

Novigo

## Call stations and extensions

PT2001-A1, PT2002-A1, PT2003-A1, PT2008-A1, PT2009-A1, PTO2001-A1, PTO2002-A1, PTO2003-A1, PTO2004-A1, PTO2005-A1, PTO2006-A1, PTO2008-A1, PTO2009-A1



### **EN 54-16-certified alarm and standard call stations for demanding digital and network-based public address and evacuation applications**

- Fully redundant configurable system with no single point of failure
- Ethernet interface ('PACE-Net') for networking with other system components
- Serial interface ('PACE-Bus') for connecting to internal and external components
- Real-time configuration, remote maintenance, and remote monitoring via the 'PACE-Design' system software
- Real-time audio transmission and integrated real-time recorder for delayed announcements
- Analog audio inputs and outputs, plus analog and digital control inputs and outputs
- Freely configurable buttons with insertable labels
- Can be extended with button and key switch modules
- Up to 115 buttons can be configured per call station
- Availability of fire brigade call station that conforms to ÖNORM F 3003
- Integrated speaker and monitored microphone
- Integrated micro SD card reader for alarm messages

## System

Novigo is a network-based voice alarm and announcement system that complies with the requirements of EN 54-16 and allows for a decentralized and redundant system structure. It is an important feature of the system that the critical risks of single point of failure vulnerabilities are eliminated.

A typical Novigo system is comprised of digital audio matrices, amplifiers, operating terminals, and call stations. Ethernet switches are used to link these components to a network via copper or fiber-optic cables.

Novigo systems are configured in real-time using the 'PACE-Design' system software.

An EN 54-4-certified power supply guarantees uninterrupted operation and high system availability.

Novigo is designed for the following applications:

- Alarm and evacuation
  - Automatic activation of acoustic alarm and evacuation announcements through a connected hazard detection system, such as a fire detection system
  - Manual activation of acoustic alarm and evacuation announcements by trained staff
  - Live announcements made by trained staff
  - Playback of announcements recorded in advance
- Announcements
  - Background music
  - Live announcements, with optional delay feature
  - Playback of announcements recorded in advance

Novigo covers both applications within one integrated system. It complies with the stringent requirements that apply to voice alarm systems in line with EN 54-16 and the extremely high standards for the audio quality and convenience of a standard announcement system.

## PT2001-A1 call station

Novigo offers a range of call stations for various applications.

The alarm and standard call station PT2001-A1 is designed for the following applications:

- Selecting speaker circuits
- Selecting an audio source
- Playback of announcements recorded in advance
- Transmitting live announcements
- Allows a redundant system structure
- Buttons and status indicators to control and monitor the Novigo system by users
- For other applications, see Features and Functions [→ 4].

Up to four additional button modules PTO2001-A1 can be fitted to extend the network-based desk call station PT2001-A1 to a maximum of 115 buttons.

The call station buttons are basically freely operable.

An optional key switch module PTO2002-A1/PTO2003-A1 enables all or individual call station buttons to be released or locked individually.

The longer PTO2004-A1 can be used here as an alternative to the standard gooseneck microphone.

## **PT2008-A1 and PT2009-A1 call stations**

The desk call station PT2008-A1 is designed for small standard applications.



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The desk call station PT2008-A1 may only be used for standard applications and not for alarm applications.

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The desk call station PT2009-A1 is designed for small to medium-sized standard applications.

Up to three additional button modules PTO2006-A1 can be fitted to extend the desk call station PT2009-A1 to a maximum of 32 buttons.

The call station buttons of PT2008-A1 and PT2009-A1 are freely operable.

### **PTO2008-A1 adapter**

The adapter PTO2008-A1 connects the PACE-Bus (RS485) call stations PT2003-A1 and PT2009-A1 to a control panel when required.

### **PTO2009-A1 adapter**

The adapter PTO2009-A1 provides a redundant 'PACE-Net' and 24 V connection from the panel to the call station PT2001-A1 and PT2002-A1.

