GENERAL

This GS covers the hardware specifications of LPCKIT Enclosed Display Style Console Assembly.
You can use the assembly as Human Interface Station installing a general-purpose PC in it.

HARDWARE SPECIFICATIONS

Display Units
Display: Single or dual stacked TFT LCDs monitors
Display Size: 19-inch Display area size LCDs
Resolution: 1280 x 1024 pixels
FOV (field of view):
  up to at least 60° to left or right
  up to at least 45° above
  up to at least 20° below
Connection: Connected to a display output of a PC. Stacked LCDs require a PC with two display outputs.

Touch Panel (optional)
Touch Panel Type:
  Optical type, provided with only the lower LCD (option code /1TP) or with both stacked LCDs (option code /2TP).
Connection: Connected to a dedicated interface inside the console assembly.

Operation Keyboard
Eight-control-key Operation Keyboard:
  Dustproof short-stroke key
User Function Key: 64 keys
Increment/Decrement Keys: 8 sets
Electronic Sounds:
  7 kinds of loudspeaker sounds and 2 kinds of key sounds
Connection: Connected to a dedicated interface inside the console assembly.

Interfaces
Enclosed Display Style Console Assembly is to be used by connecting the interface unit with a PC’s USB port. The interface unit consists of the followings.
The interface for PC
  USB 2.0 (full-speed, bus-powered)
Interfaces for Internal Devices
  3 ports for touch panels and an operation keyboard
RS-232C Interface
  1 D-sub 9-pin male port

Contact Inputs/Outputs
HIS Status Alarm Output (RDY): NO, NC, C
Rated voltage: 250 V AC, 30 V DC, 125 V AC (CSA C22.2 No.61010-1 Approved for 125 V AC and 30 V DC)
Rated current: 2 A
Rated electric power: 125 VA
Auxiliary Contact Outputs (DO1, DO2): +, –
  Number of points: 2 points (photo MOS relay contacts)
  Contact rating: 30 V DC, 0.1 A or less
Auxiliary Contact Inputs (DI1, DI2): +, –
  Number of points: 2 points
  Input signals: Contacts or voltages
  Contact inputs: OFF signal 100 kΩ or greater;
  ON signal 200 Ω or less
  Contact rating: 5 V DC, 20 mA or greater
  Voltage inputs: OFF signal 4.5 to 25 V DC;
  ON signal ±1 V DC, 200 Ω or less

Fan Status and Internal Temperature Monitoring
The statuses of door fans and console internal temperature are continuously monitored. A system alarm message is output upon an abnormality.
Power Supply

Power Supply Voltages and Frequency
To be specified by the corresponding suffix code when ordering.
Voltage: 100–120 V AC, Frequency: 50/60 Hz
Voltage: 220–240 V AC, Frequency: 50/60 Hz

Maximum Power Consumption

100–120 V AC supply
- Console assembly only, with single LCD: 120 VA
- Console assembly only, with dual stacked LCDs: 190 VA
- Assembled PC: 400 VA
- Assembled UPS for the /UT option: 230 VA
- Service power receptacles: 360 VA (3 A)
  (Make sure that service power receptacle requirement is 130 VA or less to use UPS for the /UT option.)

220–240 V AC supply
- Console assembly only, with single LCD: 150 VA
- Console assembly only, with dual stacked LCDs: 230 VA
- Assembled PC: 400 VA
- Assembled UPS for the /UT option: 230 VA
- Service power receptacles: 720 VA (3 A)
  (Make sure that service power receptacle requirement is 490 VA or less to use UPS for the /UT option.)

