

VSPT250HD Series

Heavy Duty Stainless Steel Pan & Tilt unit



Installation manual

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DESCRIPTION

VSPT250HD Series Heavy Duty Pan & Tilt unit is the best choice to move heavy loads, especially in Offshore and Marine environment where corrosive agents may rapidly damage standard aluminum-steel units.

MODELS

VSPT250HD Heavy Duty Variable Speed Pan & Tilt unit

Contents of package

The **VSPT250HD** package contains:

1x Pan & Tilt unit	2x Cable glands	1x Hex key for M6 screw	1x Installation Manual
1x Side bracket	4x M8x20 screws	1x Hex key for M8 screw	

Suggested tools

A flat screwdriver is suggested to install the **VSPT250HD** Pan & Tilt unit.


CERTIFICATIONS


Weatherproof standard: IP67

EN 61000-6-3:2007 and 50130-4:1995 + A1:1998 + A2:2003 (EMC – Electromagnetic Compatibility)

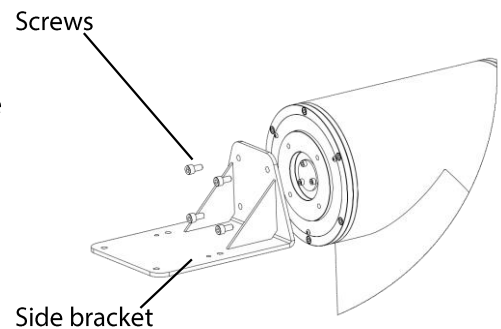
60950-1:2006 + A11:2009 (LVD – Safety)

INSTALLING THE UNIT

	Prior to installation and operation, read carefully all instructions in this manual and heed all warnings.
	Unpack this equipment and handle it carefully. If the package appears to be damaged, notify the shipper immediately.
	Use the original packaging to transport the unit. Disconnect power supply before moving it. In case of returning the equipment, the original packaging must be used.
	Make sure that the installation surface can support at least four times the weight of the unit in normal operating conditions. In case of excessive external stress (e.g. vibration, strong winds or impact), the equipment may need additional means of protection.
	Proper stainless steel hardware should be carefully chosen to fasten the unit to the surfaces.
	Use caution when lifting and assembling the unit. It is recommended that non-slip protective gloves be worn during installation. The unit could bear sharp edges.
	Trying to manually force the motors will result in damaging the device and will void the warranty.
	WARNING: Hazardous moving parts: the device is remotely controlled and may change position at any time. When installing, choose a place where moving parts could not hit anyone or any object, creating hazardous situations.
	To maintain the IP rating of the unit, adequate cable glands must be used. The unit must be tightly closed when operating and the cable glands must be tighten up till an 8 Nm torque ratio. Check the proper position of the seal in its groove on the flanges.
	For security reasons, do not install the unit in the proximity of water containers and never push objects or pour liquids into the unit. The unit can be safely used in damp environments or outdoors, as long as the connectors are properly sealed.
	Complete the installation performing the electrical and video connections according to the instructions in the camera installation manual.
	Video and data cables should not share the same conduit with supply voltage cables. Whenever EMC is an issue, adequately shielded cables must be used.
	Open only the covers pointed out in this installation manual. Other covers should be open only by the manufacturer. Tightening/loosing the screws using automatic tools such as drill drivers may result in damaged threads.
	This equipment has been designed to fit in harsh environments requiring little or no maintenance. Suggested inspection interval is 6 months, but extremely harsh environments may require more frequent inspection and maintenance checks. On each inspection check the O-ring seals and the eventual window wiper blade integrity. Replace them if necessary. Check cables, electrical connections and mounting hardware for integrity and tightness. Replace or tighten any damaged/loose part.
	After the installation of the unit, the desiccant bag must be placed inside the Pan & Tilt unit, assuring it won't be damaged by rotating and moving parts.
Operating temperature: -20° +60° C (-4° +140° F).	

