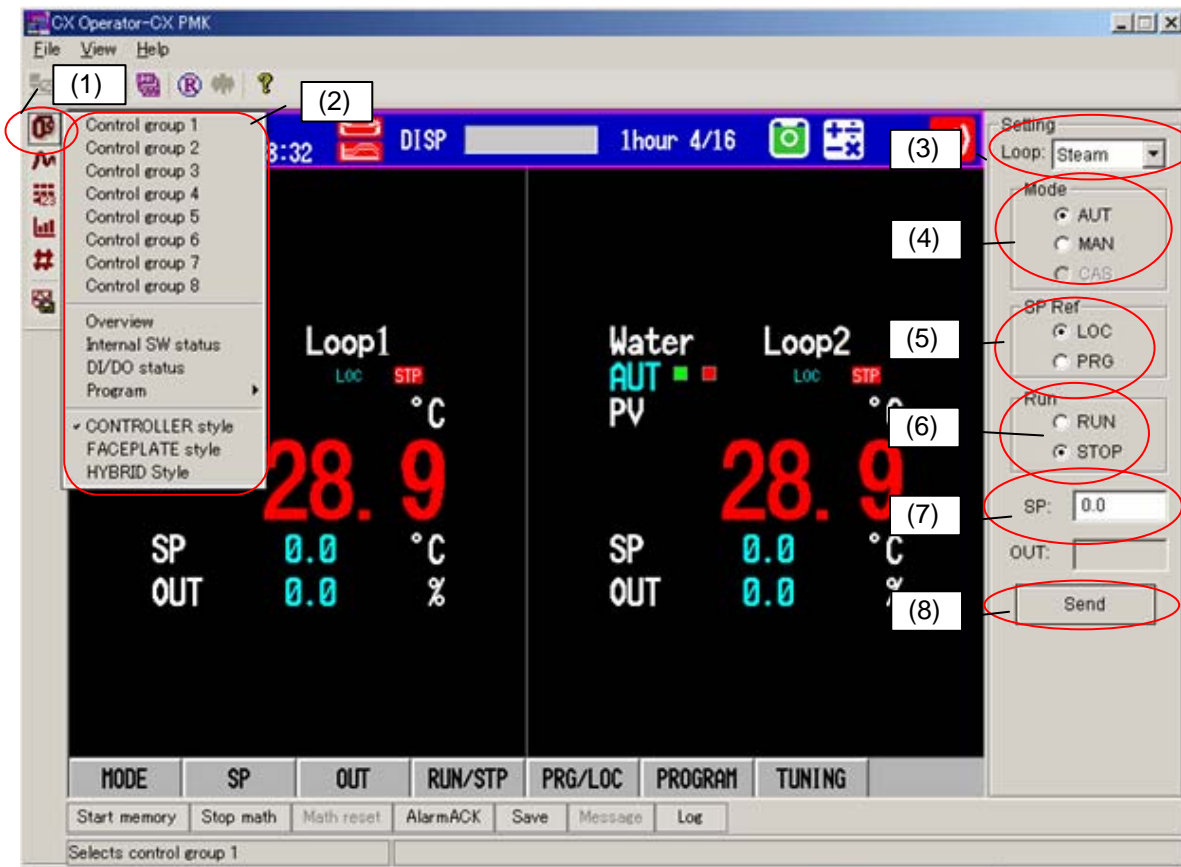
Figure 6 Control related screen

Control screen display

(1) [icon]: Control functions related to display

(2): Followings display types can be selected.
Display screen type: Control groups (CX2000: 1-8, CX1000: 1-4), Overview, Internal SW status, DI/DO status, Program, Control group screen type switching: Controller style, Faceplate style, Hybrid style

Each loop operation

The operation for each loop can be done in the right display

(3) (Loop): Select loop no. for the operation

(4) (MODE): Mode for the selected loop can be set.

(5) (SP Ref): Either LOCAL/REMOTE or LOCAL/PROGRAM for the selected loop can be set.

(6) (Run): Either RUN or STOP can be set.

(7) (SP): SP value can be set.
(OUT): The OUT value in the "RUN" of "MAN" mode can be set.

(8) (Send): The contents you set will be sent to CX after clicking "Send".

Note
- (SP, OUT) data can be updated automatically on CX Operator screen, but (MODE, SP Ref, RUN) status can not be updated even when these statuses are changed in CX. Please check the current operation status of (MODE, SP Ref, and RUN) on the CX Operator screen or execute "Refresh".
- In changing SP value or mode for the connecting external controllers, these can not be operated for some case because of the controller models or controller mode.

