安装 / Installation

	螺栓 stud
	金属面板 metal panel
pGD	
	聚碳酸酯贴面 polycarbonate label
螺母 nut	
扁平线缆 flat cable	

Fig. 1   Fig. 2

设置地址 / *Configuring the address*

```
Display address
setting.........:nn

I/O Board address:xx
```
Fig. 3

```
Display address
changed
```
Fig. 4

设置专用和共享手操器 /
Assigning the list of private and shared terminals
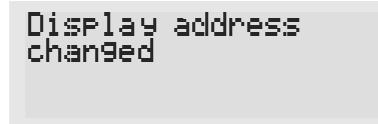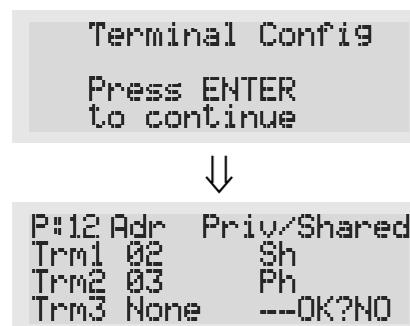
```
Terminal Config

Press ENTER
to continue
```
⇓
```
P:12 Adr  Priv/Shared
Trm1 02      Sh
Trm2 03      Ph
Trm3 None  ---OK?NO
```
Fig. 5

(RC) 感谢您选择卡乐产品。我们相信您会对该款手操器满意。

PGD图形手操器是一种电子设备，它完全兼容先前的PCOI/PCOT系列手操器；它允许完全通过图标显示（在应用软件程序开发阶段定义）进行图形管理，以及国际通用字体符号管理。有两种规格可供选择：5x7和11x15像素。

PGD0***N**/PGD1***N**型手操器，没有按键和LED灯，能连接一个外部薄膜键盘（最多8个按键和3个LED指示灯）。

应用程序驻存在pCO主板上，因此，运行时手操器不需要任何软件。

另外，手操器运行温度范围很大（-20~60℃）。

型号代码

	绿色背光	白色背光
120x32 像素型	PGD0000N00	----
132x64 像素型	PGD1000N00	PGD1000NW0

安装

这一款手操器被设计成装配在金属安装面板的里面，如Fig. 1-2所示，用焊接的柱头螺栓固定，这个金属面板的厚度至少为2 mm，参看Fig. 10-11，这样可以保证显示器的可视突出部位不被金属面板阻挡视线。

金属安装模板的尺寸为78x30 mm（PGD0如Fig. 8）或74x39 mm（PGD1如Fig. 9），另外在安装面板还需要开一个让扁平电缆通过的小孔。这一扁平电缆用来连接PGD的按键，尺寸至少为40x10 mm。

当通过前面板安装扁平电缆时要小心不要损坏电缆。

电气连接

手操器断电后，把电缆插入PGD专用接口，注意极性。针脚1（pin 1）在接口中标着D标识。然后用电话型电缆线（S90CONN00*）连接pCO主板和手操器，使用手操器后面的专用接口(RJ12)。

设置地址

手操器地址只能在电源接通后才能设置，使用RJ12电话型接口（工厂默认值32）。

要进入配置模式，同时按压↓↓↑↓键（所有型号的图形显示手操器中都有这三个按键）至少5秒钟；显示屏将显示如Fig. 3的界面，光标会在显示屏的左上角闪烁。

- 更改手操器地址（显示地址配置），按下 ↵ 键一次：光标会移到地址值区域（nn）。
- 使用↓↑键选择所需的地址，然后再次按下↵键确认。如果选择的值与之前保存的那个值不同，将显示如Fig. 4的界面，并且这个新值将被保存永久性存储中。