### **PTO2005-A1 mounting kit**


The mounting kit PTO2005-A1 allows to install a desk call station (19 buttons) PT2001-A1 in a 19" cabinet.


### **PT2002-A1 Fire brigade call station (AT) and PT2003-A1 Fire brigade call station (485, AT)**


The PT2002-A1 is a network-based fire brigade call station and allows a redundant system structure. The fire brigade call station PT2003-A1 communicates via 'PACE-Bus' and 0 dB symmetrical analog audio transmission. They are designed for use by the fire brigade or trained security personnel. The alarm and system status can be monitored.


- The integrated hand-held microphone can be used to make live announcements.
- The preconfigured alarm announcement buttons can be used to play stored alarm and evacuation announcements.


Live announcements or stored alarm and evacuation announcements can be played throughout the entire building or in single areas (zones). The system interrupts all other audio outputs throughout the building or in the single areas as soon as an alarm announcement button is pressed or the hand-held microphone is taken from its mount.


<b>PT2001-A1</b>	<b>'Desk call station (19 buttons)'</b>
	<ul style="list-style-type: none"> <li>• Call station with electret condenser microphone and gooseneck</li> <li>• Full network participant in a Novigo system</li> <li>• 2-line text display</li> <li>• Buttons and status indicators to control and monitor the Novigo system by users. The buttons are basically freely operable</li> <li>• Insertable labels for custom button identification</li> <li>• Monitored microphone</li> <li>• Integrated audio amplifier (1 watt) and speaker</li> <li>• 1x additional audio input (line/mic) and 1x additional audio output</li> <li>• 4x digital inputs, 4x digital outputs, and 6x analog control inputs</li> <li>• Live speech / real-time audio transmission and integrated real-time recorder for delayed announcements</li> <li>• Integrated micro SD card reader/writer with max. 2 GB card capacity for alarm messages</li> <li>• Recording capacity: 256 files with a total duration of approx. 3 hours</li> <li>• Provision of alarm announcements and alarm tones</li> <li>• 2x Ethernet LAN interfaces for connection to 'PACE-Net'</li> <li>• Can be extended with up to 4 additional button modules PTO2001-A1</li> <li>• Can be extended with key switch module PTO2002-A1/PTO2003-A1 to enable buttons to be released or locked</li> <li>• Adapter module PTO2009-A1 for redundant connection to the control panel</li> </ul>


<b>PTO2001-A1</b>	<b>'Desk call station extension (24 buttons)'</b>
	<ul style="list-style-type: none"> <li>• Optional button extension for the desk call station PT2001-A1</li> <li>• 24 freely configurable buttons</li> <li>• Up to 4x button extensions per desk call station PT2001-A1, offering a total of 115 buttons</li> <li>• Insertable labels for custom button identification</li> </ul>


<b>PTO2002-A1</b>	<b>'Desk call station extension (Kaba)'</b>
	<ul style="list-style-type: none"> <li>• Call station extension for PT2001-A1 with key switch (Kaba)</li> <li>• Enables call station operation</li> </ul>


<b>PTO2003-A1</b>	<b>'Desk call station extension (Nordic)'</b>
	<ul style="list-style-type: none"> <li>• Call station extension for PT2001-A1 with key switch (Nordic)</li> <li>• Enables call station operation</li> </ul>


<b>PTO2004-A1</b>	<b>'ITEC SPM-DM microphone DCS'</b>
	<ul style="list-style-type: none"> <li>• Dynamic gooseneck microphone</li> <li>• For desk call station (19 buttons) PT2001-A1</li> <li>• Supercardioid characteristics</li> <li>• Excellent suppression of background noise</li> <li>• Highly dynamic performance and wide frequency band with low distortion</li> <li>• XLR connection</li> </ul>


<b>PTO2005-A1</b>	<b>'Mounting kit DCS (19"/5HU)'</b>
	<ul style="list-style-type: none"> <li>• 19" mounting kit for desk call station (19 buttons) PT2001-A1</li> <li>• For mounting desk call station (19 buttons) PT2001-A1 in a 19" cabinet</li> <li>• 5 HU</li> </ul>