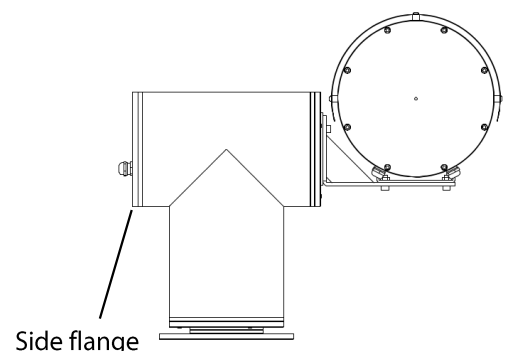
	<p>Before performing any operation, turn off the power. The installation of the unit can be performed only by qualified personnel in accordance with the regulations in force. Do not connect the unit to a supply circuit unless the installation is completed.</p>
	<p>Check carefully the supply voltage marked on the label. Incorrect Power Supply Voltage may damage the unit. Do not overload the terminal connection, as it may cause a fire or electrical shock hazard.</p>
	<p>An all-pole mains switch with an opening distance between the contacts at least 3 mm in each pole must be incorporated in the electrical installation. The switch must be equipped with protection against the fault current towards the ground (differential) and the overcurrent (magnetothermal, maximum 5A). It must be very quickly recognizable and readily accessible. A suitable blow fuse must also be installed for protection.</p>
	<p>For connection to the mains, use a multipolar cable having minimum 3x1,5 mm² (15 AWG). The main cable must be at least protected by an ordinary double insulation PVC sheath.</p>
	<p>Fasten all the cables inside the housing with cables ties or other fixing means to avoid the electrical contact with surrounding parts in case that terminal blocks screw off.</p>
	<p>Electrical connections (such as plugs and cords) must be protected from potential hazardous environmental factors (e.g. foot traffic, hitting objects).</p>
	<p>Ensure that the unit case is properly earthed, connecting all the earth ground studs. Earth cable should be about 10mm longer than the other cables on the connector, in such way that it won't be accidentally disconnected if the cable is stretched or pulled.</p>
	<p>When leaving the unit unused for long periods, disconnect supply cables.</p>
<p>Supply voltage should never be directly provided to internal motors. Always use the control circuit.</p>	
<p>The internal transformer of the unit should never be used to power external devices.</p>	

Fix the enclosed side bracket to the unit using four M8x20 screws. The side bracket has six holes that can be used to fix a 204 or a 254 Series housing.



The P&T unit is in its default position when viewed from back:
 - the camera housing is placed on the right, with the rear flange toward the user;
 - the cable glands of the P&T unit are placed on the left.

To perform electrical connections, unscrew the six screws on the side flange and remove it.



GENERAL INFORMATION

The device can be controlled from a PC with RS 485 converter using a suitable program (for example: Visual Studio).

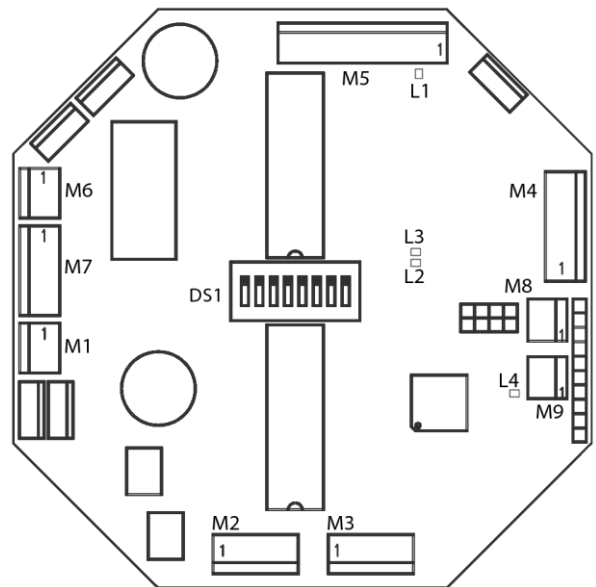
To prevent damages and to assure a precise preset position, the receiver slows the motion as it gets near to the preset position.

The receiver is equipped with four LEDs. The L1 LED (green) is on when the receiver is correctly powered. The L2 LED (green) pulses when the receiver receives data. The L3 LED (yellow) pulses when the receiver sends data. The L4 LED (red) pulses when the receiver is overheated.

