

## Digital CCD Color Camera FAC 940/FAC 940L FAC 940L-IR

- 1/2" Interline Hyper HAD CCD sensor
- 1/2" EXview HAD CCD(with infrared version only)
- 440,000 effective pixels
- For universal day/night application (color-monochrome-infrared) only IR-Version
- Remote configuration and control via PC or control unit
- Low-speed shutter providing extreme light sensitivity (FAC 940L and L-IR)
- Integrated picture store (FAC 940L and L-IR)
- Extensive range of system accessories
- Designed for architectural integration
- Flexible modular housing
- Ideally suited for digital transmission networks
- Pixel error correction (FAC 940L and L-IR)
- Multiplexed live/stored picture comparison
- Electrical isolation of video/power supply unit

### Description

Functionality and aesthetic design the special attraction of digital CCD cameras FAC 940, FAC 940L and FAC 940L-IR lies in their innovative design and modular construction.

The extremely small camera body combined with the MID 930/MIW 930 design housings enables these cameras to blend discreetly and inconspicuously with architectural and interior designs for indoor applications. A wide range of components, such as waterproof housings, allow the same cameras to be used for outdoor applications in harsh environments.

The FAC 940 cameras boast an extensive array of standard features, including electronically controlled exposure, back light compensation (BLC) and automatic white balance. The versions FAC 940L and FAC 940L-IR come with the standard features automatic black level control, pixel error correction, processor-controlled low-speed shutter and a picture store for 8 fields and stored picture comparison. Software system settings and scene-specific adjustments can be made quickly and easily via the remote control interface on the camera without having to leave the control centre. And it goes without saying that these cameras are easily integrated in existing systems.

<sup>1)</sup> Trademark of Sony Corporation



CCD camera FAC 940 / FAC 940L / FAC 940L-IR  
in design indoor housing with wall bracket



CCD camera FAC 940 / FAC 940L / FAC 940L-IR  
Basic module with lens



design award  
winner  
2002

investment safety  
products and solutions made in germany

 **plettac**  
Security UK Ltd

## Standard Features



Fig. 1 Scene without low-speed shutter/picture storage



Fig. 2 Integrated, processorcontrolled low-speed shutter / picture storage



Fig. 3 Scene without backlight compensation and classification window



Fig. 4 Scene with backlight compensation and classification window

**Integrated, processor-controlled low-speed shutter/picture storage (FAC 940L and L-IR).** Low-speed shutter can produce excellent pictures in extremely adverse lighting conditions (e.g. night-time scenes) by means of field integration (long-term exposure). The operating threshold and control range can be configured by the user. The built-in picture store enables up to 8 fields to be stored in the actual camera and can be controlled via external sensors or from the control centre.

**Backlight compensation (BLC) and classification window for SCS/AGC and automatic iris control.** This function improves the recognition of detail in parts of the picture where strong back lighting is a problem or where there are large bright patches. Dynamic adjustment is achieved by changing the SCS, AGC and iris.

**Automatic white balance / white balance window.** The time taken to respond to changing light conditions can be regulated using the variable speed control of the adjustable color distribution function. This makes it possible to reproduce any color situation optimally.

**User memory.** The camera has one reference memory containing the factory settings and 3 freely editable user memories for optimum adaptation to the scene. These memories can be selected via an interface or control inputs.

**Remote control via RS-485 interface.** This interface enables unrestricted bidirectional data communication with the camera. It is used for making software-related system modifications and for calling up camera alarms from the control centre.

**Security mode (passive theft protection).** Whenever the camera is brought into service, a two-level security check is carried out. If the thief does not know the code, the camera is of no use to him.

**Video output.** Asymmetrical CVBS (75 Ohm) and symmetrical CVBS (2-wire) or Y/C component signal which can also be inverted (negative picture).

**Test generator for video line alignment.** Test pattern for fast alignment of the down-circuit two-wire receiver.

**Camera address.** The cameras in the network can be selected individually by assigning addresses between 1 and 31.

**I/Os.** 2 freely programmable control input and/or output contacts.

**Configurable function procedures.** 8 freely programmable function procedures, each with a series of up to 4 selected commands, can be activated via function keys in the control centre. These can be used to optimize function and operating procedures.

**Transmission characteristic adjustment.** The transmission characteristic of the video amplifier can be adjusted to a great extent to suit a particular location so that the resulting picture has the correct balance between light and dark areas.

**Lens control with different iris types.** Auto iris lens, kangaroo lens, galvanometer lens (DC) and ER lens (electrical remote lens).

Lens control socket FAC 940L, FAC 940L-IR					
Pin	Auto iris lens	Galvanometer lens/DC		Kangaroo lens	ER lens
1	12 V DC/50 mA	- Damping	Coil impedance	12 V DC/<50 mA	12 V DC/50 mA
2	-	+ Damping	650 Ω ± 150 Ω	-	-
3	VB 800 mV/pos	+ Damping	Coil impedance	Control 0/5 V	Control 1,5...5 Vcc
4	GND	- Damping	150 Ω ± 100 Ω	GND	GND

## Accessories for CCD cameras FAC 940/FAC 940L/ FAC 940L-IR

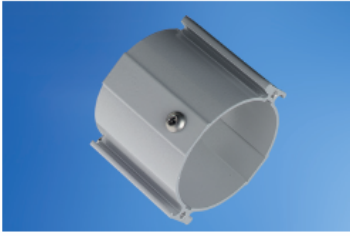


Fig. 5 MID 930 indoor design housing

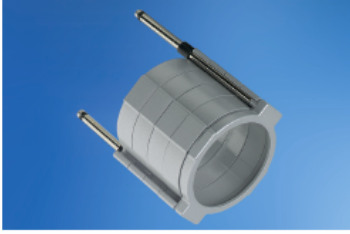


Fig. 6 TUB 930 lens tube for MID 930



Fig. 7 MIW 930 indoor design housing with wall bracket



Fig. 8 CW 930  
CW waterproof housing



Fig. 10 W 930 / WN 930  
W waterproof housing

### Installation accessories for indoor applications

#### MID 930 indoor design housing

- FAC 940/FAC 940L can be installed and aligned to the scene at any angle
- 1/4" fixing thread
- Concealed lens cabling (fig. 5)

