

## Part Nos. and Specifications

## Part Nos.

Product Name	Specification	Part No.	
PV310 Controller	Language: English/ Japanese selectable 24 V DC, NPN output	ANPV0310EDN	
High-Speed Random Camera (C Mount)	progressive support (CE version)	ANM831	
Standard Camera	with 3 m cable	ANM832	
	with 3 m cable (CE version)	ANM832CE	
	with 30 cm cable	ANM83203	
High-Speed Random Camera Cable	3 m	ANM84303	
	3 m (CE version)	ANM84303CE	
Ultra-Compact Camera (coming soon)	12-mm diameter	ANPVCA1012	
Camera Extension Cable	2 m extension: Total 5 m	ANM84002A	
	7 m extension: Total 10 m	ANM84007A	
	12 m extension: Total 15 m	ANM84012A	
	17 m extension: Total 20 m	ANM84017A	
	2 m extension: Total 5 m (CE version)	ANM84002ACE	
	7 m extension: Total 10 m (CE version)	ANM84007ACE	
PV310 Camera Switching Unit	12 m extension: Total 15 m (CE version)	ANM84012ACE	
	17 m extension: Total 20 m (CE version)	ANM84017ACE	
	Supports standard camera and high-speed random camera	ANPV3700	
	VGA Monitor	With keypad connector Without keypad connector	ANMX8300 ANMX8301
Kit 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	
	Controller Mounting Brackets	Brackets for mounting VGA monitor on the controller	ANMX835
	Monitor Cable	Cable length: 0.5 m (for single-unit mounting)	ANMX83310
		Cable length: 1 m	ANMX83311
		Cable length: 2 m	ANMX83312
		Cable length: 3 m	ANMX83313
	(With keypad controller) Keypad Cable for Connection to Main Unit	Cable: 0.5 m	ANMX83330
		Cable length: 1 m	ANMX83331
		Cable length: 2 m	ANMX83332
Cable length: 3 m		ANMX83333	
CS Mount Lens		f2.8 CS mount compact lens	ANM8828
		f2.8 CS mount compact lens with lock	ANM88281
	f4 CS mount compact lens	ANM8804	
	f4 CS mount compact lens with lock	ANM88041	
	f8 CS mount compact lens	ANM8808	
	f8 CS mount compact lens with lock	ANM88081	
C Mount Lens	f6.5 C mount lens with lock	ANB842L	
	f8.5 C mount lens with lock	ANB843L	
	f16 C mount compact lens with lock	ANB845NL	
	f16 C mount super-compact lens with lock	ANM88161	
	f25 C mount compact lens with lock	ANB846NL	
	f25 C mount super-compact lens with lock	ANM88251	
	f50 C mount lens with lock	ANB847L	
	f50 C mount compact lens	ANM8850	
	f50 C mount super-compact lens	ANM88501	
	Adapter Ring	5 mm	ANB84805
0.5/1/5/10/20/40 mm		ANB848	
Operation Keypad	with 2 m cable	ANM85202	
	with 3 m cable	ANM85203	
	with 2 m cable (CE version)	ANM85202CE	
	with 3 m cable (CE version)	ANM85203CE	
COM Port Cable	for connection to PC (D-SUB: 9 pins): 3 m	ANM81103	
	for connection to PLC (discrete-wire cable): 3 m	ANM81303	

## General Specifications

## Controller: ANPV0310EDN

Item	Specification
Rated Operating Voltage	24 V DC
Operating Voltage Range	21.6 to 26.4 V DC (including ripples)
Rated Current Consumption	0.7 A max. (1 camera) 0.9 A max. (2 cameras)
Ambient Temperature (in use)	0 to 50 °C (no freezing or condensation)
Storage Ambient Temperature	-20 to +60 °C (no freezing or condensation)
Ambient Humidity (in use and storage)	35 to 75% (at 25 °C with no freezing or condensation)
Noise Immunity	1000 V pulse width 50 ns/1 μs (using noise simulator method)
Vibration Resistance	10 to 55 Hz, 1 cycle/1 min. Double amplitude of 0.75 mm. 30 min. each in X, Y and Z directions
Shock Resistance	196 m/s <sup>2</sup> , 5 times each in X, Y and Z directions
Weight	Approx. 450 g

## Camera Switching Unit: ANPV3700

Item	Specification	
Functions	Camera Switching	2-camera input - 1-camera output (Switching by external signal input/Manual switching)
	Camera Image Split ANM832 (CE) only	2-camera input - 1-camera output of top/bottom split images/ 2-camera input - 1-camera output of left/right split images
External Switching Signal Input	1 input, photo-coupler bidirectional input supported, 5 to 24 V DC	
DIP Switch Setting	LOCAL/REMOTE, NORMAL/DIV, A/B, Top-Bottom/Left-Right	
Rated Voltage Range	12 V DC (supplied from the MICRO-IMAGECHECKER unit)	
Weight	Approx. 150 g (Main unit only)	

Included items: 1 connection cable (30 cm), 2 ferrite cores, and 1 installation manual  
The operation condition requirements are the same as those for the PV310 Controller.