2.2-1 Program control display

When the "program" is selected in figure 6 (2), a program selection screen is displayed (figure 7).

Figure 7 Program selection screen

(1) (PT#): Program pattern no. can be specified.
(2) (RUN): RUN/Reset for the selected pattern no. in (1) is set.
(3) (Send): The RUN/Reset for the selected pattern no. in (1) can be executed.
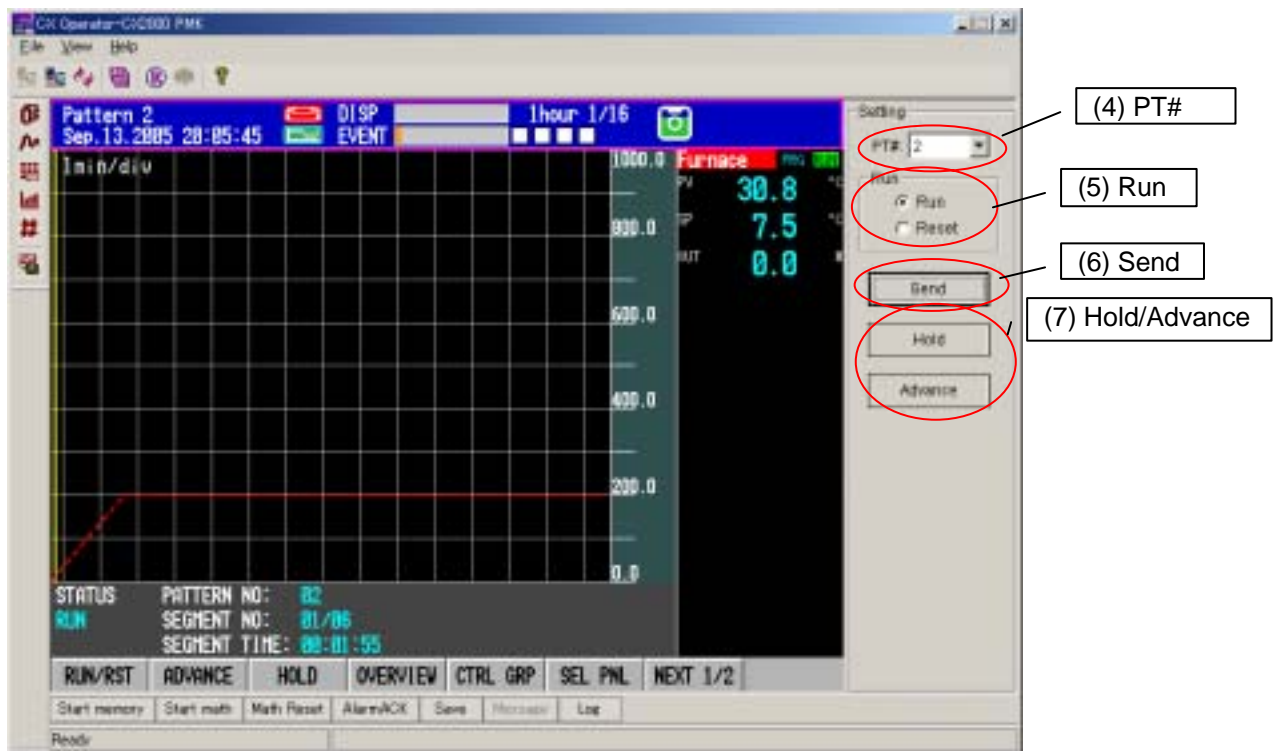Then, the display screen is switched to program operation screen (see figure 8)

Figure 8 Program operation screen 1

(4) (PT#): Pattern no. is selected.
(5) (RUN): RUN/Reset for the selected pattern no. in (4) is set.
RUN/Reset status is automatically updated when it is changed at CX.
(6) (Send): The RUN/Reset for the selected pattern no. in (4) can be executed.
(7) (Hold) or (Advance): Hold or Advance for the selected pattern no. in (4) can be executed.