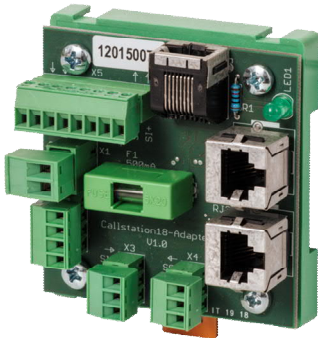
<b>PT2002-A1</b>	<b>'Fire brigade call station (AT)'</b>
	<ul style="list-style-type: none"> <li>• Alarm call station with standard-compliant housing and control panel</li> <li>• Full network participant in a Novigo system</li> <li>• 7 standardized and preconfigured buttons</li> <li>• 3 standardized and preconfigured displays</li> <li>• Removable hand-held microphone with talk button</li> <li>• Microphone and line monitoring</li> <li>• Integrated audio amplifier (1 watt) and speaker</li> <li>• Real-time audio transmission with constant latency: 4.6 ms analog-in/analog-out</li> <li>• Integrated industrial micro SD card reader/writer with max. 2 GB card capacity for alarm messages</li> <li>• Recording capacity: 256 files with a total duration of approx. 3 hours</li> <li>• Provision of alarm announcements and alarm tones</li> <li>• 2x Ethernet LAN interfaces for connection to 'PACE-Net'</li> <li>• One additional audio input (line) and one additional audio output</li> <li>• Adapter module PTO2009-A1 for redundant connection to the control panel</li> </ul>

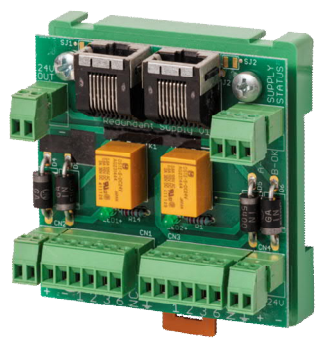
<b>PT2003-A1</b>	<b>'Fire brigade call station (485, AT)'</b>
	<ul style="list-style-type: none"> <li>• Alarm call station with standard-compliant housing and control panel</li> <li>• 7 standardized and preconfigured buttons</li> <li>• 3 standardized and preconfigured displays</li> <li>• Removable hand-held microphone with talk button</li> <li>• Microphone and line monitoring</li> <li>• Symmetrical audio transmission, analog</li> <li>• Audio output 0 dB (line volume)</li> <li>• RS485 data transmission ('PACE-Bus')</li> <li>• Connection to control panel via CAT5 cable (max. 500 m)</li> <li>• Connection to control panel with RJ45 or screw terminal connector</li> <li>• Adapter module PTO2008-A1 for connection to the control panel</li> <li>• Addressable via 4-way SIP switch in device</li> </ul>

<b>PT2008-A1</b>	<b>'Desk call station (analog, 3+1)'</b> *
	<ul style="list-style-type: none"> <li>• Call station with 3 configurable zone buttons plus talk button</li> <li>• Buttons are freely operable.</li> <li>• Electret condenser microphone with gooseneck</li> <li>• Symmetrical audio transmission, analog</li> <li>• Audio output 0 dB (line volume)</li> <li>• Control signals for zones 1-3 and 'Talk'</li> <li>• Connection to control panel via CAT5 cable or above (max. 150 m) and RJ45 connector</li> <li>• Supplied adapter module for connection to control panel</li> <li>• Insertable labels for custom button identification</li> <li>• Robust sheet steel housing</li> </ul> <p>* The desk call station PT2008-A1' may only be used for standard applications and not for alarm applications.</p>