Terminals
- Power Supply: M6 screw terminal connection
- Grounding: M8 bolt terminal connection
- Contact inputs/outputs: M4 screw terminal connection

Console Casing

Paint Color
The codes in the parentheses below indicate the Munsell codes of the equivalent colors, respectively.
- Body: Frosty white (2.5Y8.4/1.2)
- Door: Pale sea moss green (7.8Y5.0/2.1)
- LCD side: Slate gray (3.3PB2.5/0.5)
- Channel Base: Spring black (3.3PB2.5/0.5)
- UPS Tray Options: A tray for housing a UPS (Options: /UT):
  Max. dimensions of UPS to be installed: 155 (W) x 400 (D) mm, and 150 to 175 (H) mm

Channel Base Optional Specifications
- Channel Base with Hole for Cable:
  Specify Optional Code "CH".
  A hole for cable, 300(W) by 40(H) mm is made at the rear of the channel base (A filler plate is attached upon delivery).
  To increase channel base height by 50 mm: Specify Optional Code "HB".

Component Makeup
- Engineering Keyboard (keyboard for built-in PC):
  Can be placed in the drawer.
- Case for Mouse of built-in PC: Not supplied.
- 8-control-key Operation Keyboard:
  Attached to the desk.

Installation and Environmental Conditions
The following shows the installation and environmental conditions for only the console assemblies. For the conditions required by the assembled PC, see the respective documentation for PC.
See also “CENTUM VP Installation Guidance” (TI 33K01J10-50E) for the conditions of the console assembly where a general-purpose PC is installed.

Temperature
- Normal Operating Conditions: 5 to 40 °C
- Transportation and Storage Conditions: –20 to 60 °C

Relative Humidity
- Normal Operating Conditions: 20 to 80 % RH (no condensation)
- Transportation and Storage Conditions: 20 to 80 % RH (no condensation)

Temperature Changes
- Normal Operating Conditions: ±10 °C/h
- Transportation and Storage Condition: ±20 °C/h

Power Supply
- 100–120 V AC ±10 %, 50/60 Hz ±3 Hz
- 220–240 V AC ±10 %, 50/60 Hz ±3 Hz

Withstanding Voltage
- 1500 V AC for 1 minute

Insulation Resistance
- 20 MΩ at 500 V DC

Grounding
- Independent ground of up to 100 Ω resistance

Noise
- Electric Field: 3 V/m or less (26 MHz to 1.0 GHz)
  3 V/m or less (1.4 to 2.0 GHz)
  1 V/m or less (2.0 to 2.7 GHz)
- Magnetic Field: 30 A/m (AC) or less,
  400 A/m (DC) or less
- Static Electricity: 4 kV or less (direct discharge),
  8 kV or less (aerial discharge)

Vibration
- Continuous Vibration:
  Total amplitude of 0.5 mm or less (1 to 14 Hz), for 5 seconds
  Acceleration of 2.0 m/s² or less (14 to 100 Hz)
- Earthquake-proof: 4.9 m/s² or less
  Vibration during Transportation (while in packaging):
    Horizontal 2.9 m/s² or less,
    Vertical 4.9 m/s² or less

Dust
- 0.3 mg/m³ or less

Corrosive Gases
The same level as required for general offices.
IP Protection Rating
IP20

Regulatory Compliance
The following shows the regulatory compliance with which the console assembly complies.
For the detailed information of following standards, see “System Overview” (GS 33K01A10-50E, GS 33K01A20-50E).
For those standards with which the assembled PC complies, see the respective documentation for the PC.

Safety Standards
[CSA] (for 100-120 V AC power supply)
[CE Marking] (for 220-240 V AC power supply)

EMC Conformity Standards
[CE Marking] (for 220-240 V AC power supply)
[C-Tick Marking] (for 220-240 V AC power supply)
[KC Marking] (for 220-240 V AC power supply)

Requirements of PC to be Assembled
The PC must meet the specifications required to run Standard Operation and Monitoring Function and Standard Builder Function for the CENTUM VP, as well as meet the following requirements.

Size
Small enough to be installed in the console assembly, (i.e., 445 mm wide, 450 mm deep, and 206 mm high or smaller)

Empty Expansion Slots
Expansion slots must be available for installing all of the following cards.
• Display card (For two LCDs, the PC needs two ports of display outputs.)
• VI702 (Vnet/IP interface card) or VF702 (Control bus interface card)

USB Port
USB 1.1/2.0 Type A
Need an extra port other than a keyboard and a mouse.