When some program patterns are running

From the menu, ⬚ - [program], program pattern screen can be switched when some program patterns are running.
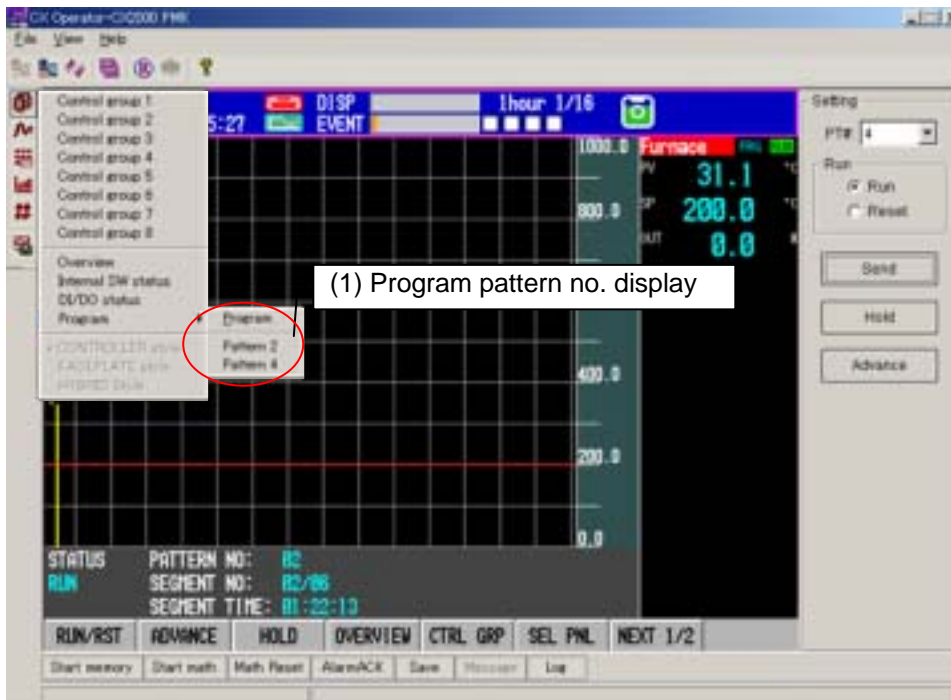
Figure 9 Program operation   screen 2

(1) Program pattern no. display: Running program pattern no.s are displayed.
     Program pattern no. screen switching: Select a program pattern no. you wish.

Note
  - When you run some program patterns simultaneously, the operation screen of first starting pattern
    is displayed in the CX Operator.
  - Program pattern no. display is available for CX1000/CX2000 ver3.07 or later.

2.3 Trend Display

Click an icon, and select a group no. you wish to display. The display screen will be switched to the selected trend display screen (Figure 11).
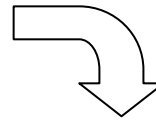

Figure 10 Trend group switching
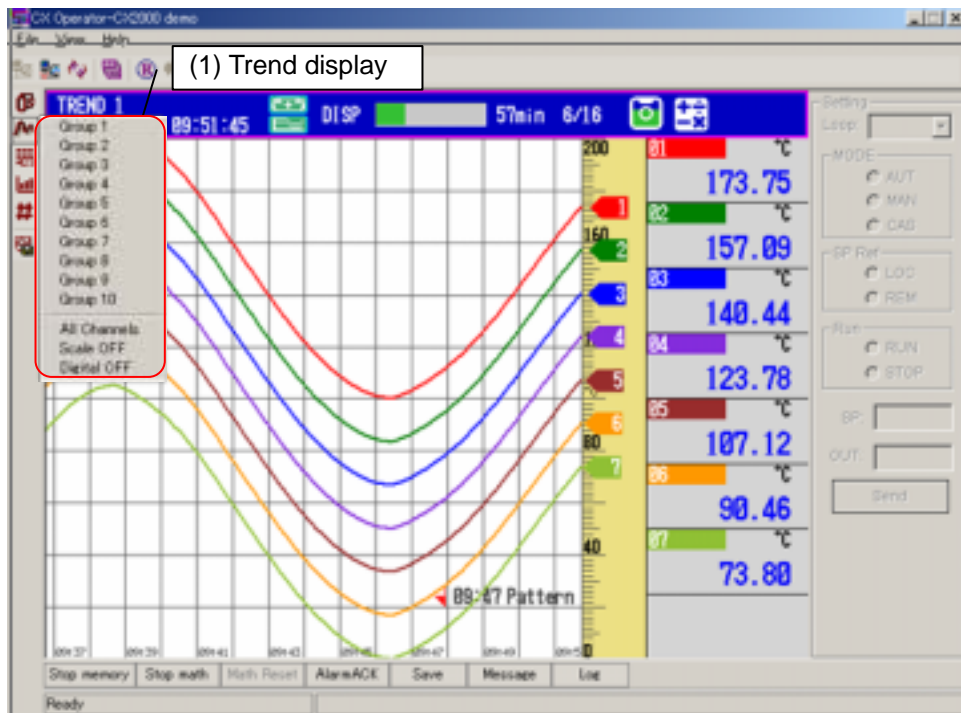
Figure11 Trend display screen