<b>PT2009-A1</b>	<b>'Desk call station (RS485, 8+1)'</b>
	<ul style="list-style-type: none"> <li>• Call station with 8 configurable, illuminated zone buttons plus talk button</li> <li>• Buttons are freely operable</li> <li>• Electret condenser microphone with gooseneck</li> <li>• Monitored microphone</li> <li>• Symmetrical audio transmission, analog</li> <li>• RS485 data transmission ('PACE-Bus')</li> <li>• Audio output 0 dB (line volume)</li> <li>• Connection to control panel via CAT5 cable or above (max. 500 m) and RJ45 connector</li> <li>• Up to 5 call stations can be configured in a cascade 'daisy chain'</li> <li>• Adapter module PTO2008-A1 for connection to the control panel</li> <li>• Option to add up to three extension modules, each with 8 zone buttons</li> <li>• Addressable via 8-way SIP switch in device</li> <li>• Insertable labels for custom button identification</li> <li>• Robust sheet steel housing</li> </ul>




<b>PTO2006-A1</b>	<b>'Call station extension (RS485, 8)'</b>
	<ul style="list-style-type: none"> <li>• Optional button extension for desk call station PT2009-A1</li> <li>• Up to 3 button extensions possible for desk call station PT2009-A1, offering a total of 32 buttons</li> <li>• 8 configurable, illuminated zone buttons</li> <li>• Insertable labels for custom button identification</li> </ul>

<b>PTO2008-A1</b>	<b>'Call station interface (RS485)'</b>
	<ul style="list-style-type: none"> <li>• Adapter connecting 'PACE-Bus' (RS485) call stations to a control panel</li> <li>• Can be used for PT2003-A1 and PT2009-A1</li> </ul>

<b>PTO2009-A1</b>	<b>'Call station interface (redundant)'</b>
	<ul style="list-style-type: none"> <li>• Adapter connecting net-based 'PACE-Net' call stations to a control panel</li> <li>• Provides redundant 'PACE-Net' and 24 V connection</li> <li>• Monitors 'PACE-Net' and 24 V connection</li> <li>• Automatic switch to redundant pair in case of a connection fault</li> <li>• Can be used for PT2001-A1 and PT2002-A1</li> </ul>

## Type Overview

### Call stations

Type	PT2001-A1	PT2008-A1*	PT2009-A1
			
Designation	Desk call station (19 buttons)	Desk call station (analog, 3+1)	Desk call station (RS485, 8+1)
Order number	OFB:NOVIGO_2130	OFB:NOVIGO_2137	OFB:NOVIGO_2138
W x H x D mm	220 x 55 x 220 (without microphone)	105 x 65 x 185 (without microphone)	
Weight	2.2 kg	1.1 kg	
<b>Network</b>			
'PACE-Net' (Ethernet)	• (2x)	–	–
'PACE-Bus' (RS485)	–	–	•
Direct I/O control connection	–	•	–
Max. cable lengths (copper)	100 m	150 m	500 m
<b>Buttons and displays</b>			
Number of configurable buttons	19	3	8
Buttons configurable for:			
- Announcements	•	•	•
- Control signals	•	–	–
Text display	•	–	–
<b>Memory</b>			
Micro-SD card reader	•	–	–
Real-time recorder	•	–	–





Type	PT2001-A1	PT2008-A1*	PT2009-A1
<b>Inputs and outputs</b>			
Integrated speaker	•	–	–
Additional audio outputs	1	–	–
Additional audio inputs	1	–	–
Digital control inputs and outputs	•	–	–
Analog control inputs	•	–	–

• Included

– Not included



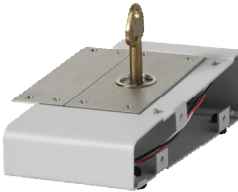

\* May only be used for standard applications and not for alarm applications

Type	PT2002-A1	PT2003-A1
		
Designation	Fire brigade call station (AT)	Fire brigade call station (485, AT)
Order number	OFB:NOVIGO_2136	OFB:NOVIGO_2371
W x H x D mm	200 x 300 x 157	200 x 300 x 157
Weight	4.5 kg	4.5 kg
<b>Network</b>		
'PACE-Net' (Ethernet)	• (2x)	–
'PACE-Bus' (RS485)	–	•
Max. cable lengths (copper)	100 m	500 m
<b>Buttons and displays</b>		
Number of configurable buttons	–	–
Buttons configurable for:		
- Announcements	• (pre-assigned)	• (pre-assigned)
- Control signals	• (pre-assigned)	• (pre-assigned)
Text display	–	–

