

Product Numbers and Specifications

Table of Product Numbers

Product name	Specification	Part No.
AX40 Series Controller	NPN output; English/Japanese switchover (No manual)	ANMX401
	NPN output; English/Japanese switchover (English manual)	ANMX402
	PhotoMOS output; English/Japanese switchover (No manual)	ANMX403
	PhotoMOS output; English/Japanese switchover (English manual)	ANMX408
Color camera	Random color camera	ANMX8310
Color camera cable	Camera cable: 3 m	ANMX833003*
	Camera cable: 5 m	ANMX833005*
	Camera cable: 10 m	ANMX833010*
	Camera cable: 15 m	ANMX833015*
	Camera cable: 20 m	ANMX833020*
VGA monitor	With keypad connector	ANMX8300
	No keypad connector	ANMX8301
Product set for installation on main unit	With keypad connector Mounting brackets (ANMX835)/ Monitor cable: 0.5 m/Keypad cable: 0.5 m	ANMX8302
	Without keypad connector Mounting brackets (ANMX835)/Monitor cable: 0.5 m	ANMX8303
Mounting brackets for installation of VGA monitor on controller	Brackets for mounting VGA monitor on the controller	ANMX835
VGA monitor cable	Monitor cable length: 0.5 m (dedicated for all-in-one mounting)	ANMX83310
	Monitor cable length: 1 m	ANMX83311
	Monitor cable length: 2m	ANMX83312
	Monitor cable length: 3m	ANMX83313
Keypad cable (VGA monitor with keypad connector and Controller connection)	Cable length: 0.5 m	ANMX83330
	Cable length: 1 m	ANMX83331
	Cable length: 2 m	ANMX83332
	Cable length: 3 m	ANMX83333
C mount lens	f6.5 C mount lens	ANB842
	f8.5 C mount lens	ANB843
	f8.5 C mount lens with lock	ANB843L
	f16 C mount compact lens	ANB845N
	f16 C mount compact lens with lock	ANB845NL
	f16 C mount super-compact lens with lock	ANM88161
	f25 C mount compact lens	ANB846N
	f25 C mount compact lens with lock	ANB846NL
	f25 C mount super-compact lens with lock	ANM88251
	f50 C mount lens	ANB847
	f50 C mount lens with lock	ANB847L
	f50 C mount compact lens	ANM8850
f50 C mount compact lens with lock	ANM88501	
Adapter ring	5 mm adapter ring	ANB84805
	(0.5/1/5/10/20/40 mm) adapter ring	ANB848
Operation keypad	With 2 m cable	ANM85202
	With 3 m cable	ANM85203
	With 2 m cable: CE	ANM85202CE
	With 3 m cable: CE	ANM85203CE
COM port connecting cable	COM port and PC (D-SUB: 9pins) connection; 3m	ANM81103
	COM port and PLC (discrete-wire cable) connection; 3m	ANM81303
Vision Support Tool AXTOOL	English version	ANMX8321

* When ordering CE products, please add "CE" to the end of the product number.

Functional specification

Product name	Specification
CPU	32-bit RISC CPU
Settings data storage capacity	Approx. 4 MB
Frame memory	512 x 480 (pixels)
Operation environment	Menu selection using dedicated keypad (Japanese/English switchable)
	Menu selection using key emulation serial commands
Monitor display	Full color VGA/gray scale image/binary image/extraction color + brightness image through
	Memory + data display area
	Two-screen compressed display
Connected camera	Random color camera (progressive)
Number of connected cameras	2
Process	When 1 camera is connected 2 processes can be selected among gray scale, differentiation and color extraction processing.
	When 2 cameras are connected, gray scale, differentiation or color extraction can be selected for each camera.
Gray scale processing	8 bit 256 gradations (binarization processing possible, 8 groups/product type)
Differentiation processing	8 bit 256 gradations (binarization processing possible, 8 groups/product type)
Color extraction processing	Max. 8 color simultaneous extraction/camera
Number of product types	16
Inspection functions	Max 99/product type
Position adjustment function	99/product type positional adjustment function (multiple adjustment possible)
	Binary edge (with priority designation) Gray scale edge (with priority designation) *Only when gray scale and differentiation processing are selected. Feature extraction (mask setting possible) Matching (template mask setting possible) *Only when gray scale and differentiation processing is selected.
Rotation adjustment function	Max. 99/product type (multiple adjustment possible)
	Horizontal binary edge Vertical binary edge Horizontal gray scale edge *Only when gray scale and differentiation processing are selected. Vertical gray scale edge *Only when gray scale and differentiation processing are selected. Feature extraction (mask setting possible) Matching (template mask setting possible) *Only when gradation and differentiation processing are selected. Contour matching (±180 degrees)
Binary window	Max. 99/product type Shape: rectangle/polygon (3 to 16 points)/ellipse; 16 mask shape: rectangle/polygon/ellipse; 16 white (extraction)/black (no extraction) selectable Expansion and contraction filter Judgement = surface value Output = surface value
Binary edge	Max. 99/product type Shape = line/plane Selection possible among white (extraction) → black (no extraction) and white (extraction) → black (no extraction) Depth/width designation function Judgement = detection/no detection Output = edge detection coordinate
Feature extraction	Max. 99/product type Shape: rectangle/polygon (3 to 16 points)/ellipse; mask shape: rectangle/polygon/ellipse; 16 white (extraction)/black (no extraction) selectable Expansion and contraction filter Judgment: number of detections Output: number of detections/barycentric coordinate/area value/ projection width/main axis angle/circumference