(1): Trend display group selection:
       Display group no. (CX2000: Group 1-10, CX1000: Group 1-6))
       Trend display method selection: All channels, Scale ON/OFF, Digital ON/OFF

2.4 Digital Display

Click an icon, ⊞ and select group no. you wish to display. The display screen will be switched to the digital display screen. (See figure 12)
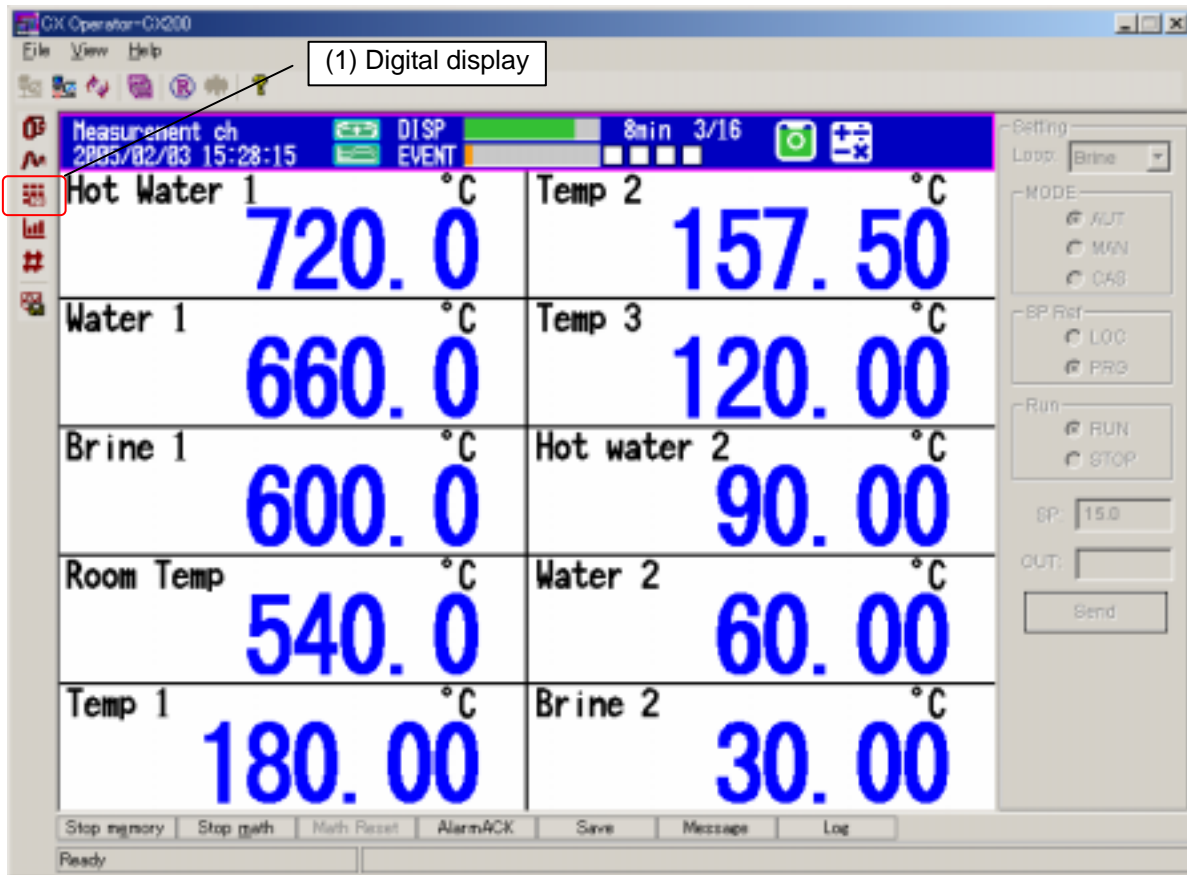

Figure 12 Digital display screen

(1) Digital display screen: Display group no. (CX2000: Group 1-10, CX1000: Group 1-6))