如果这一区域值nn设为0，手操器和pCO之间使用"点对点"通讯协议（不是PLAN），"O/I板地址区域：xx" 将不再显示，因为没有意义。

pCO：设置专用和共享手操器

如果与每个单独的pCO主板关联的手操器需要修改，请按如下方式进行：

- 使用↓↑键，进入配置模式，与前一节的说明相同；
- 按下 ↵ 键直到光标移动到xx区域（I/O地址），如Fig. 3；
- 使用↓↑键选择pCO主板，可用的值对应有效的在线pCO主板。如果pLAN网络工作不正确，或者如果pCO主板不存在，这个区域则不能修改，显示"—"符号。
- 再次按下 ↵ 键，依次将显示如Fig. 5的内容；
- 在这里，同样使用 ↵ 键，光标会从一个区域移到另一个区域，使用↓↑键改变当前区域的值。这一区域P:xx显示的是所选择的主板的地址值；在如下面的范例所示，12这个数值已经被选择了。
  要退出配置程序并保存数值，选择"OK?"区域，选择YES并按下↵键确定。
  在这个区域中"Adr"栏表示，与pCO主板相关联的手操器地址值为12，而"Priv/shared"栏表示手操器的类型。

注意：PGD手操器不能被配置为"Sp"（共享打印机），因为它没有打印机接口。

如果手操器上的按键超过30秒钟没有被按压，配置程序会自动退出，不会保存任何改变。

故障信号

如果手操器检测到自身所连接的pCO主板掉线，将会显示如下信息：

`I/O Board xx fault.`

另一方面，如果手操器没有接收到来自网络的信号，显示屏将显示如下信息： NO LINK。

(ENG) *Thank you for your choice. We trust you will be satisfied with your purchase.*

The pGD graphic display is an electronic device that is compatible with the previous PCOI/PCOT line terminals; it allows complete management of graphics by the display of icons (defined at an application software development level), as well as the management of international fonts, in two sizes: 5x7 and 11x15 pixels.

*Versions PGD0***N**/PGD1***N**, without keypad and LEDs, can be connected to an external membrane keypad (max. 8 buttons and 3 LEDs).*

The application software resides on the pCO board, and therefore the terminal does not require any additional software for operation.

Furthermore, the terminal features a wide operating temperature range (-20T60 °C).

Model codes

	Green Backlight	*White Backlight*
120x32 version	PGD0000N00	----
132x64 version	PGD1000N00	PGD1000NW0

Installation

These terminals are designed for assembly on the rear of the sheet metal panel, secured by welded studs, as shown in Fig. 1-2. The sheet metal must be at least 2 mm thick, see Fig. 10-11, so as to prevent the visual part of the display protruding from the plane of the sheet metal.

The drilling template must measure 78x30 mm (PGD0 Fig. 8) or 74x39 mm (PGD1 Fig. 9). An additional opening is also required for passing through the flat cable that connects the keypad to the PGD, measuring at least 40x10 mm.

When mounting the keypad to the front panel, be careful not to damage the flat cable.

Electrical connection

With the terminal OFF, insert the keypad connector in the PGD, observing the polarity, pin 1 on the connector is marked by the symbol D; then connect the telephone cable (code S90CONN00) from the pCO board to the special connector (RJ12) located on the rear of the terminal.*

Configuring the address

The address of the terminal can be configured only after having connected the power supply, using the RJ12 telephone jack (the factory default value is 32).

To access configuration mode, press the ↓↑↵ buttons (present on all versions) together and hold them for at least 5 seconds; the screen shown in Fig. 3 will be displayed, with the cursor flashing in the top left corner:

- *To change the address of the terminal (display address setting), press the ↵ button once: the cursor will move to the address field (nn).*
- *Use the ↓↑ buttons to select the desired value, and confirm by pressing ↵ again. If the value selected is not the same as the one saved previously, the screen shown in Fig. 4 will be displayed, and the new value will be saved to the permanent memory.*

If the field nn is set to 0, the terminal will communicate with the pCO board using "point-to-point" protocol (not pLAN) and the field "I/O Board address: xx" will not be displayed, as it has no meaning.

pCO: assigning the list of private and shared terminals

At this point, if the list of terminals associated with each individual pCO board needs to be modified, proceed as follows:

- *access configuration mode using the ↓↑ buttons, as described in the previous paragraph;*
- *press the ↵ button until the cursor moves to the field xx (I/O board address) Fig. 3;*
- *use the ↓↑ buttons to select the pCO board in question. The values available correspond to the pCO boards that are effectively on line. If the pLAN network is not working correctly, or if no pCO board is present, the field cannot be modified, and the symbol "–" will be displayed;*
- *pressing ↵ again displays the screens shown in Fig. 5, in sequence;*
- *here too, the ↵ button moves the cursor from one field to the next, and the ↓↑ buttons change the value of the current field. The field P:xx shows the address of the board selected; in the example shown in the figure, the value 12 has been selected;*
- *to exit the configuration procedure and save the data, select the field "OK ?", choose Yes and confirm by pressing ↵*
The fields in the "Adr" column represent the addresses of the terminals associated with the pCO board that has address 12, while the Priv/Shared column indicates the type of terminal.

Note: the pGD terminals cannot be configured as "Sp" (shared printer), as they have no printer port.

If the terminal remains inactive (no button is pressed) for more than 30 seconds, the configuration procedure is exited automatically, without saving any changes.

Fault signals

If the terminal detects the off-line status of the pCO board it is associated with, the display shows the message:

`I/O Board xx fault.`

*On the other hand, if the terminal receives no signal from the network, the display shows the following message: **NO LINK**.*

设置专用和共享手操器
Assigning the list of private and shared terminals

```
NetSTAT 1□□□□....8
T:xx    9...□..16
Enter 17........24
To quit25□□.....32
```
Fig. 6
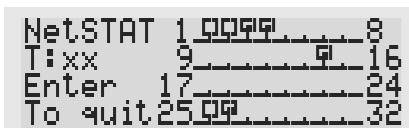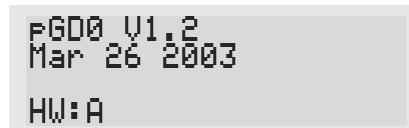
```
pGD0 V1.2
Mar 26 2003

HW:A
```
Fig. 7

尺寸 / *Dimensions*

pGD0开孔模板 / *pGD0 drilling template*
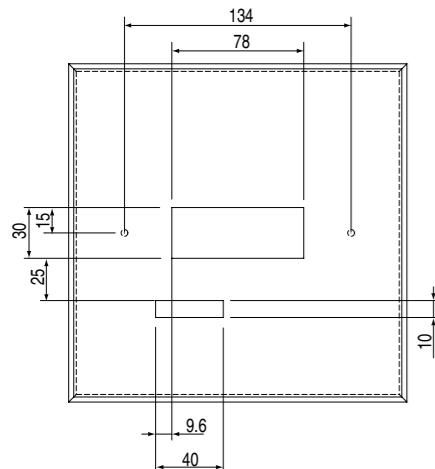
Fig. 8

pGD1开孔模板 / *pGD1 drilling template*

Fig. 9

PGD0000N00

在面板背面的支撑平板 / plane of support on rear of panel
显示窗平板 / plane of the display-window