Type	PT2002-A1	PT2003-A1
<b>Memory</b>		
Micro-SD card reader	●	–
Real-time recorder	–	–
<b>Inputs and outputs</b>		
Integrated speaker	●	–
Additional audio outputs	1	–
Additional audio inputs	1	–
Digital control inputs and outputs	–	–
Analog control inputs	–	–

- Included
- Not included

### Call station extensions

Type	PTO2001-A1	PTO2002-A1	PTO2003-A1	PTO2006-A1
				
Designation	Desk call station extension (24 buttons)	Desk call station extension (Kaba)	Desk call station extension (Nordic)	Call station extension (RS485, 8)
Order number	OFB:NOVIGO_2131	OFB:NOVIGO_2133	OFB:NOVIGO_2134	OFB:NOVIGO_2139
W x H x D mm	220 x 55 x 220	95 x 55 x 220		105 x 65 x 185
Weight	1.9 kg	0.98 kg		1.0 kg
<b>Properties</b>				
Number of buttons	24	–		8
Key switch	–	●		–
<b>Compatible with:</b>				
PT2001-A1	●	●	●	–
PT2009-A1	–	–	–	●

- Compatible
- Not compatible

## Accessories

You will find more information on suitable accessories in the data sheet with document ID 'A6V11467211'.

## Order numbers

Type	Designation	Order number
<b>Call stations</b>		
PT2001-A1	Desk call stat. (19 buttons)	OFB:NOVIGO_2130
PT2008-A1	Desk call stat. (analog, 3+1)	OFB:NOVIGO_2137
PT2009-A1	Desk call stat. (RS485, 8+1)	OFB:NOVIGO_2138
PT2002-A1	Fire brigade call stat. (AT)	OFB:NOVIGO_2136
PT2003-A1	Fire brig call stat (485, AT)	OFB:NOVIGO_2371
<b>Call station extensions</b>		
PTO2001-A1	Desk call stat. ext.(24 btn)	OFB:NOVIGO_2131
PTO2002-A1	Desk call stat. ext. (Kaba)	OFB:NOVIGO_2133
PTO2003-A1	Desk call stat. ext.(Nordic)	OFB:NOVIGO_2134
PTO2006-A1	Call station ext. (RS485, 8)	OFB:NOVIGO_2139
PTO2008-A1	Call stat. interface (RS485)	OFB:NOVIGO_2140
PTO2009-A1	Call stat interf (redundant)	OFB:NOVIGO_2370
<b>Microphone</b>		
PTO2004-A1	ITEC SPM-DM microphone DCS	OFB:NOVIGO_2135
<b>Mounting kit</b>		
PTO2005-A1	Mounting kit DCS (19"/5HU)	OFB:NOVIGO_2132

## Product documentation

You will find more information on the Novigo system and its components in the following documents:


Title	Document ID
<b>IT security policies</b>	
Novigo – IT security policies	A6V11773711
<b>System documentation</b>	
Novigo – planning	A6V11467812
'PACE-Design' – configuration	A6V11474760
Novigo – mounting / installation	A6V11467817
Novigo – operation	A6V11467803
<b>Data sheets</b>	
System data sheet	A6V11467196
19" cabinets	A6V11467209
Digital audio matrix	A6V11467202
Power amplifier	A6V11467204
Operating terminals	A6V11467198
Call stations and extensions	A6V11467200
Power supply and batteries	A6V11467207
Accessories and options	A6V11467211
<b>Loop isolator (100V)</b>	
Loop isolator (100V) - technical manual	A6V11571319
<b>Environmental declaration</b>	
Novigo – environmental declaration	A6V11948779