ELECTRICAL CONNECTIONS

Conn.	Pin	
M1	1	24 VAC Line
	2	24 VAC Neutral
M2	1	Pan RIGHT
	2	Pan LEFT
	3	0V encoder
	4	+5V encoder
	5	A phase
	6	B phase
M3	1	Tilt UP
	2	Tilt DOWN
	3	0V encoder
	4	+5V encoder
	5	A phase
	6	B phase
M4	1	A1+ TX+ (main)
	2	B1- TX- (main)
	3	GND
	4	A2+ TX+ (aux)
	5	B2- TX- (aux)

Conn.	Pin		
M5	1	0V Pot.	
	2	+5V Pot.	
	3	Pot. Ref. ZOOM	
	4	Pot. Ref. FOCUS	
	5	ZOOM V+	12 VDC
	6	ZOOM V-	
	7	FOCUS V+	12 VDC
	8	FOCUS V-	
M6	1	DC 0V	
	2	DC +12V	
M7	1	Aux1 – 24VAC Line	
	2	Aux1 – 24VAC Neutral	
	3	Aux2 – 24VAC Line	
	4	Aux2 – 24VAC Neutral	
M8	1	Pan sensor 0V	
	2	Pan sensor +12V	
	3	Pan sensor input	
M9	1	Tilt sensor 0V	
	2	Tilt sensor +12V	
	3	Tilt sensor input	



Connector	Name	Notes
M1	AC Power Input	/
M2	Pan motors	The receiver is intended to be used with DC motors
M3	Tilt motors	The receiver is intended to be used with DC motors
M4	Data (RS485)	Pelco D Protocol main bus (half duplex, 2400 baud) + auxiliary bus
M5	Lens motors	The receiver is intended to be used with 12 VDC motorized lenses; before connecting the lens, remove the connections between pin 1-3 and between pin 1-4. A 2,4V Zener diode (supplied) must be connected with cathode on pin 2 and anode on the motor lens supply voltage.
M6	DC Power output	For auxiliary equipment; do not exceed 0,5A
M7	Auxiliary AC output	Aux1 is designed to be used with camera housing wipers; Aux2 is designed to be used with washer systems
M8	Pan zero sensor	/
M9	Tilt zero sensor	/

Default limits

The unit is set with default values to achieve the following angles: +/- 90° Pan (left/right); +/- 90° Tilt (up/down).
Factory limits are about +/- 170° Pan (left/right) and +/- 100° Tilt (up/down).

Changing the default limits

- Preset **Recall 99**: Toggles lens management (default: OFF)
- Preset **Set 70**: Clear Left Limit, actually set the default left limit.
- Preset **Set 71**: Clear Right Limit, actually set the default right limit.
- Preset **Set 72**: Clear Up Limit, actually set the default up limit.
- Preset **Set 73**: Clear Down Limit, actually set the default down limit.
- Preset **Set 80**: Set Left Limit.
- Preset **Set 81**: Set Right Limit.
- Preset **Set 82**: Set Up Limit.
- Preset **Set 83**: Set Down Limit.

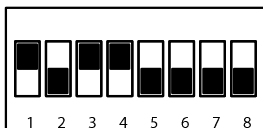
Note: setting the Pan limits (set 80 and 81) will delete all the pan saved presets.

Preset

Preset from 1 to 89 and from 100 to 150 can be used to set/call specific positions. The other presets are factory reserved and cannot be used to set/call specific positions.

On the first command received, the unit will perform a zero-axis (in which the unit won't accept any further command).
Setting preset 84 changes this behaviour and make the unit perform the zero-axis on startup. Setting preset 74 switches back the behaviour of the unit to perform the zero-axis on the first command received after the startup.

SETTING THE UNIT ADDRESS



The 8 way dip-switch on the telemetry receiver (*DIS1*) can be used to set up the unit address (binary). When a switch is on the ON position, the relative digit has value 1, otherwise the value is 0. Switch 1 is referred to the least significant digit (2^0), while switch 8 is referred to the most significant digit (2^7).
For example, the address 13 (00001101 in binary) can be set up turning ON the switch 1, 3 and 4 (see figure).

