SurveyorVFT Pressurized PTZ Dome Series

WDR **Day/Night** **PTZ**

- Sealed and pressurized housing offers maximum environmental protection
- Impact-resistant polycarbonate dome
- Provides indoor or outdoor environmental control for SurveyorVFT Camera Dome
- Pendant or wall mount available
- Versions available with day/night 23X or 36X
- High-resolution 540 TVL
- Wide Dynamic Range provides best contrast for high quality images
- Provides Digital Noise Reduction and enhanced sensitivity
- Enhanced autofocus
- EIS (image stabilizer) on 36X model
- Digital Slow Shutter feature for enhanced low-light applications
- Prefabricated multi-conductor cable assembly available
- Compatible with all Vicon matrix systems
- Low pressure sensor alarm output
- On-screen temperature, humidity and pressure value indications
- Daisy chain connectivity with full duplex capability
- Coaxial and TCP/IP (ViconNet) video transmission
- NEMA TS2 compliant

System Overview

The SurveyorVFT Pressurized Camera Dome housing has all the features and functions of the SurveyorVFT Camera Dome System. The interior is pressurized with dry nitrogen gas and regulated with a relief valve. A "Low Pressure Warning" displays if pressure inside the dome dips below ½ psig. Sensor titles display for temperature, relative humidity and pressure, which can be disabled. In addition, the interior is environmentally controlled using a thermostatically-controlled heater/fan assembly. This environment is characterized as ideal (IP67 rated) and provides the maximum protection against the elements that would normally cause rapid deterioration of electronic and video components. The SVFT-PRS can be programmed and operated using any Pilot or NOVA™ control system and enhanced Vicoax®II protocol. It is available for outdoor use and can be configured with a variety of camera types. Refer to SVFT-PRS Models Table.

The basic SVFT-PRS provides video transmission over coaxial cable. An option is available that provides TCP/IP (ViconNet) video transmission.

The ViconNet® version provides support for network connection to Kollector® Digital Video Recorders and ViconNet Workstations via ViconNet software. A pre-installed network interface board allows direct plug-in to a system network switch. Video from the camera is available to all network recorders and workstations for live view and recording.

The SVFT-PRS camera dome can be used in conjunction with competitive PTZ drivers through DIP-switch selection.

Construction and Installation

The SVFT-PRS is designed for easy snap-in installation. The drive simply snaps into the housing. When removed, the housing retains all programmed functions in its on-board non-volatile memory. The customer interface board snaps down for easy access. The customer interface board is pre-wired for convenience.

The exterior is UV resistant polyethylene plastic. The lower dome is injection molded distortion-free clear polycarbonate plastic. The units are provided with a blower and thermostatically-controlled heater.

There is a wall mount and pipe adapter available for mounting the pressurized housing. Refer to Accessories Table.

Electrical

Input Voltage:	18-30 VAC. (Will operate within spec on voltages up to 32 VAC. For voltages between 30-32 VAC, use a Class 3 indoor/dry or outdoor/wet power supply.)
Maximum Operating Distances:	Refer to Table.
Current:	Coax: 1.8 A; ViconNet: 2.3 A.
Power Consumption:	Coax: 44 W maximum; ViconNet: 54 W.
Fuse:	F1: 5x20 mm, 1.6 A 250 VAC slo-blo. F2: 5x20 mm, 2.5 A 250 VAC slo-blo.
Connector Types:	Video Out: See version type. Power: 2-position removable screw terminal block. Control Input/Output: See version type. Relay Output: See version type. Alarm Input: 8-position removable screw terminal block.
Housing Connector Type:	23-pin, circular, pressure rated. Mating connector included for access to all SurveyorVFT signals including heater/blower, power, communications and video
Video Output Impedance:	75 ohms.
Certifications:	CE EN60529; FCC Class A. International Protection (IP) Rating: IP67. NEMA 4X; NEMA TS2-2003 V02.06; IK10++ (50 joules) tested in accordance with EN 6008-2-75 Eh Pendulum Hammer test.