### Download center

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

<http://siemens.com/bt/download>

## Safety

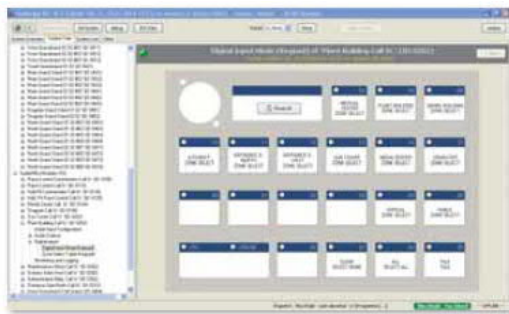
	<p><b>⚠ CAUTION</b></p>
	<p><b>National safety regulations</b></p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> <li>Observe national provisions and comply with the appropriate safety regulations.</li> </ul>

## Configuration

'PACE-Design' is a Windows-based software used to configure and monitor the Novigo system.

Large-scale systems become easier to operate because of its comprehensive monitoring and logging features. DSP and controller software can be updated from any point within the network.

### Example PT2001-A1



### System Tree Keypad Config Table

Different functions can be assigned to each switch, for example:

- Zone selection
- Talk switch
- All zones
- Gong
- Deleting
- Alarm messages
- Volume +/-, up/down, etc.

## Disposal



The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

## Environmental compatibility

The Environmental Product Declaration (EPD) for 'Novigo VANSYS' contains data and information on the product's environmentally compatible design features and its ratings; for example, its RoHS conformity, composition, packaging, environmental benefits, and disposal information.

You can obtain the document A6V11948779 via the following Internet address:

<https://siemens.com/bt/download>

Enter the document ID in the search field.

## Technical data

### Call stations

	PT2001-A1	PT2002-A1	PT2003-A1
<b>Supply</b>			
Power supply	DC 24 V (18 V...32 V)		
Current consumption	260 mA		150 mA
<b>Number of inputs / outputs</b>			
Audio inputs 0 dB (external source)	1		–
Audio outputs 0 dB (to amplifier / external)	1		–
Analog control inputs 0...10 V	6 (plug-in terminal blocks)	–	–
Digital inputs	4 (Schmitt trigger inputs on plug-in terminal blocks)	–	–
Digital outputs	4 (Open collector outputs on plug-in terminal blocks)	–	–
<b>Digital inputs</b>			
Input voltage	Low <1.6 V / High >8 V	–	–
Max. permissible voltage	18 V	–	–
Input current at 10 V	~0.2 mA	–	–
<b>Digital outputs</b>			
Max. voltage	36 V	–	–
Max. current	200 mA per output / total 500 mA (total of all switched outputs)	–	–
<b>Analog control inputs</b>			
Voltage range	DC 0...10 V	–	–
Resolution	8 bit	–	–
Input current at 10 V	~0.2 mA	–	–
<b>Interfaces</b>			
Serial interfaces	RS232 (9600, 19200, 57600, 115200 baud)		PACE-Bus (RS485)
Ethernet connection 100Base-TX	2x RJ45		–
Adapter module	PTO2009-A1 for redundant 'PACE-Net' and 24 V		PTO2008-A1
Max. cable lengths (copper)	100 m		500 m

	PT2001-A1	PT2002-A1	PT2003-A1
<b>Audio properties</b>			
Frequency band	40 Hz...20 kHz / -1 dB		
Distortion factor	<0.0005 %		
Total dynamic range	103 dB		
Inputs:	Symmetrical; max. amplification freely selectable between - 20 dB...+60 dB		–
• Phantom voltage	+12 V; switchable	–	–
• Input impedance	6.6 kOhm		
Outputs:	Out1: Speaker, 1 W Out2: Symmetrical		–
• Max. output level (only for Out2)	+15 dB		–
• Output impedance (only for Out2)	300 Ohm		–
<b>Ambient conditions</b>			
Operating temperature	-5...+40 °C		
Storage temperature	-20...+70 °C		
Operation in humid environments (without moisture condensation)	10...90 % rel.		
Storage in humid environments (without moisture condensation)	5...90 % rel.		
<b>Dimensions and weights</b>			
W x H x D mm	220 x 55 x 220 (Housing without microphone)	200 x 300 x 157	
Weight	2.2 kg	4.5 kg	
<b>Protection category and color</b>			
Protection category (IEC 60529)	IP44		
Color	Light gray	Red	
<b>Standards</b>	EN 54-16	EN 54-16, ÖNORM F 3033	
<b>Approval</b>	–	ÖNORM F 3012	

