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PICTOR® – Data Sheet

Currently we offer nine versions of PICTOR smart cameras (including Pictor MxxE) from three different series. The Pictor M16xx series features a 400 MHz processor (3200 MIPS) while the Pictor M18xx series features a 1 GHz processor (8000 MIPS).

Pictor M16xx Smart Cameras		
Model	Smart Camera Pictor M 1606/E	Smart Camera Pictor M 1617/E
Processor	TI-DSP 400 MHz, 3200 MIPS	
Memory	32 MB SDRAM, 4 MB Flash, 128 MB User-ROM (SD-Card)	
Vidoe out	SVGA	SXVGA
Data interface	Ethernet (max. 16 connections), RS232 (up to 115 kbaud/s)	
Process interface	Each 4 I/O, 24 VCD, opto-decoupled	
Fast TTL Trigger	In/Out, switching time < 0,5 μ s	
Objective connection	C-Mount	
Power supply	24 VCD \pm 20 %, max. 210 mA	
Weight	380 g	
Dimensions	111 x 50 x 45 mm ³	
Grade of protection	IP50	
Operating temperature	0 ... 45 °C	
Air humidty	max. 80 %, not condensing	
Sensor	1/3" Sony CCD, grayscale, progressive scan	
Pixel	640 x 480	1024 x 768
Full frame frequency	63 Hz	30 Hz
Shutter	5 μ s – 20 s	
Analog-digital converter	10 bit	
DMA-Controller	Parallel image recording, image transfer and image processing	

Pictor M18xx Smart Cameras			
Model	Pictor M1817/E	Pictor M1821/E	Pictor M1856/E
Processor	TI-DSP 1 GHz, 8000 MIPS		
Memory	64 MB SDRAM, 4 MB Flash, 512 MB User-ROM (SD-Card)		
Video out	SXVGA	UXGA	SVGA
Data interface	Ethernet (max. 16 connections), RS232 (up to 115 kbaud/s)		
Process interface	Each 4 I/O, 24 VCD, opto-decoupled		
Fast TTL Trigger	In/Out, switching time < 0,5 μ s		
Objektive connection	C-Mount		
Power supply	24 VCD \pm 20 %, max. 230 mA		
Weight	380 g		
Dimensions	111 x 50 x 45 mm ³		
Degree of protection	IP50		
Operating temperature	0 ... 45 °C		
Air humidty	max. 80 %, not condensing		
Sensor	1/3" Sony CCD, grayscale, progressive scan		
Pixel	1024 x 768	1600 x 1200	640 x 480
Full frame frequency	20 Hz	10 Hz	242 Hz
Shutter	10 μ s ... 20 s	20 μ s ... 20 s	5 μ s ... 20 s
Analog-digital conventor	10 bit		
DMA-Controller	Parallel image recording, image transfer and image processing		

Common Data – all Pictor Smart Cameras	
Functionality	Image processing and analysis, measurement, PLC communication, subprograms, communication via RS232 or ethernet, remote control
Operation	Set-up via PC with graphic user interface, no special programming skills required, stand alone operation
Profibus and Interbus possible	
standardized software interface for C + + , Visual Basic, Delphi	

PICTOR® – Functionality Overview

Command categories

The following overview contains the available commands available for PICTOR sorted by category.

Using VCWin you can compose your needed program.

Image commands

Aquisition of images and associated tasks

- Videomode
- Grab image
- Image preprocessing
- Delete image
- Asynchronous flash
- Configure shutter

Evaluation commands

Create new geometrical elements, check, evaluate and send results

- Define point
- Best fit line
- Best fit circle
- Center of gravity of contour
- Extreme points of contour
- Contour distance
- Contour curvature analysis
- Contour comparison / contour angle
- Distance
- Angel
- Combine results
- Evaluate string
- Superimpose
- Evaluate results

Locate commands

Determine and test the characteristics of the test objects comparing them with nominal values

- Locate point
- Locate line
- Locate circle
- Blob analysis
- Search / save pattern
- Locate contour
- Count pixels
- Test color
- Inspect surface
- Test gray value
- Brightness offset
- Brightness percentage
- Angular position
- Focus
- Locate edges on circle
- Transition at line
- Set character set
- Read character
- Data Matrix Code
- Teach in objects
- Search and identify object

Control commands

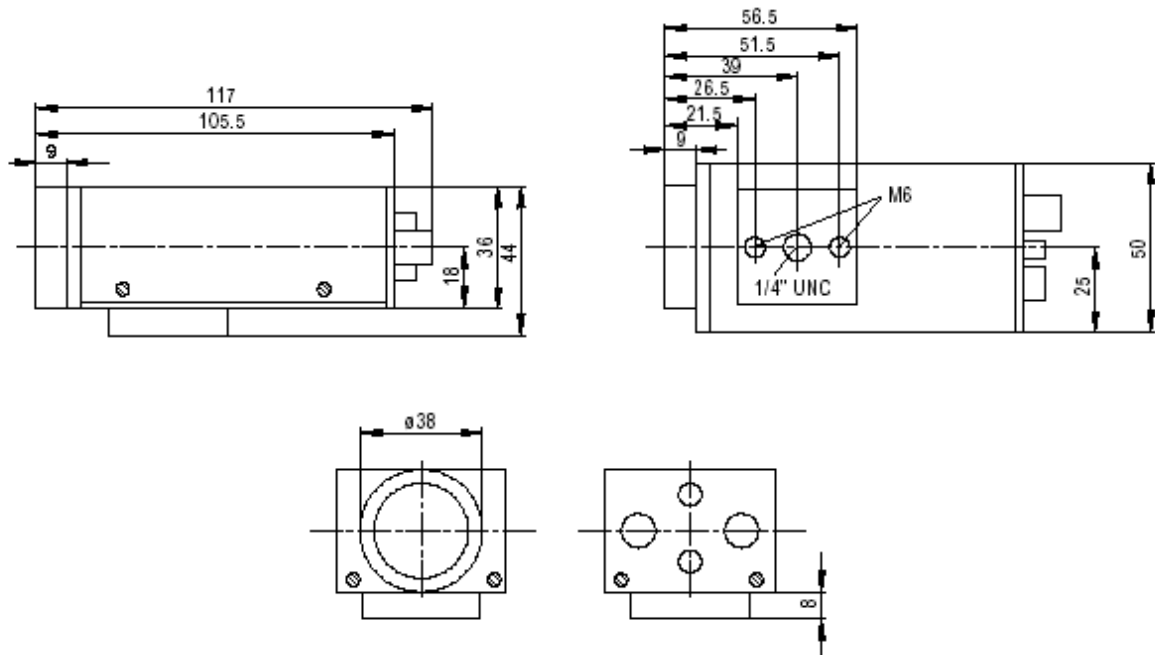
Control and manipulate the test programs, calibrate, send and edit directly

- Branch
- Port control
- Indexed branch
- Line I/O
- Port I/O
- Gateway field bus
- Robot communication
- Sending measuring values
- Send image
- Save image
- Stopwatch
- Wait
- Counter
- Save system time
- Calibrate
- Geometry sets
- Coordinate transformation

- Copy geometry variables
- Direct code input

Scope of Delivery

- Smart-camera with machine vision software
 - Lenses, power supply and cable are to be ordered separately



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