Operational

Drive Type:	Electrical motorized pan and tilt with electronic control.
Pan View:	360°.
Tilt View:	-2.5 to 92.5°.
Pan Speed:	Variable, 0.1 to 360°/sec.
Autopan Speed:	Variable, 0.1 to 42°/sec; enable/disable.
Tilt Speed:	Variable, 0.1 to 150°/sec.
Zoom/Focus Speed:	Less than 1.8 sec, tele to wide.
Preset Capability:	79 individually programmable.
Preset Solving Speed:	1 second nominal.
Preset Accuracy (Pan and Tilt):	0.1° maximum.
Tour Capabilities:	8 tours. 32 programmable events per tour. Events may be preset positions with speed control, alarm acknowledge, dwell time control, relay control, call autotours, tour repeat or another tour, save/recall camera status.
Autotour Capabilities:	2 autotours available with 256 pan, tilt and zoom functions per autotour. Programming is done in real time with joystick and push buttons.

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Specifications subject to change without notice.

Sectoring:	16 maximum, programmable for size and titling. Sectors have the capability to be blanked out.
Alarm Capabilities:	4 alarm inputs, individually programmable. Functional state enable/disable. Report state (report on/off). Active state (high/low). Mode (manual, momentary or automatic) with programmable dwell time control. Set and reset action (preset solve, relay on/off, tour, autotour). Alarm titling.
Relay Alarm Output:	1 relay, momentary or latching. Power-on state definition (on/off). Relay function status titling. Resistive Load: 0.3A @125 VAC; 1.5A @ 30 VDC. Inductive Load: 0.15A @125 VAC; 0.75A @ 30 VDC.
Control Display:	On-screen, menu-driven system allowing full configuration of the dome.
Privacy Masks:	16 programmable, zoom-scalable.
Scheduling:	Real-time clock allows scheduling of up to 64 events, including presets, relays, alarms, tours or autotours.
Multi-Language Menu:	English, Spanish, French, Italian and German.
Camera Features:	6 motion detection zones with 3 sensitivity levels; image freeze during preset solve; flip (invert) image.
Screen Titling Capabilities:	Programmable On/Off for camera, preset, sector, relay and alarms; date/time enable/disable. Compass/azimuth, 8 compass headings (N, NE, E, SE, S, SW, W, NW). 20 characters maximum; selectable position. Three text sizes for top 2 lines. 20 characters. Fade capability.
Auto Baud:	Auto baud detection in RS-422/ RS-485 mode; 4800, 9600, 19,200 bps baud rates supported.
Absolute Position Control:	Available in RS-422/RS-485 mode. Pan/tilt: 0.125°; zoom: 0.125X.
Competitive Protocols:	DIP switch selectable.
PTZ Functions:	Auto Home: Can program to go to a set home location after a set time duration of no activity or to its home upon power-up. Scalable PTZ: Can enable to adjust the pan and tilt speed relative to the amount of magnification. PTZ Route: Takes shortest distance to preset PTZ selection. Overload: Software control to prevent movement beyond limits. Lens Speed: Selectable Low, medium, high from control station. Iris Protection: Autoiris and auto shutter adjustment for amount of light.

Camera/Lens

Color and day/night cameras (NTSC/PAL) in a variety of zoom and feature capabilities. Refer to for specifications Table.