Fig. 10

PGD1000N00

在面板背面的支撑平板 / plane of support on rear of panel
显示窗平板 / plane of the display-window
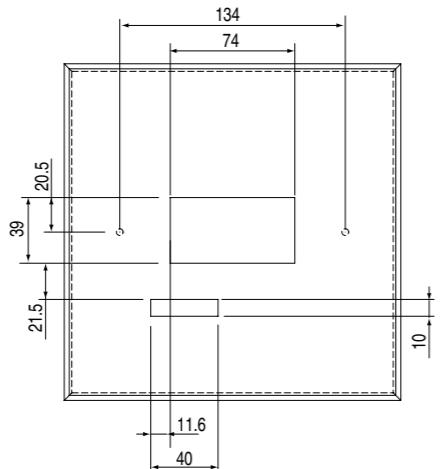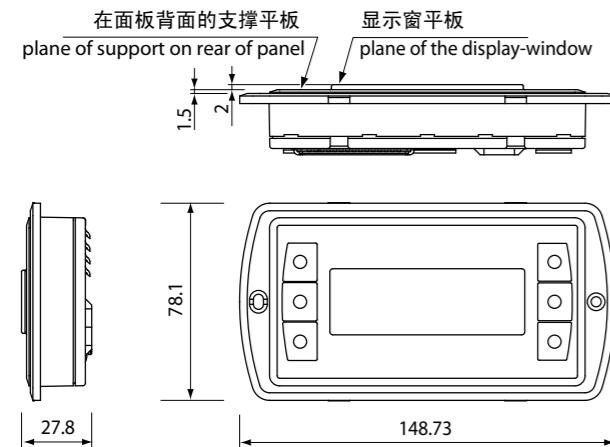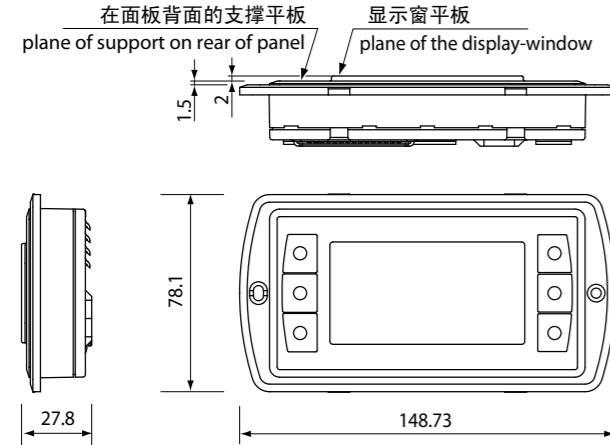
Fig. 11

显示网络状态和固件版本

同时按压配置键(↓↑⏎)至少10秒钟(仅在pLAN模式下)，显示屏显示如Fig.6所示的界面。

Fig. 6中显示的是pLAN网络状态的一个示例，显示连接了哪些设备和连接了多少设备，以及这些设备对应的地址。

图标编码：

□ : 在网络中有效的pCO控制器；

□ : 在网络中有效的手操器；

⊡ : 没有连接设备；

图6中的示例表示：
在网络中有效的pCO控制器，地址：1，2，25
在网络中有效的手操器；地址：3，4，15，26。

↓↑⏎ 键可以用于显示驻存在手操器上的固件版本如(Fig.7)。
要退出NetSTAT程序，按下⏎键。

LCD对比度调节

按下 ⌂+ **Prg** 不放和使用↓或↑按键调节对比度

技术参数

显示

类型：	FSTN图形
背景光	绿色或白色LED（由应用软件控制）
图形分辨率	pGD0: 120x32 像素; pGD1: 132x64像素
文本模式	pGD0: 4行×20列（字体是5x7像素）
	2行×10列（11x15像素）
	pGD1: 8行×22列（字体是5x7像素）
	4行×11列（11x15像素）
	或者混合模式
字高	pGD0: 4.5 mm（字体是5x7像素）；pGD1: 3.5 mm
	pGD0: 9 mm（11x15像素）；pGD1: 7.5 mm
显示区有效面积	pGD0: 71.95x20.75 mm; pGD1: 66x32
显示区域面积	pGD0: 76x25.2 mm; pGD1: 72x36

按键

LED数量	最多3个
按键数量	最多8个
按键连接端	12pin, 间距2.54mm

电源

电压	电源通过电话型电缆来自pCO主板；或来自外部电源18~30Vdc，由1个250mA保险丝保护 (*)
最大输入功率	1.2 W

最大距离

pLAN的最大长度	500米，AWG22型双绞屏蔽电缆
pCO 手操器长度	50米，电话线型电缆
	500米，AWG22型双绞屏蔽电缆和ITCONN6J000 (*)
	注意：为了达到最大距离，可使用总线结构布线，最大距离不超过5米