#### TUB 930 lens tube for MID 930

- MID 930 extension in the same design
- Lens cover
- Concealed lens cabling
- Glass disc for insertion at the front (included in scope of supply)
- Can be adjusted for different lens lengths (fig. 6)

#### MIW 930 indoor design housing with wall bracket

- Completely concealed cabling
- With wiring/connection socket for surface mounting or concealed mounting
- FAC 940/FAC 940L can be installed and individually aligned to the scene at any angle (fig. 7)

#### ADP 930 1/4" mounting adapter

- 1/4" fixing thread for camera
- The easiest way to mount FAC 940 (no figure)

### Installation accessories for outdoor applications

The waterproof accessories listed below enable the FAC 940/FAC 940L cameras to be used in harsh outdoor environments. (fig. 8 - 11)



Fig. 9 SD 930 CW  
CW sun shield



Fig. 11 SD 930 W  
W sun shield

Technical Data	FAC 940	FAC 940L	FAC 940L-IR
Sensor	1/2" Interline Hyper-HAD		1/2" EXview HAD CCD™
Total pixels	473.000 = 795 (H) x 596 (V)		
Effective pixels	440.000 = 752 (H) x 582 (V)		
Line standard	625 Zeilen, 50 Hz		
Scanning standard	CCIR-PAL		
Horizontal resolution	480 lines (6 MHz)		
Spectral range	400 nm ... 650 nm		incl. 850 nm-1000 nm
Light sensitivity (lux) (F 0.95/6500 K) LSS* with 4-field integration	at	LSS	LSS
	100 % level	0.45	0.45
	50 % level	0.2	0.2
	25 % level	0.1	0.1
Shutter	1/100.00 - 1/50 s	1/100.00 - 10 s with LSS	
Max. scene illumination	100.000 lux in shutter operation		
<b>Electrical Data</b>			
Video output	CVBS 1Vss/75 Ω; Y/C; 2-wire		
Operating voltage in W930 housing	10 VDC ... 29 VDC		
in WN930 housing	230 VAC +10%/-15%		
Power consumption	4 W	5 W	
in W930/CW930 housing with screen heater	additional 10 W / 5 W		
<b>General Data</b>			
Video output/ Remote control interface	BNC, 15-pin D-Sub connector CW-, W- and WN930 with system connector		
Lens mount	C-/CS Mount		
Degree of protection	IP 32	CW-/W-/WN930=IP 67	
Storage temperature	-40°C ... +70°C		
Operating temperature	-25°C ... +55°C	W/WN= -35°C... +55°C	
Weight	0.25 kg		
Color of indoor design housing	RAL 9006		
Color of waterproof housing	RAL 7032		
Dimensions (D x L, mm)	70 x 61.5 (without accessories)		
Weight incl. packaging	0.5 kg		
Dimensions of packaging (L x W x H, mm)	175 x 130 x 100		
Bulk packaging containing 8 FAC930:	2.5 kg		
Weight incl. packaging	345 x 255 x 110		
Dimension of packaging (L x W x H, mm)	345 x 255 x 110		
Scope of supply	CD-ROM with PGE940 configuration software and documentation, C/CS mount adapter ring, lens connector, operating instructions (German, English), 2 x M3 fixing screws for modifying old system connectors on SN830I		

Product overview/Ordering data		
Item number	Name	Description
9.43041-1103	FAC 940	Indoor color camera
9.43041-1104	FAC 940L	Indoor color camera with LSS and integrated picture store
9.43041-1105	FAC 940L-IR	Indoor color camera with LSS and integrated picture store and infrared filter
9.43041-1003	FAC 940	8 pieces bulk package
9.43041-1004	FAC 940L	8 pieces bulk package
9.43041-1201	MID 930	Indoor housing for FAC 940
9.43041-1205	MIW 930	Indoor housing with wall bracket for FAC 940
9.43041-1301	W 930	Waterproof housing for FAC 940
9.43041-1302	WN 930	Waterproof system housing with built-in power supply unit for FAC 940
9.43041-1401	CW 930	Waterproof system housing for FAC 940
9.43041-1309	W 930 NUC	Camera housing for radiative areas
9.43041-1202	TUB 930	Lens tube for MID 930
9.43041-1403	SD 930 CW	Sun shield for CW 930 housing
9.43041-1303	SD 930 W	Sun shield for W 930 and WN 930 housings
9.43041-1801	ADP 930	1/4" adapter for FAC 940
9.43041-1305	RS 930 W	Kit for installing FAC 940 in existing W, W2, WN, WN2 housings
9.43041-1405	RS 930 CW	Kit for installing FAC 940 in existing CW housing
9.43041-1901	RS 930 - 76W	Kit for installing FAC 940 in FA76 housing
9.43041-1902	RS 930 - 85W	Kit for installing FAC 940 in FA85 housing
9.43041-1903	RS 930 - 82CW	Kit for installing FAC 940 in FA82 housing
9.43041-1904	RS 930 - Candid	Kit for installing FAC 940 in Candid housing
7.64305-0170	SN 830 I	Power supply for indoor applications
004906100601	SE-Adapter	RS485/RS232 interface adapter

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Specifications Subject to Change without Notification