Coaxial Version

Control Protocol Hardware:	Vicon control system or keypad. NTCIP: 1103 compatible hardware.
Control Protocol Software:	Vicon's Surveyor Direct Control program run on a standard PC type computer with an RS-422/485 half duplex protocol interface.
Control Protocol Format (set via DIP switch): (Note on Competitive Protocols: All companies make changes and improvements in their products. Because this product can interface with equipment not manufactured by Vicon, there is a possibility that the interface protocols may have changed since Vicon tested this product with the interfacing equipment. Vicon recommends purchasing a single unit for bench testing prior to purchasing and installing this product in quantity.)	Vicon: RS-422 or RS-485 protocol. Communication is simplex or half duplex operation at 4800, 9600 or 19,200 baud or Vicon's enhanced VicoaxII protocol (superimposed data on composite video signal) automatically detected upon power up. RS-485 protocol utilizes full tri-state outputs for daisy chain capability Pelco: Pelco D Protocol (3/2/99); RS-485 N.8.1, simplex 2400 bps, duplex 4800 bps. Sensormatic/AD: RS-422/RS-485 communication protocols user's guide Rev. A (csd 05/00); RS-422/RS-485 duplex N.8.1 4800 bps. May require RS-422 converter, RCSN422. Ultrak: KD6, KD6-Z control protocols; RS-485 simplex E.8.1, 9600 bps. Philips: Receiver/Driver/Auto Dome control code protocol; RS-232 simplex N.8.1, 2400 or 9600 bps. Kalatel: Non-repeating transmit commands; RS-422 simplex N.8.1, 9600 bps. Cohu: MPC System RS-422 interface; RS-422 duplex N.8.1, 9600 bps. Panasonic: Panasonic conventional and new camera protocol. NTCIP: 1103 protocol compatible.
Connector Types:	Video Out: BNC-F. Control Input/Output: 8-position removable screw terminal block. Relay Output: 8-position removable screw terminal block.

ViconNet Version (LAN/TCP/IP)

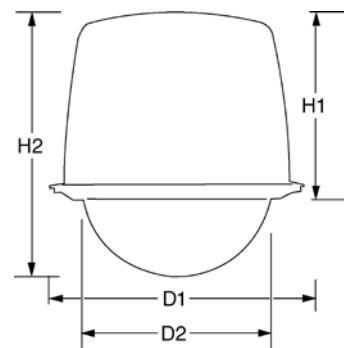|	
Communication Protocol Hardware:	Vicon's Kollector Digital Recorders and ViconNet Workstations.
LAN Interface:	100 Mbps, TCP/IP Unicast.
Connector Types:	Video Out: RJ-45 jack. Network: Ethernet 100Base-T RJ-45 jack. 10/100 Mbps required for network connection. Relay Output: 3-position removable screw terminal block. Audio: 2 1/8-in. phono jacks

Video Transmission

Maximum Distances:	Coax: 1100 ft (350 m), cable dependant. Vicoax: 1500 ft up to 140° F (60° C); 1000 ft up to 165° F(74° C). ViconNet: 100 meters without repeater.

Mechanical

Application:	Indoor or outdoor.
Mounting:	Wall mounting with SVFT-PR-WMA Wall Mount or pendant mounting with SVFT-PR-P Pipe Mount.
Seal Type:	1 "O" ring, fabricated from neoprene, 0.139 in. (3.5 mm) cord diameter.
Mount Size/Thread:	4 threaded hole pattern (3.75 in./ 95 mm square) on top used for mount attachment. Each threaded hole is 1/4-20 x 0.41 in. (10 mm) deep. Gasket provided to seal top interface.
Dimensions:	See Figure. Housing Diameter (D1): 9.5 in. (241 mm). Dome Diameter (D2): 6.0 in. (152 mm). Housing Height (H1): 7.3 in. (185 mm). Total Height (H2): 10.2 in. (259 mm)
Weight:	7.5 lb (3.4 kg). 12.0 lb (5.4 kg) with SurveyorVFT mechanism included.
Construction:	Plastic, cast aluminum; trim ring, cast zinc/aluminum.
Color:	White housing and sunshield; black trim ring.