2.5 Bar-graph Display

Click an icon, 🔲 and select a display group you wish to display, the display will be switched to the bar graph display. (Figure 13)
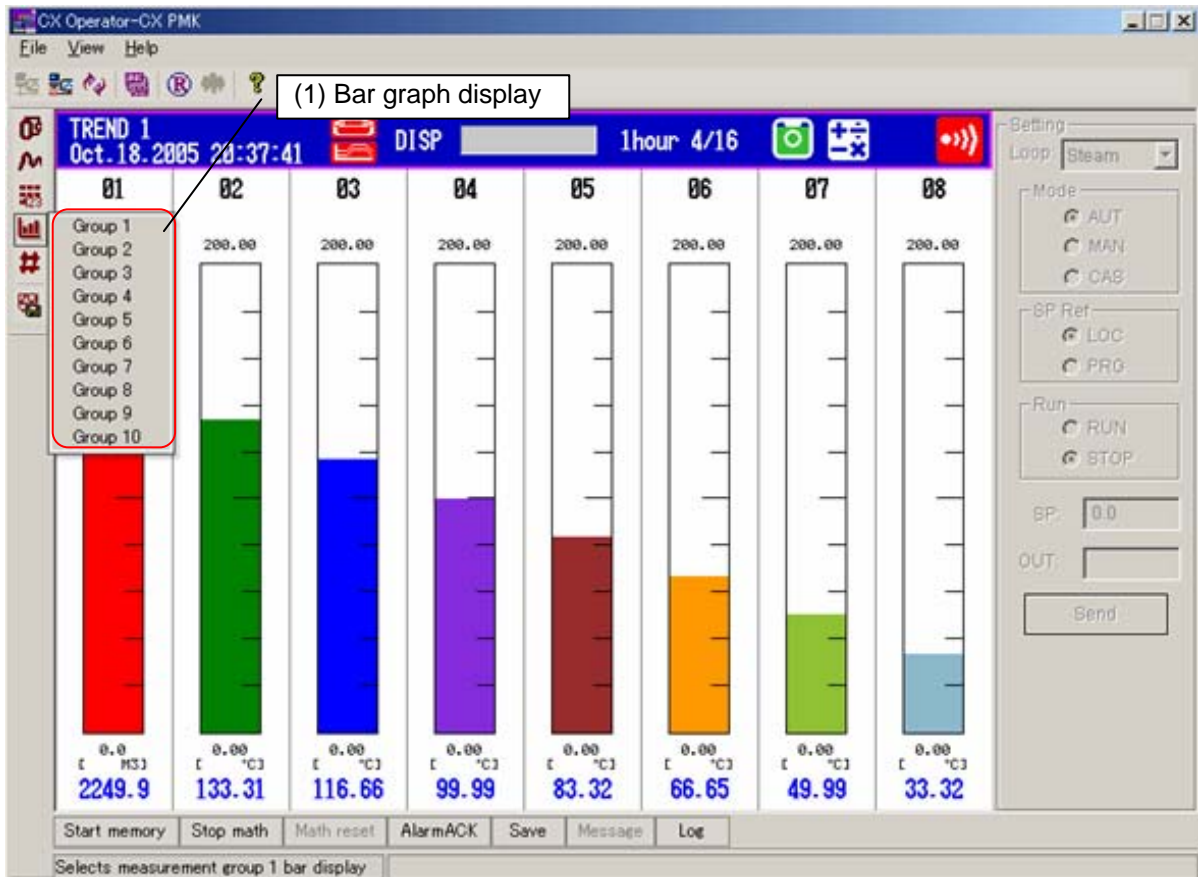

Figure 13 Bar graph display

(1) Bar graph display screen: Display group no. (CX2000: Group 1-10, CX1000: Group 1-6))