Product name		Specification
Inspection function	Gray scale window	Max. 99/product type *Only when gray scale and differential processing are selected. Shape: rectangle/polygon (3 to 16 points)/ellipse; mask shape: rectangle/polygon/ellipse; 16 Upper and lower brightness levels can be set. Judgment: average gray scale value Output: average gray scale value
		Max. 99/product type *Only when gray scale and differentiation processing are selected. Shape: line/plane Projection/individual scan Light to dark; dark to light; designation of both possible Edge; leading edge and trailing edge; maximum derivative; multiple Depth/width designation function Judgment: number of detections Output: number of detections/edge detection coordinate
	Smart matching	Max. 99/product type *Only when gray scale and differentiation processing is selected. Shape: rectangle template; mask shape: rectangle/polygon/ellipse; 16 Difference setting possible Judgment: number of detections and number of differences Output: number of detections/detected coordinates/detected angle/correlation value/difference area value/number of differences
		Max. 2/product type Shape: rectangle ±180 degree detection possible Judgment: correlation Output: detected coordinate/detected angle/correlation
Numerical computation	Max. 99/product type 4-operation computation/ $\sqrt{\quad}$ /arc tangent/distance between 2 points/ case arc/Sin/Cos/absolute value of difference Possible to quote output of each inspection function. Reference previous data.	
Judgment output	Max. 99/product type NOT/AND/OR/XOR/case arc Image storage condition setting/general judgment condition setting/ output setting	
Data monitor	Max. 50/product type Data can be displayed in chart format when running. Title input or numerical calculation results, judgment output results, statistical results and product numbers can be quoted. External output settings of quoted items Upper and lower limit values of numerical computations can be changed from the chart while running.	
Statistics	Max. 16 per product type Numerical calculation and judgment output results can be quoted. The following can be calculated: number of scans, number of OK results, number NG (no-go) results, OK average, OK dispersion, max. value, min. value, and range. Quoting is possible to the data monitor.	
Operation data	Max. 4/environment Quoting to numerical computation is possible. Comment input is possible	
Marker	Max. 8/product type Graphic display on screen while running (rectangle/circle and ellipse/straight lines)	

Product name		Specification
External I/O	Serial	RS232C: 2 channels (max. speed 115,200 bps) Input: start/product type switching/camera display switching/ template re-registration/CompactFlash restore/reference of numerical computation upper and lower limits and changes/data storage/statistical initialization/reference and change of binarization level/reference and change of gray scale edge threshold value Output: judgment output and quoted data from data monitor Computer link support: Matsushita Electric Works' FP series and Mitsubishi's A, Q and FX series/Omron's C, CV and CS1 series/ Allen-Bradley's SLC500 series
	Parallel	Input: 13 points; output: 14 points; removable screw-down terminal block Input: start, product type switching, camera display switching, template re-registration Output: ready/error/flash/judgment output data
	Ethernet	Ethernet: 1 channel Output: judgment output, data quoted from data monitor (TCP/IP) Setting data and image backup, restore, documentation of setting data (AXTOOL)
	CompactFlash	Compact flash: 1 slot Output: judgment output and data quoted from data monitor (text file) Setting data, image backup/restore, screen hard copy
Other	Display function	Transparent menu Output status monitor Reference coordinate display (quoting to numerical computation possible) Numerical setting of set color and center color display Checkers with NG (no-go) results displayed with different color
	Movement at once	Checker movement all at once is possible for each position and rotation adjustment group.
	Screen storage	Max. 16 images/camera Each time/storage possible by judgment result Test execution possible with saved images. Display of date saved. Function to keep last image to be saved displayed.
	Setting help	White balance setting Focusing/aperture adjustment (only when gray scale processing is selected) Parallel monitor
	Calendar	Calendar data added to saved images
	Password	Password function for moving between setting modes