Housing Operation

Pressurization:	Schraeder type valve used to fill and drain housing with dry nitrogen gas. Relief valve automatically relieves pressure at 5- 7 psi (0.34-0.48 atm). Leakage <2 psi per year.
Operating Pressure:	1 - 5 psi (0.07 - 0.34 atm or bars), max.
Pressurization Volume:	0.28 ft^3 (0.008 m^3) volume.
Low Pressure Indication:	By default, if pressure dips below 1/2 psig a "Low Pressure Warning." On Screen Display message appears. This alarm warning may also be sent to the CPU by enabling the alarm in the dome's Alarm Handling, Report Enable sub-menu. When this is activated, the On Screen message will not appear. The unit is preconfigured for sensor titles to display for temperature, relative humidity and pressure. These titles can be disabled in the titling menus.
Surge Protection:	Video level is clamped at 6.5 V max. Power protected to 1500 W peak pulse with a 10/1000 µs waveform. RS-422 data lines are clamped to 5 V max. with transient suppressors.

Environmental

Ambient Temperature Range:	-29 to 165° F (-34 to 74° C) in accordance with NEMA 2.1.5.1 STD 2; -40 to 132° F (-40 to 55° C), continuous rotation.	
Ambient Humidity Range:	Up to 100% relative, non-condensing.	
Maintained Temperature Range:	14 to 140° F (-10 to 60° C).	
Maintained Humidity Range:	0 to 90% relative, non-condensing.	
Wind:	Tested at sustained winds up to 120 mph, with gusts to 150 mph.	

NEMA TSA Compliance: Operating Voltage/Frequency: 2.1.2, 2.1.3; Power Interruption: 2.1.4; Temperature & Humidity: 2.1.5; Transients, Power Service: 2.1.6; Transients, Input/Output Terminals: 2.1.7; Non Destruct Transient Immunity: 2.1.8; Vibration: 2.1.9; Shock (Impact): 2.1.10.

Ingress Protection: IP 67 rated; EN60529.

Maximum Power Cable Distances

Wire Size (AWG) Annealed Copper Wire	Distance ft (m)			
	24 VAC		**28 VAC**	
	Coax	ViconNet	Coax	ViconNet
20	165 (65)	130 (40)	280 (85)	217 (66)
18	258 (102)	203 (62)	438 (134)	340 (104)
16	413 (126)	325 (99)	700 (213)	544 (169)
14	660 (262)	520 (159)	1120 (341)	870 (265)
12	1031 (314)	812 (248)	1750 (533)	1359 (414)

SVFT-PRS Model Feature Summary

Features	SVFT-PRS23	SVFT-PRS36
Digital/Total Zoom	12/276X	12/432X
Focal Length	3.6-82.8 mm	3.4-119 mm
Horizontal Resolution	540 TVL	540 TVL
Wide Dynamic Range (WDR)	Yes	Yes
Image Stabilization	N/A	EIS
Digital Noise Reduction	Yes	Yes
Pan View	360° continuous	360° continuous
Tilt View	-2.5° - 92.5°	-2.5° - 92.5°
Pan Speed	Variable, 0.1 - 360°/sec	Variable, 0.1 - 360°/sec
Tilt Speed	Variable, 0.1 - 150°/sec	Variable, 0.1 - 150°/sec
Optical Zoom Speed	<1.8 sec, end to end	<1.8 sec, end to end
Preset Capability	79 programmable	79 programmable
Tours/Autotours	8/2	8/2
Privacy Mask	16	16
Alarms	4 inputs/1 relay output	4 inputs/1 relay output
Rating	IP67	IP67