2.6   Overview Display

Click the icon, # and the display will be switched to overview display screen. (Figure 14)
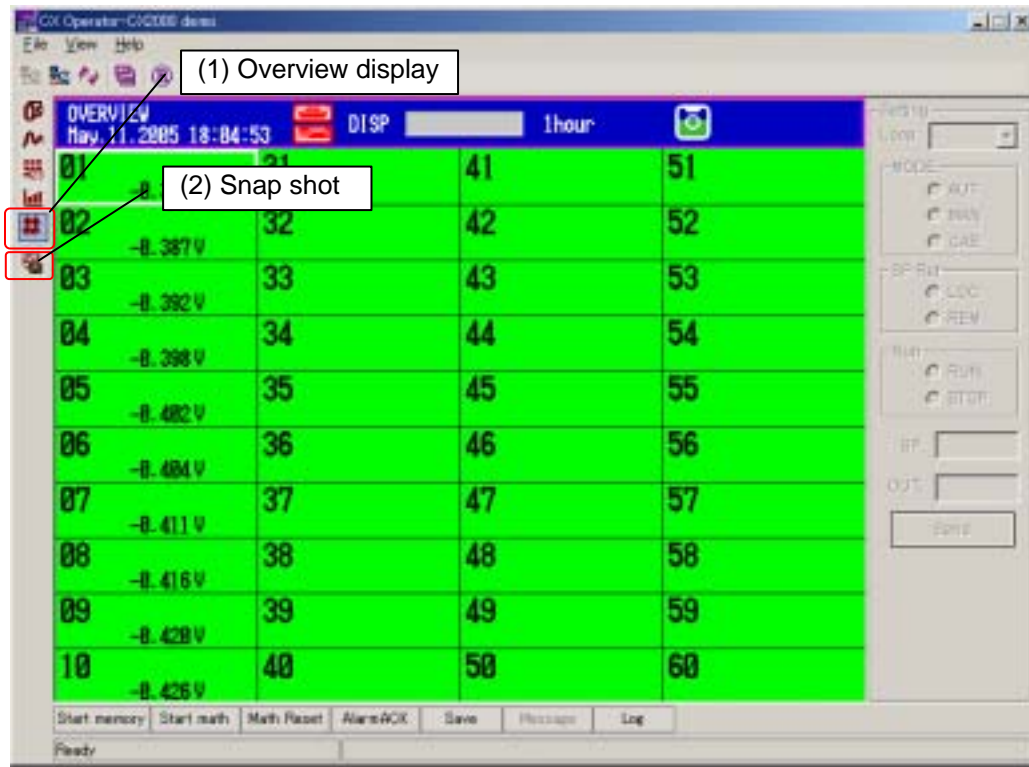

Figure 14 Overview screen

(1): Overview display screen selection

2.7   Screen Snapshot

Click the icon, and the CX screen image that is displayed in CX operator can be saved in a file.
The screen image is saved as a png file in your specifying PC file.

(2): The display screen image is saved.

2.8   The Other Function Key Operations

Memory start/stop, Math start/stop, Math reset, alarm ACK, save data in media, and message write can be executed by the keys in the display below.
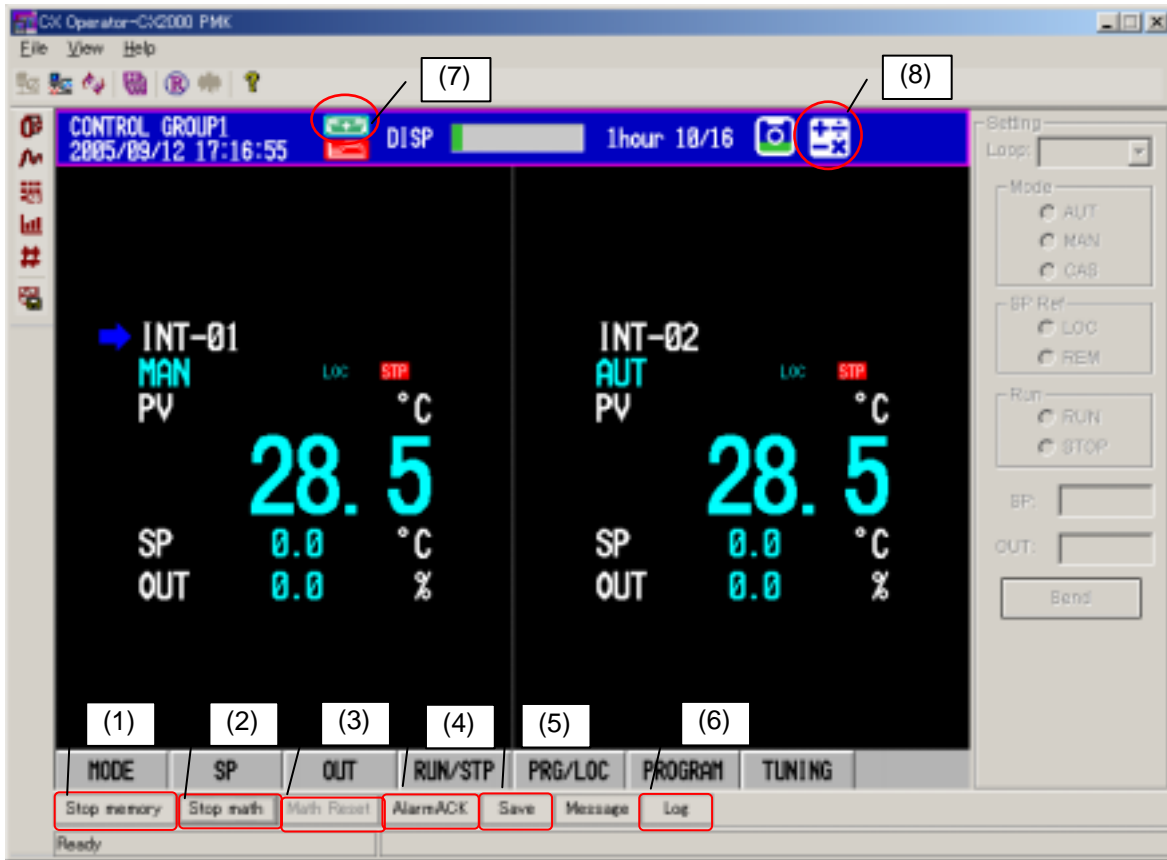