	PT2008-A1	PT2009-A1
<b>Supply</b>		
Power supply	DC 10...12 V (via RJ45)	DC 24 V (via RJ45)
Current consumption	Max. 100 mA	Max. 50 mA
<b>Number of inputs / outputs</b>		
Audio outputs 0 dB (to amplifier / external)	1	
<b>Interfaces</b>		
Serial interfaces	–	RS485
Adapter module	Supplied with PT2008-A1	PTO2008-A1
Max. cable lengths (copper)	150 m	500 m
<b>Ambient conditions</b>		
Operating temperature	-5...+40 °C	
Storage temperature	-20...+70 °C	
Operation in humid environments (without moisture condensation)	10...90 % rel.	
Storage in humid environments (without moisture condensation)	5...90 % rel.	
<b>Dimensions and weights</b>		
W x H x D mm		
• Housing without microphone	105 x 65 x 185	
• Housing with microphone	105 x 330 x 185	
• Adapter for connection to control panel	45 x 42 x 68 mm	70 x 36 x 70 mm
Weight	1.1 kg	
<b>Protection category and color</b>		
Protection category IEC 60529	IP20	
Color	Light gray	
<b>Standards</b>	EN 54-16	



## Call station extensions

	PTO2001-A1	PTO2002-A1	PTO2003-A1	PTO2006-A1
<b>Power supply</b>	DC 24 V (18 V...32 V)			
<b>Number of buttons and key switches</b>				
Buttons	24	–	–	8
Key switch (Kaba)	–	1	–	–
Key switch (nordic)	–	–	1	–
<b>Ambient conditions</b>				
Operating temperature	-5...+40 °C			
Storage temperature	-20...+70 °C			
Operation in humid environments (without moisture condensation)	10...90 % rel.			
Storage in humid environments (without moisture condensation)	5...90 % rel.			
<b>Dimensions and weights</b>				
W x H x D mm Housing	220 x 55 x 220	95 x 55 x 220		105 x 65 x 185
Weight	1.9 kg	0.98 kg		1.0 kg
<b>Protection category and color</b>				
Protection category (IEC 60529)	IP30			IP20
Color	Light gray			
<b>Standards</b>	EN 54-16			

## Mounting kit

	PTO2005-A1
<b>Type</b>	Mounting kit DCS (19"/5HU)
<b>Height units</b>	5HU
<b>Material</b>	Metal
<b>Dimensions and weights</b>	
W x H x D mm	483.6 x 52.3 x 216.9
Weight	400 g
<b>Color</b>	Light gray
<b>Standards</b>	EN 54-16

## Microphone

	<b>PTO2004-A1</b>
Type	Dynamic microphone
Connection	XLR / M
<b>Audio properties</b>	
Directional characteristics	Supercardioid
Frequency band -6 dB	100...10000 Hz
Sensitivity	-56 dB V/PA (1.58 m V/PA) ±3dB; 1Pa = 94 dB SPL
Nominal impedance	500 Ohm
<b>Ambient conditions</b>	
Operating temperature	-10...+50 °C
Storage temperature	-20...+70 °C
Operation in humid environments (without moisture condensation)	10...90 % rel.
Storage in humid environments (without moisture condensation)	5...90 % rel.
<b>Material</b>	Metal
<b>Dimensions and weights</b>	
W x H x D mm	41 x 360 x 41
Weight	170 g
<b>Protection category and color</b>	
Protection category (IEC 60529)	IP30
Color	Black
<b>Standards</b>	EN 54-16