CLOSING THE UNIT

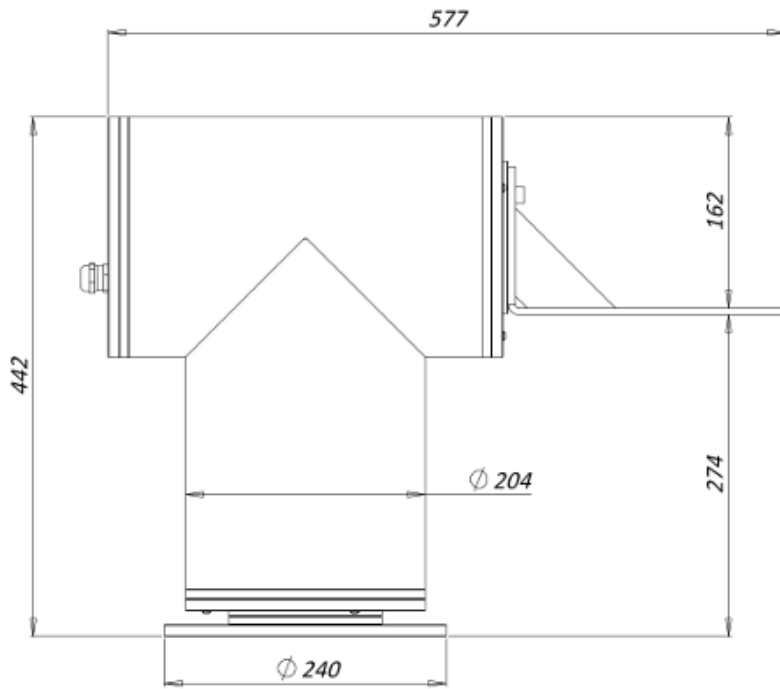
Tighten the cable glands up till an 8 Nm torque ratio.

Whenever all the connections are performed, close the unit.

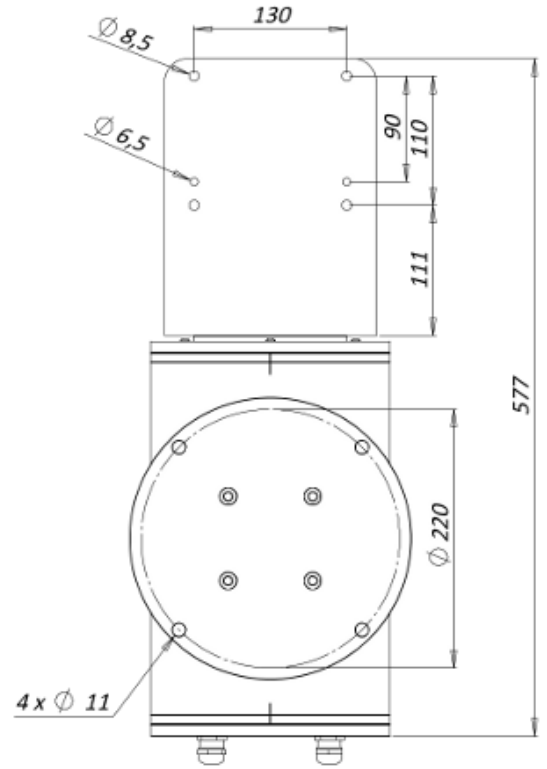
Carefully check the proper position of the O-ring in its groove on the side flange.

DIMENSIONS

FRONTAL VIEW



BOTTOM VIEW



Dimensions in millimetres – Tolerances according QMS – Design and product specifications subject to change without notice

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Preserve this manual as a reference for future needs.

Here you can find the always up-to-date pdf version of this document:

	<p>Used electrical, electronic and stainless steel products should not be mixed with general waste. For proper treatment, recovery and recycling of old products, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/95/EC and 2002/96/EC. By disposing of these products correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. For more information about collection and recycling of old products, please contact your local municipality or your waste disposal service. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.</p>
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The manufacturer declines all liability for any consequence resulting from improper installation practices, tampering or improper uses of the product.

The descriptions and illustrations contained in this manual are not binding. The manufacturer reserves the right to make any alterations deemed appropriate for the technical, manufacturing and commercial improvement of the product, while leaving the essential product features unchanged, at any time and without undertaking to update the present publication.