

overview

commands description of vision systems

Welcome to the world of
vcwin®
the graphic user interface
for machine vision systems
made by Vision & Control



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1. Commands

Image analysis commands

Command	description
Grab image	grabs an image, sends image content to image page
Shutter	electronic aperture for setting the exposure time
Asynchronous flash	trigger-controlled image acquisition with flash
Video mode	switches between display of live image and memory image
Delete image	deletes either image memory, graphic or overlay memory
Display	sets image page for input, processing & display
Image preprocessing	uses image filters
Locate point	finds a point
Locate line	finds a line
Locate circle	finds a circle
Locate contour	finds a contour
Blob analysis	determination of flat areas of equal grey value
Search pattern	command for pattern recognition
Save pattern	command for recognising and saving a pattern
Advanced pattern search	command for recognising and determining the rotational position of a pattern
Rotary angle	command for determining the rotational position of an object
Rotation based on moments	command for fast determining the position and the rotary angle of an object
Image transformation	transformation of image content, e.g. from an arc to a rectangle
Colour blob analysis ¹⁾	find from connected objects of certain colour gamut's
Colour test ¹⁾	command for determining and evaluation of colour variation
Colour binarization ¹⁾	black and white binarization of coloured objects with individual evaluation of the individual colour of channels
Colour conversion ¹⁾	conversion of coloured objects into a grey value image with individual evaluation of the individual colour of channels
Linescancamera	command for integrating the line scan camera's multiple lines into an image
¹⁾ only for colour systems	

Inspection commands

Command	description
Test grey value	determines the average grey value in a location window
Test brightness percentage	determines the percentage of brighter pixels in an image window
Count pixels	command for enumerating pixels in a test window
Brightness offset	deviation of grey value of a test object in a test window and brightness tracking of all further commands
Image difference	grey value information of a reference image is subtracted from the image and the result saved in an image page
Inspect surface	command for inspecting surfaces
Transition at line	command for counting the edges along a detection beam
Locate edges on circle	command for the edges on an arc
Focus	determines the focus value as a measure of sharpness

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Command	description
Search and identify object	command for searching and identifying objects
Teach in objects	command for teaching in objects
Set character set	teaches in individual characters and character sets
Read character	inspection command for reading plain text characters
Data matrix code	command for reading data matrix code, according to ECC200
Mask check	command for testing complex structures for completeness and freedom from error

System calibration

Command	description
Geometry sets	command for saving or loading of geometry structures
Calibrate	command for calibrating the Machine Vision system
White balance ¹⁾	command for configuring the white balance from the Machine Vision system
¹⁾ only for colour systems	

Measurement evaluation

Command	description
Define point	definition and calculation of new points in the test program
Define line	calculation and definition of lines
Define circle	calculation and definition of circles
Best fit line	calculation of best fit line from points or contours
Best fit circle	calculation of best fit circle from points or contours
C of G of Contour	calculation centre of gravity and surface area of a contour
Extreme points of contour	calculation of extreme points of a contour
Contour distance	calculation of distance of contour to geometry elements
Contour curvature analysis	evaluation of the curvature of a contour
Contour angle	evaluation of the angle of the a contour
Distance	determination of the distance between two geometry variables
Angle	angle calculation from geometry structure variables
Combine results	command for mathematical operations of results and values

Documentation, selection and statistics

Command	description
Evaluate string	comparison and conversion of strings
Superimpose	superimposes variables from the geometry structure
Evaluate result	command for logical combination and sending of results
Send measuring values	sending of measuring values (results and strings)
Send image	sending of images from camera to host computer
False colour output	command for coloured visualisation grey value areas

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Process control command

Command	description
Line I/O	communication of the inspection system with the process environment via digital I/Os
Port I/O	communication of the inspection system with the process environment via digital I/Os
Gateway field bus	configuration of data transfer over the gateway field bus
Port control	definition of branch commands to markers or subroutines depending on input signals from the hardware inputs
Data transfer	communication with other devices using various protocols
Process module	command for connecting external module for I/O extension and profibus communication
Robot communication	command for the communication with robots

Test program utilities

Command	description
Program control	setting program branches and markers
Indexed branch	inserting multiple branches (jumps and subroutines) into the test program
Stopwatch	starts an internal stopwatch with a comparison function
Wait	command for inserting a pause
Counter	command for inserting counting command
System time	saves the system time in a result variable
Copy geometry variables	copy geometry variables via a counter index
Coordinate transformation	command for conversion from robot to camera coordinates
Direct code input	command for inserting user-created or new commands that the camera supports
External storage device	command for selecting a storage device
Utilities for vicosys	command for providing the following functions for use with the vicosys multi-camera system: <ul style="list-style-type: none"> ■ multiscreen mode ■ set camera gain ■ sort cameras ■ set resolution

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2. Version

Version number: 2.0.0

Vision & Control GmbH reserves the right to amend this document.