Figure 15 Operation function keys

(1) (Start/Stop memory) Memory start/stop can be executed.
(2) (Start/Stop math) Math start/stop can be executed.
(3) (Math Reset)   Math data can be reset.
(4) (AlarmACK)   Clear the alarm indication
(5) (Save) Click the "SAVE" and the (5) window will be open. The selected data files can be saved in the external media.
- Manual sample: Manual sample data file is made.
- Manual trigger: Manual trigger action is executed. According to CX sampling setting, the event data can be acquired.
- Display: Display data can be saved in the external media
(only under condition of "memory start" and "Auto save" settings)
- Event: Event data can be saved in external media.
(only under condition of "memory start", "Free mode" and "Auto save" settings)
(6) (Log) Select one of the followings log types. The data can be shown by time sequence.
Alarm summary, communication, Error, key login, web operation, E mail, FTP, message

Note

• Start/stop memory and start/stop math statuses of (1), (2) can not updated even when these operations are done from CX. Please check these operation statuses on the CX Operator screen by seeing operation icons, (7) and (8) or execute "Refresh".

Message write

Message write is executed with soft key displayed in right side below. During memory start, the message write function key is available.   Click the key and (1) window will be open. Select a message you wish to write.
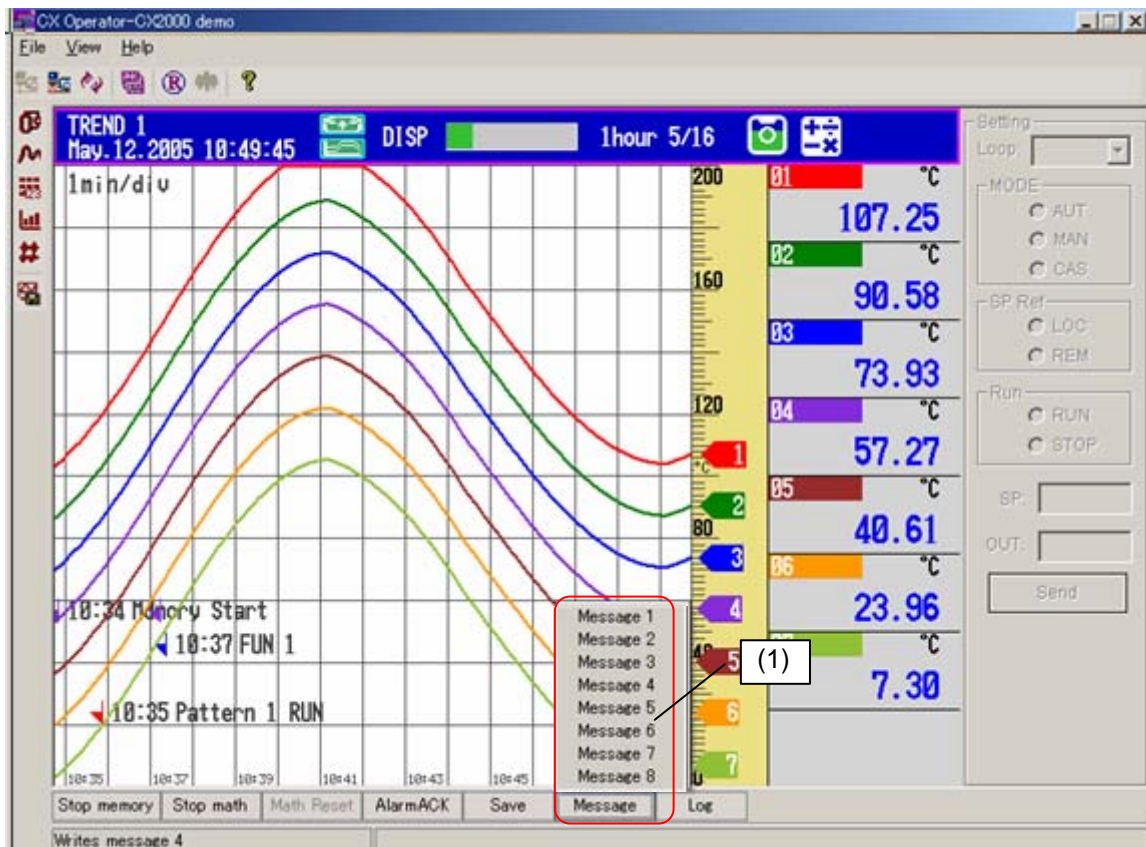

Figure 16 Message function key

(1) (Message): Message 1-8 you wish to write can be selected.