Camera/Lens Specifications

Specifications	SVFT-PRS23	SVFT-PRS23C	SVFT-PRS36	SVFT-PRS36P
	NTSC	PAL	NTSC	PAL
Type	Color	Color	Color	Color
Optical Zoom	23X	23X	36X	36X
Digital Zoom	12X	12X	12X	12X
Total Zoom	276X	276X	432X	432X
Image Device	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
Picture Elements	768(H) x 494 (V), 380,000 pixels	847(H) x 532 (V), 490,000 pixels	768(H) x 494 (V), 380,000 pixels/	752(H) x 582 (V), 438,000 pixels
Scanning System	Progressive scan	Progressive scan	Progressive scan/normal or high-sensitive	Progressive scan/normal or high-sensitive
Sensitivity	0.0009 fc (0.01 lux) auto 1/4s, IR OFF 0.009 fc (0.1 lux) auto 1/4 s, IR ON 0.09 fc (1 lux) auto 1/60s, IR ON	0.0009 fc (0.01 lux) auto 1/3s, IR OFF 0.009 fc (0.1 lux) auto 1/3s, IR ON 0.09 fc (1 lux) auto 1/50s, IR ON	0.0009 fc (0.01 lux) auto 1/4s, IR OFF 0.05 fc (0.5 lux) auto 1/60s, IR ON	0.0009 fc (0.01 lux) auto 1/3s, IR OFF 0.05 fc (0.5 lux) auto 1/50s, IR ON
Horizontal Resolution	540 TV lines	540 TV lines	540 TV lines	540 TV lines
S/N Ratio	More than 50 dB	More than 50 dB	50 dB	50 dB
Synchronization	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)	Internal/External (line lock on AC line)
Automatic Gain Control (AGC)	Adjustable to 30 dB	Adjustable to 30 dB	Adjustable to 30 dB	Adjustable to 30 dB
Backlight Compensation	Software adjustable background video level	Software adjustable background video level	ON/OFF	ON/OFF
Iris Control	Automatic/Manual	Automatic/Manual	Automatic/Manual	Automatic/Manual
Wide Dynamic Range	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)
Digital Noise Reduction	Yes	Yes	Yes	Yes
EIS (Image Stabilizer)	N/A	N/A	Yes	Yes
Video Focus	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele) - 0.01 m (wide)	Automatic/Manual	Automatic/Manual
White Balance	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level
Shutter Speed (sec)	Auto (default): 1/60-1/4K Auto (DSS): 1/2-1/4K Man: 1/2-1/30K	Auto (default): 1/50-1/4K Auto (DSS): 1/1.5-1/4K Man:1/1.5-1/30K	Auto (default): 1/60-1/4K Auto (DSS): 1/2-1/4K Man:1/1-1/30K	Auto (default): 1/50-1/4K Auto (DSS): 1/1.5-1/4K Man:1/0.75-1/30K

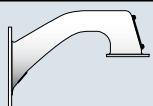| Specifications	SVFT-PRS23	SVFT-PRS23C	SVFT-PRS36	SVFT-PRS36P
	PAL	NTSC	PAL	NTSC/PAL
Lenses				
Focal Length (mm)	3.6 - 82.8	3.6 - 82.8	3.3 – 119	3.3 – 119
Aperture max	f/1.6	f/1.6	f/1.4	f/1.4
Horizontal Angle of View	54° wide, 2.5° tele	54° wide, 2.5° tele	60.2° wide, 1.8° tele	60.2° wide, 1.8° tele

SVFT-PRS Models (NTSC/Coax*)

Environment**	Mount Type	Optical Zoom/ Total Zoom	Camera Type	Lower Dome	Model Number
Outdoor	Pendant	23x/276x	Color (day/night; WDR; DNR)	Clear	SVFT-PRS23
		36x/432x	Color/ (day/night; WDR; DNR, image stabilizer)		SVFT-PRS36

*For the PAL version, add a C (or P in 36X models) to the model number; for ViconNet option, add -V to the model number.
**Includes a blower and thermostatically-controlled heater.

Accessories

Mounts

	Description	Model Number
	Wall mount	SVFT-PR-WMA
	Pipe adapter	SVFT-PR-P
	Prewired coaxial cable	SVFT-PRC12

Power Supplies

Description	Model Number
24 VAC output, 120 VAC input, single-channel	S24WPS-1
24 VAC output, 230 VAC input, single-channel	S24PS-230
28 VAC output, 120 VAC input, single-channel	S28PS-1
24/28 VAC output 120/230 VAC input, single-channel	S28WPS-1/ S28WPS-230
24/28 VAC output 120 VAC input, four-channel	V2448-175PS
24 VAC output 120 VAC input, eight-channel	V248-600PS
24/28 VAC output 120 VAC input, eight-channel	V248-300PS
28 VAC output 120 VAC input, sixteen-channel	V2416-600PS