## Functional Specifications

## Functional Specifications

Item	Specification	
Settings Data Storage Capacity	Approx. 4 MB	
Frame Memory	512 x 480 (pixels)	
Operation Environment	Menu selection by dedicated keypad (selection of Japanese/English) Key Emulation Menu selection by serial command	
Input/Output	Cameras	2 Standard cameras, high-speed random cameras, or ultra-compact cameras (standard camera: max. 4 cameras when using camera switching unit)
	Monitor Output	Color VGA output
	Memory Card	Compact Flash: 1 slot
	Serial	RS-232C x 1 channel
	Parallel	Input: 13 points; output: 14 points; removable screw-down terminal block
	Keypad Input	1 Connector for dedicated keypad (ANM8520*)
Tools	Ethernet: 1 channel	

## Image Processing Functional Specifications

Item	Specification
Monitor Display	Full color VGA/gray scale image/ binary image Two-screen compressed display: side-by-side display (when gray scale image selected) through/memory, data monitor, marker, + information display region (128x480)
Number of Connected Cameras	Max. 2 cameras (max. 4 cameras with a camera switching unit)
Processing Method	Gray scale processing - Binary processing
No. of Product Types	Max. 64 types (depends on settings data capacity)
Inspection Functions	Max. 99 checkers/product type • Position adjustment, rotation adjustment, binary window • Gray scale window, binary edge, gray scale edge • Feature extraction, smart matching, contour matching, scratch detection
Numerical Computation	Max. 96 functions/product type Operators: 4-operation calculation, $\sqrt{\quad}$ , arc tangent, distance between 2 points, parenthesis, sin, cos, absolute value of difference
Judgment Output	Max. 96 functions/product type Operators: NOT/AND/OR/XOR/parenthesis
Statistics	Max. 96/product type Calculation of no. of passes/no. of fails/pass average/pass distribution/ pass max. value/pass min. value/pass range (for judgment output no. of passes/no. of fails only)
Data Monitor	Max. 50/product type Displayed on screen in table form during RUN Title input and substitution of numerical computation results, judgment output results, statistical results and product numbers possible

Item	Specification	
Operation Data	Max. 4/environment Substitution in numerical computation possible	
Marker	Max. 8/product type Graphic display on screen during RUN	
External Input/Output	Serial	RS-232C=1ch (max. speed 115200 bps) - Input: start/product type switch/camera display switch/template re-registration/CompactFlash settings restore/reference to and alteration of upper and lower values for numerical computation/reference to and alteration of binary level/reference to and alteration of gray scale edge thresholds/data storage/length input for input commands for statistics initialization (for PLC) - Output: output (no. of inspections/judgment output/numerical computations/statistics) synchronous or asynchronous to inspection start trigger - Computer link support: Supported models: Matsushita Electric Works PLC OMRON Corporation - C, CV and CS1 series Mitsubishi Electric Corporation - A, Q and FX series Allen-Bradley - SLC500 series
	Parallel	Input: 13 points; output: 14 points - Input: start/product type switch/camera display switch/template re-registration/data restore from Compact Flash - Output: ready/error/flush/image acquired/strobe/judgment output data/synchronous output (no. of inspections/judgment output/numerical computation/statistics) possible by handshake output
	Ethernet (1 channel)	- Output: no. of inspections/judgment output/numerical computations/statistics/settings data/image backup and restore/conversion to documentation for settings data (Vision AXTOOL)
Other	CF Card (1 slot)	- Output: no. of inspections/judgment output/numerical computations/statistics/settings data/image backup and restore/screen dumps
	Display Functions	Transparent menu/parallel output status monitor/reference coordinate display/checkers with fail results highlighted in different color
	Collective Movement	Collective movement of set checkers in units of position/rotation adjustment groups
	Image Storage	Max. 16 images/camera Each time/storage possible according to judgment result Test runs available on stored images Display of date and time saved Function to maintain display of last image saved
	Setting Help	Focusing/aperture adjustment/parallel monitor/lighting adjustment/gray scale profile display
Calendar	Calendar information added to stored images File time stamp	
Password	Password function for when moving between settings modes	