Display Output
The PC must be capable of outputting the display output at a resolution of 1280 x 1024 pixels and refresh rate of 60 Hz.

Power Consumption
Choose a PC with the power consumption of 400 VA or less.

Regarding LCD Quality
The LCDs used in console assemblies have been manufactured using an extremely advanced technology; nevertheless, a few pixels or less may remain continuously on or a few pixels or less may remain continuously off. This is not a fatal defect and your understanding is highly appreciated.
The design of LCD is subject to change without notice for improvement.

EXTERNAL DIMENSIONS

Weight of single-LCD console assembly (with all options): Approx. 125 kg excluding PC
Weight of dual-stacked-LCD console assembly (with all options): Approx. 155 kg excluding PC
The height of the channel base in the figure, 75 mm is a standard specification.
For the channel base 50 mm taller than standard type, specify Suffix Code /HB to change the height of the channel base to 125 mm (=75 + 50 mm).
## MODEL AND SUFFIX CODES

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPCKIT</td>
<td>-M1</td>
<td>Model 1</td>
</tr>
<tr>
<td></td>
<td>L3</td>
<td>Single 19-inch Display area size LCD (*2)</td>
</tr>
<tr>
<td></td>
<td>L4</td>
<td>Dual stacked 19-inch Display area size LCD (*2)</td>
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<tr>
<td></td>
<td>1</td>
<td>8-control-key Operation Keyboard</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>RS-232C and DI/DO interface (*3)</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Always 0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>100-120 V AC power supply</td>
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<tr>
<td></td>
<td>2</td>
<td>220-240 V AC power supply</td>
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### Option Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/PS2</td>
<td>PS/2 Interface Extension Cable (tow cables) (*4)</td>
</tr>
<tr>
<td>/USB</td>
<td>USB Interface Extension Cable (tow cables) (*4)</td>
</tr>
<tr>
<td>/AVC</td>
<td>Analog Display Cable (*2)</td>
</tr>
<tr>
<td>/DVC</td>
<td>Digital Display Cable (*2)</td>
</tr>
<tr>
<td>/TP</td>
<td>With touch panel for lower LCD</td>
</tr>
<tr>
<td>/2TP</td>
<td>With touch panel both for upper and lower LCD (*5)</td>
</tr>
<tr>
<td>/UT</td>
<td>UPS tray</td>
</tr>
<tr>
<td>/CH</td>
<td>Channel base with cable hole</td>
</tr>
<tr>
<td>/HB</td>
<td>Channel base height increased by 50 mm</td>
</tr>
</tbody>
</table>

*1: Prepare a general-purpose PC to install to Enclosed Display Style Console Assembly. Standard Operation and Monitoring Function (LHS1100 or LHM1101) and Console HIS Support Package for Enclosed Display Style (LHS1120) are required to run the PC.

*2: The quantity (one or two) and the type of the display cable need to be specified according to the PC’s specification.

*3: Enclosed Display Style Console Assembly is connected to a USB port of a PC. The temperature and fan status monitors are standard features. The assembly does not include VI702 nor VF702 card. The VI702 or VF702 card needs to be ordered separately.

*4: The extension cables for engineering keyboard and mouse, either for PS/2 or USB port, need to be specified according to the PC’s specification.

*5: Can be specified only when specifying suffix code L4 following M1.

### STANDARD ACCESSORIES

<table>
<thead>
<tr>
<th>Name</th>
<th>Part No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air filter</td>
<td>T9070CB</td>
<td>—</td>
<td>1</td>
<td>For door fans</td>
</tr>
<tr>
<td>Function key labels</td>
<td>T9070PN</td>
<td>—</td>
<td>1 set</td>
<td>—</td>
</tr>
</tbody>
</table>

### RELATED PRODUCTS

Model AKT201 Connection kit for console (for single LCD)
Model AKT202 Connection kit for console (for stacked LCD)

### ORDERING INFORMATION

Specify the model and suffix codes.

### TRADEMARKS

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