

## SurveyorVFT Maximum-Security PTZ Dome Series



- Metal housing and polycarbonate lower dome protect camera from impact and vandalism
- Coaxial and TCP/IP (ViconNet) video transmission
- DIP-switch selectable competitive camera dome protocols eliminate the need for external translators
- On-board memory retained in housing; designed for easy installation and servicing
- 360° continuous rotation pan-and-tilt drive with a variety of color domes available
- Day/night 23X and 36X camera options, maximum 432X optical/digital zoom
- EIS (image stabilizer) on 36X model
- High-resolution 540 TVL
- Digital Slow Shutter feature for enhanced low-light applications
- Wide Dynamic Range provides best contrast for high quality images
- Convenient integration into any existing CCTV matrix system
- GUI provides configuration of all features
- Provides Digital Noise Reduction (DNR) and enhanced sensitivity
- Enhanced autofocus

### System Overview

SVFT-M Series of Impact-Resistant Maximum Security Camera Domes is a compact, lightweight and intelligent security device comprised of a camera, pan/tilt drive, receiver and CPU-based electronics all in an attractive and covert rugged enclosure. The SVFT-M offers a rugged, tamperproof, IP66-rated housing for the camera dome consisting of an all metal housing and an impact-resistant polycarbonate lower dome. The SVFT-M can be programmed and operated using any Pilot or NOVA™ control systems and enhanced Vicoax®II protocol. It is available for outdoor use and can be configured with a variety of camera types. Refer to SVFT-M Models Table.

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

### Construction and Installation

The SVFT-M 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 die-cast aluminum with a molded plastic sunshield. The lower dome is injection molded distortion-free clear polycarbonate plastic secured by tamperproof screws. The units are provided with a blower and thermostatically-controlled heater.

A variety of mounting accessories are available to fit almost any installation need. Refer to Accessories Table.

## Electrical

<b>Input Voltage:</b>	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.)
<b>Maximum Operating Distances:</b>	Refer to Table.
<b>Current:</b>	Coax: 1.8 A; ViconNet: 2.3 A.
<b>Power Consumption:</b>	Coax: 44 W maximum; ViconNet: 54 W.
<b>Fuse:</b>	F1: 5x20 mm, 1.6 A 250 VAC slo-blo. F2: 5x20 mm, 2.5 A 250 VAC slo-blo.
<b>Connector Types:</b>	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.
<b>Video Output Impedance:</b>	75 ohms.
<b>Certifications:</b>	CE EN60529; FCC Class A. International Protection (IP) Rating: IP66. NEMA 4X; NEMA TS2-2003 V02.06; IK10++ (50 joules) tested in accordance with EN 6008-2-75 Eh Pendulum Hammer test.

## Operational

<b>Drive Type:</b>	Electrical motorized pan and tilt with electronic control.
<b>Pan View:</b>	360°.
<b>Tilt View:</b>	-2.5 to 92.5°.
<b>Pan Speed:</b>	Variable, 0.1 to 360°/sec.
<b>Autopan Speed:</b>	Variable, 0.1 to 42°/sec; enable/disable.
<b>Tilt Speed:</b>	Variable, 0.1 to 150°/sec.
<b>Zoom/Focus Speed:</b>	Less than 1.8 sec, tele to wide.
<b>Preset Capability:</b>	79 individually programmable.
<b>Preset Solving Speed:</b>	1 second nominal.
<b>Preset Accuracy (Pan and Tilt):</b>	0.1° maximum.
<b>Tour Capabilities:</b>	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.
<b>Autotour Capabilities:</b>	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.

<b>Sectoring:</b>	16 maximum, programmable for size and titling. Sectors have the capability to be blanked out.
<b>Alarm Capabilities:</b>	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.
<b>Relay Alarm Output:</b>	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.
<b>Control Display:</b>	On-screen, menu-driven system allowing full configuration of the dome.
<b>Privacy Masks:</b>	16 programmable, zoom-scalable.
<b>Scheduling:</b>	Real-time clock allows scheduling of up to 64 events, including presets, relays, alarms, tours or autotours.
<b>Multi-Language Menu:</b>	English, Spanish, French, Italian and German.
<b>Camera Features:</b>	6 motion detection zones with 3 sensitivity levels; image freeze during preset solve; flip (invert) image.
<b>Screen Titling Capabilities:</b>	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.
<b>Auto Baud:</b>	Auto baud detection in RS-422/ RS-485 mode; 4800, 9600, 19,200 bps baud rates supported.
<b>Absolute Position Control:</b>	Available in RS-422/RS-485 mode. Pan/tilt: 0.125°; zoom: 0.125X.
<b>Competitive Protocols:</b>	DIP switch selectable.
<b>PTZ Functions:</b>	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 day/night cameras (NTSC/PAL) in a variety of zoom and feature capabilities. Refer to for specifications Table.