For model with /S33 or /S35: Message 1-8 corresponds to message 1-8 of 1 group in CX.

3.1 CX Operator Display

After login by a user level, the digital values for each display group are displayed.

Operation

Display data group for control data or measurement data can be selected.

(1) Control: Control data can be selected.
(2) Measurement: Measurement data can be selected.
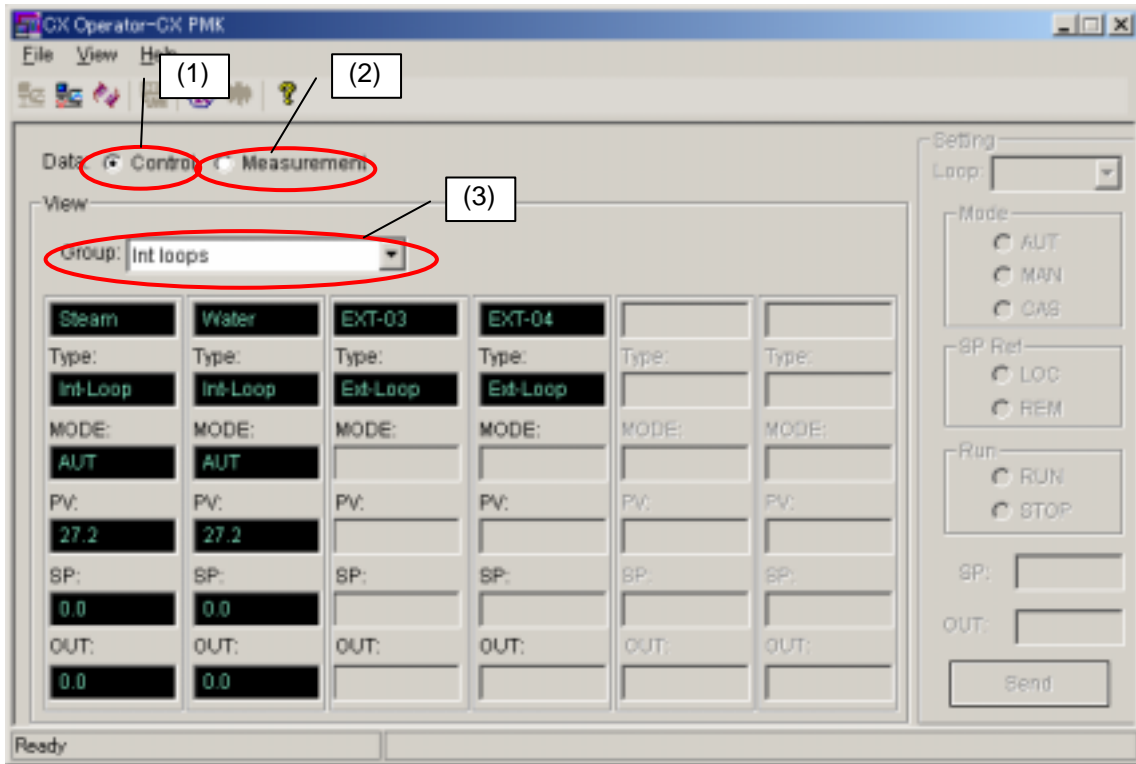(3) Group: Display group for each control/measurement data can be selected.

Figure 17 Operation display (login by a user level)

General Specification:

- Communication
    Ethernet(10baseT) TCP/IP protocol
- Display type
    Control Display: Control group (embedded loops, external loops, DIO, measurement channels),
                MODE, SP, PV, OUT, Internal SW status, DI/DO status, Program pattern number
    Measurement display:
                Tag name, type (embedded loops, external loops, measurement channels,
                Math channels), PV

- Available Setting Items
    Communication period: Communication period (1000 to 60000ms)
    Control: Mode (MAN/AUTO/CAS), LOC/REM (or PRG) switching, RUN/STOP switching, SP, OUT
            Program{RUN/RESET, Hold, Advance, pattern no.}
    Measurement: Memory start/stop, Math start/Stop, math reset, Alarm ACK,
                Saving data (to the external medium), Message write