

## Smart cameras

pictor®

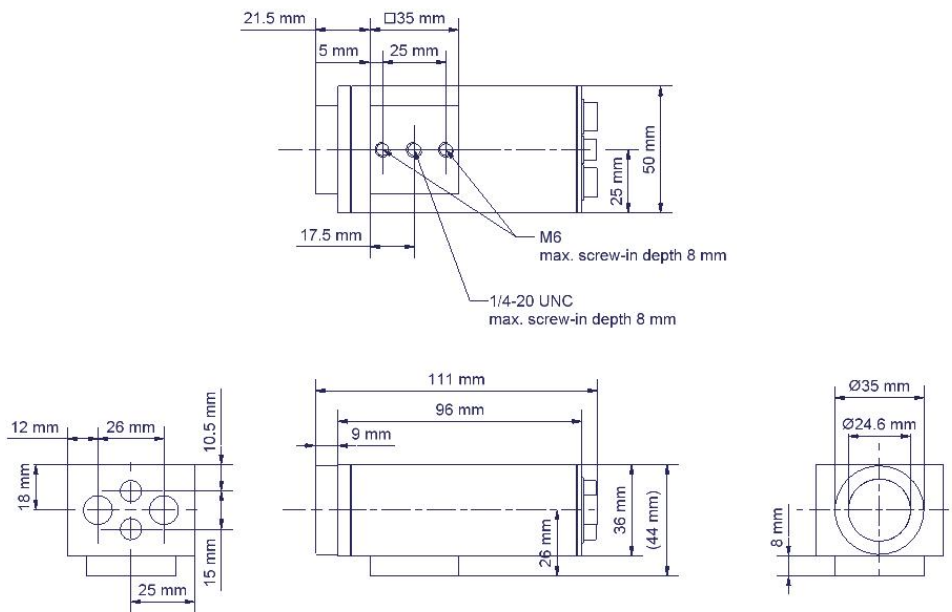
M16xx series

### Product features

- The Machine Vision stand-alone solution
- Sensor, framegrabber, image processor, communication interfaces and software on board
- Compact and robust construction
- High performance image processing with DSP on industrial platform
- Extremely rapid image acquisition and processing
- SVGA output permits the output of test images to a monitor with no run time delay
- A large number of powerful algorithms for industrial Machine Vision
- The common industrial protocols for communication with other systems
- Graphic programming under Windows based on dialogues



### Engineering drawing



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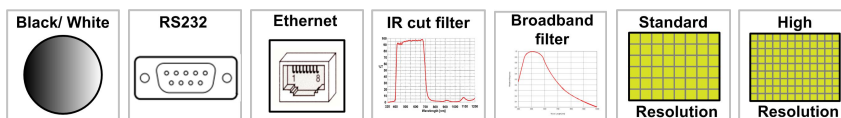
### Definition

Cameras of the M16xx series united Ethernet and RS232 interface in one unit.

The M16xx series is available as with IR-cut filter or Broadband filter.

The cameras of the series have a image sensors with standard resolution 640 x 480 pixels (VGA) or high resolution.

### Variants



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### Technical data

Model	pictor M1606/E 4-20-193	pictor M1617/E 4-20-195
Processor	TI-DSP 400 MHz, 3200 MIPS	TI-DSP 400 MHz, 3200 MIPS
Memory	32 MB SDRAM, 4 MB Flash, 128 MB User-ROM (SD-Card)	32 MB SDRAM, 4 MB Flash, 128 MB User-ROM (SD-Card)
Video exit	SVGA	SVGA
Data interface	Ethernet (max.16 connections), RS232 (to 115 kbaud)	Ethernet (max.16 connections), RS232 (to 115 kbaud)
Process interface	4 Input and 4 Output 24 VDC, opto decoupled	4 Input and 4 Output 24 VDC, opto decoupled
Fast TTL Trigger	In/ Out, Switching time < 0.5 µs	In/ Out, Switching time < 0.5 µs
Objective connection	C-Mount	C-Mount
Voltage supply	24 VDC ± 20 %, max. 210 mA	24 VDC ± 20 %, max. 210 mA
Weight	380 g	380 g
Dimensions	111 x 50 x 45 mm <sup>3</sup>	111 x 50 x 45 mm <sup>3</sup>
Degree of protection	IP50	IP50
Operating temperature	0 ... 45 °C	0 ... 45 °C
Air humidity	max. 80 %, not condensing	max. 80 %, not condensing
Sensor	1/3" Sony CCD, b/w, progressive scan	1/3" Sony CCD, b/w, progressive scan
Pixel number	640 x 480	1024 x 768
Full frame frequency	63 Hz	20 Hz
Shutter	5 µs ... 20 s	10 µs ... 20 s
Analogue-digital converter	10 bit	10 bit
DMA-Controller	parallel picture recording, picture transfer & image processing	parallel picture recording, picture transfer & image processing

### Variants

Variants	IR-cut filter	Broadband filter
Order number M1606E	4-20-193	4-20-194
Order number M1617E	4-20-195	4-20-196

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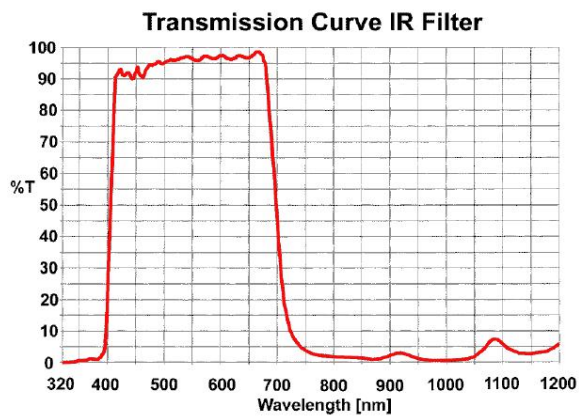
### Notes

### Accessories

Order no.	Name	Description
4-20-204	Key-Pad	using the monitor menu
4-40-181	V24 serial cable C4, 5m	accessory equipment for pictor M16xx/M18xx and Mxx/E
4-40-182	V24 serial cable C4, 10m	accessory equipment for pictor M16xx/M18xx and Mxx/E
4-40-184	Keypad/V24-cable C4, 5m	for keypad-pictor M16xx/M18xx
4-40-200	Trigger cable, 5m	accessory equipment for pictor M1xxx and Mxx/E
4-40-201	Trigger cable, 10m	accessory equipment for pictor M1xxx and Mxx/E
4-40-203	Ethernet cable, 5m	accessory equipment for pictor M1xxx/E and Mxx/E
4-40-204	Ethernet cable, 10m	accessory equipment for pictor M1xxx/E and Mxx/E
4-40-209	plug type, power supply, 24V DC	accessory equipment for pictor M1xxx and Mxx/E
4-40-223	PLC/power cable, 5m	accessory equipment for pictor M1xxx and Mxx/E
4-40-224	PLC/power cable, 10m	accessory equipment for pictor M1xxx and Mxx/E
4-40-226	Ethernet cross-module	accessory equipment for pictor M1xxx, Mxx/E
4-40-240	SVGA cable for monitor, 5m	accessory equipment for pictor M1xxx
4-40-241	SVGA cable for monitor, 10m	accessory equipment for pictor M1xxx
3-90-025	PKM-PLC8	Process modul IO 8 IN/ 8 OUT dig. IO for pictor and vicosys via RS232 or Ethernet
3-90-026	PKM-PB	Process modul Profibus DP for pictor and vicosys via RS232 or Ethernet

### Technical diagram

IR-cut filter



Broadband filter