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**Coaxial Version**

<b>Control Protocol Hardware:</b>	Vicon control system or keypad. NTCIP: 1103 compatible hardware.
<b>Control Protocol Software:</b>	Vicon's Surveyor Direct Control program run on a standard PC type computer with an RS-422/485 half duplex protocol interface.
<b>Control Protocol Format (set via DIP switch): (Note on Competitive Protocols):</b>	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.
<b>Connector Types:</b>	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)**

<b>Communication Protocol Hardware:</b>	Vicon's Kollector Digital Recorders and ViconNet Workstations.
<b>LAN Interface:</b>	100 Mbps, TCP/IP Unicast.
<b>Connector Types:</b>	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**

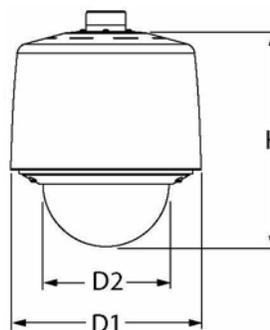
<b>Maximum Distances:</b>	Coax: 1100 ft (350 m), cable dependant. Vicoax: 1500 ft up to 140° F (60° C); 1000 ft up to 165° F(74° C). ViconNet: 100 meters without repeater.
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**Mechanical**

<b>Application:</b>	Outdoor.
<b>Mounting:</b>	Outdoor pendant. See Table for compatible Vicon mounts
<b>Pendant Mount Size/Thread:</b>	Standard 1-1/2 inch male NPT pipe thread or metric equivalent.
<b>Dimensions:</b>	See Figure. Housing Diameter (D1): 9.1 in. (231 mm). Dome Diameter (D2): 6.0 in. (152 mm). Height (H1): 10.3 in. (262 mm).
<b>Weight:</b>	9.3 lb (4.3 kg).
<b>Construction:</b>	Die-cast aluminum with molded plastic sunshield; clear polycarbonate lower dome. Secured with tamperproof screws.
<b>Color:</b>	White housing and sunshield.

**Environmental**

<b>Operating Temperature Range:</b>	-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.
<b>Ambient Humidity Range:</b>	Up to 100% relative, non-condensing.
<b>Storage Temperature Range:</b>	-40 to 150° F (-40 to 65° C).
<b>Maintained Humidity Range:</b>	0 to 90% relative, non-condensing.
<b>Rain/Wind:</b>	Heavy rain up to 4 in./hr at winds up to 90 mph, when mounted on standard Vicon wall mount.



**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)

## Camera/Lens Specifications

Specifications	SVFT-M23	SVFT-M23C	SVFT-M36	SVFT-M36P
	NTSC	PAL	NTSC	PAL
	<b>Type</b>	Color (Day/Night)	Color (Day/Night)	Color (Day/Night)
<b>Optical Zoom</b>	23X	23X	36X	36X
<b>Digital Zoom</b>	12X	12X	12X	12X
<b>Total Zoom</b>	276X	276X	432X	432X
<b>Image Device</b>	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD	1/4-inch interline transfer CCD
<b>Picture Elements</b>	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
<b>Scanning System</b>	Progressive scan	Progressive scan	Progressive scan/normal or high-sensitive	Progressive scan/normal or high-sensitive
<b>Sensitivity</b>	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
<b>Horizontal Resolution</b>	540 TV lines	540 TV lines	540 TV lines	540 TV lines
<b>S/N Ratio</b>	More than 50 dB	More than 50 dB	50 dB	50 dB
<b>Synchronization</b>	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)
<b>Automatic Gain Control (AGC)</b>	Adjustable to 30 dB	Adjustable to 30 dB	Adjustable to 30 dB	Adjustable to 30 dB
<b>Backlight Compensation</b>	Software adjustable background video level	Software adjustable background video level	ON/OFF	ON/OFF
<b>Iris Control</b>	Automatic/Manual	Automatic/Manual	Automatic/Manual	Automatic/Manual
<b>Wide Dynamic Range</b>	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)	OFF/ON (Auto or Manual)
<b>Digital Noise Reduction</b>	Yes	Yes	Yes	Yes
<b>EIS (Image Stabilizer)</b>	N/A	N/A	Yes	Yes
<b>Video Focus</b>	Automatic/Manual 1.0 m (tele ) - 0.01 m (wide)	Automatic/Manual 1.0 m (tele ) - 0.01 m (wide)	Automatic/Manual	Automatic/Manual
<b>White Balance</b>	Automatic/Manual Red/Blue Gain Level	Automatic/Manual Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level	Automatic/Manual; Red/Blue Gain Level
<b>Shutter Speed (sec)</b>	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-M23	SVFT-M23C	SVFT-M36	SVFT-M36P
	NTSC	PAL	NTSC	PAL
	<b>Lenses</b>			
<b>Focal Length (mm)</b>	3.6 - 82.8	3.6 - 82.8	3.3 - 119	3.3 - 119
<b>Aperture max</b>	f/1.6	f/1.6	f/1.4	f/1.4
<b>Horizontal Angle of View</b>	54° wide, 2.5° tele	54° wide, 2.5° tele	60.2° wide, 1.8° tele	60.2° wide, 1.8° tele

**SVFT-M Model Feature Summary**

Features	SVFT-M23	SVFT-M36
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	IP66	IP66

**SVFT-M 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-M23
		36x/432x	Color/ (day/night; WDR; DNR, image stabilizer)		SVFT-M36

\*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
	Indoor or outdoor wall mount	SVFT-UWM
	Indoor or outdoor short wall mount	SVFT-WM
	Outdoor parapet mount	SVFT-UPM-1
	Outdoor roof mount	SVFT-URM-1
	Soffit mount	SVFT-SOF

## 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