材质

透明前面板	透明聚碳酸酯
灰色后盖盒	聚碳酸酯+ABS
透明封盖玻璃/边框	透明聚碳酸酯
自熄灭等级	透明前面板和后盖盒为V0
	硅胶按键和其它部件为HB

其它

防护等级	IP00
	UL 1 类
运行条件	-20~60 ℃, 90% r.H. 无凝露
储存条件	-20~70 ℃, 90% r.H. 无凝露
软件等级和结构	A
防电击等级	归为1类设备或2类设备
绝缘材质的PTI	PCB: PTI 250; 绝缘材料 PTI 175
电压作用于绝缘部件的持续时间	长
耐火和耐热类别	D类
抗浪涌电压等级	II类
环境污染	2级

(*) 参考pCO手册 (代码+030220335)。

Displaying the status of the network and firmware version

Pressing the configuration buttons (↓↑⏎) together for at least 10 seconds (in pLAN mode only), displays the screen shown in Fig. 6.

The screen shown in Fig. 6 provides an example of the status of the pLAN, displaying which and how many devices are connected, and the corresponding addresses.
Key:

□ : *pCO controller active in network (or alternatively parametric in pLAN)*

□ : *terminal active in network*

⊡ : *no device connected*

The example in Fig. 6 represents:
pCO controllers active in network, addresses: 1, 2, 25
terminals active in network, addresses: 3, 4, 15, 26.

The ↓↑ buttons can be used to display the version of the firmware resident in the terminal (Fig. 7).

To exit the NetSTAT procedure, press ⏎

LCD contrast adjustment

*Press and hold ⌂+ **Prg** and use ↓ or ↑ to adjust the contrast.*

Technical specifications

Display

Type	*FSTN graphic*
Backlighting	*green or white LEDs (controlled by "application software")*
Graphic resolution	*120x32 pixels for pGD0; 132x64 pGD1*
Text mode	*pGD0: 4 rows x 20 columns (font sizes 5x7 pixels);*
	2 rows x 10 columns (font size 11x15 pixels)
	pGD1: 8 rows x 22 columns (font sizes 5x7 pixels);
	4 rows x 11 columns (font size 11x15 pixels)
	or mixed modes
Character height	*pGD0: 4.5 mm (font size 5x7 pixels); pGD1: 3.5 mm*
	pGD0: 9 mm (font size 11x15 pixels); pGD1: 7.5 mm
Size of active area	*pGD0: 71.95x20.75 mm; pGD1: 66x32*
Size of display area	*pGD0: 76x25.2 mm; pGD1: 72x36*

Keypad

Number of LEDs	*3 max.*
Number of buttons	*8 max.*
Keypad connector	*12 pin, pitch 2.54 mm*

Power supply

Voltage	*power supply from pCO through telephone cable or external source 18 to 30 Vdc protected with 250 mAT fuse (*)*
Maximum power input	*1.2 W*

Maximum distances

Maximum pLAN length	*500 m with AWG22 twisted pair cable*
pCO terminal distance	*50 m with telephone cable*
	500 m with AWG22 twisted pair cable and TCONN6J000 (*)
	Note: to reach the maximum length, use a bus layout, with branches not exceeding 5 m.

Materials

Transparent front panel	*transparent polycarbonate*
Charcoal grey container back piece	*polycarbonate +ABS*
Transparent cover glass/frame	*transparent polycarbonate*
Self-extinguishing classification	*V0 for transparent front panel and back piece*
	HB for silicon keypad and remaining parts

Others

Index of protection	*IP00*
	UL type 1
Operating conditions	*-20T60 °C, 90% r.H. non-condensing*
Storage conditions	*-20T70 °C, 90% r.H. non-condensing*
Software class and structure	*A*
Classification according to protection against electric shock	*to be integrated into class 1 or 2 devices*
PTI of insulating materials	*PCB: PTI 250; insulation material PTI 175*
Period of electric stress across insulating parts	*long*
Category of resistance to fire and heat	*D*
Immunity against voltage surges	*Category II*
Environmental pollution	*2*

(*) *see pCO² manual (code +030220335).*