Watanabe Electric Industry
17th OCT 2024
Ver.3

○A5000 / A5000-S1 Specification comparison table ①

Content			A5000 (Current Product)	A5000-xx-S1 (NEW product)
Photo				 (Reference)
Model code			**A5①②③-④** ①= Power supply ②= Display (Single / Multi) ③= Option output ④= Input type	**A5①②③-④-S1 (*Add `-S1`)** ①= Power supply ②= Display (Single / Multi) ③= Option output ④= Input type
Display			4 digit ±9999	←
LED			Main Monitor : 14.2mm LED Red, Sub Monitor : 8mm LED Green	←
Input	Input range code		**Input range** / **Input type**	**Input range** / **Input type**
			01 DC voltage (±99.99mV)	←
			02 DC voltage (±9.999mV~±600V)	←
			03 DC current (±9.999mA~±999.9mA)	←
			04 AC voltage AVG (99.99mV~9.999V)	←
			05 AC voltage AVG (99.99V~600V)	←
			06 AC voltage RMS (99.99mV~9.999V)	←
			07 AC voltage RMS (99.99V~600V)	←
			08 AC current AVG (9.999mA~999.9mA)	←
			09 AC current AVG (5A)	←
			10 AC current RMS (9.999mA~999.9mA)	←
			11 AC current RMS (5A)	←
			12 Resistance (99.99 to 99.99 k)	←
			13 Temperature (Thermocouple)	←
			14 Temperature (RTD)	←
			15 Frequency (Open collector, Logic, Magnet)	←
			16 Frequency (50 to 500 Vrms)	←
			17 Strain gauge	←
			18 1~5 V, 4~20 mA	←
			19 1~5 V, 4~20 mA with sensor power supply	←
	AC input specifications Code 04~11	Frequency range	40Hz~1kHz *50/60Hz for 26 range (AC0~5A input type)	
		Low cut	99 digit (0 fixed display)	**99 digit (0 fixed display) *Able to change by setting**
		Response time	Approx. 1s	←
	Resistance input specifications Code 12	Wiring	2-wire or 4-wire	←
		Open Circuit Voltage	Approx. 5V	←
		Change 2-wire / 4-wire	In case 2-wire system, short between 1-3 and 2-4. Or Change ST1 socket of input unit board inside to 2 by assembly	In case 2-wire system, short between 1-3 and 2-4. **(*Cannot change by socket of input board inside by assembly)**
	Thermocouple input specifications Code 13	Internal resistance	50 Ω or less	←
		Burn out alarm	- - - - display	←
		Cold junction compensator accuracy	±2°C (10~40°C)	←
		Linearizing method	Digital linearizing	←
	RTD input specifications Code 14	External resistance	10 Ω or less per 1 line	←
		Current for resistance	Approx. 1mA	←
		Linearizing method	Digital linearizing	←
		Burn out alarm	When A or B is disconnection, it is displayed as OL, and when C is disconnection, it is displayed as ----.	←
	Frequency (Open-collector/Logic/ Magnetic) input specifications Code 15	Input voltage level	Open collector: L: 1V or less (5V 4.7kΩ pull-up) Logic: L: 1V or less H: 2.5 to 15V Magnetic: 0.3 to 30V p-p	←
		Maximum allowable input	Open collector: 15V Logic: 15V Magnetic: 15V	←
		Sensor power	DC15V±10% (within 20mA)	←
		Prescaling	0.001~5	**0.001~9.999**
		Division	1~100	**1~9999**
		Duty ratio	50%	←
	Frequency (AC Voltage) input specifications Code 16	Input voltage level	50Vrms~500Vrms	←
		Prescaling	0.001~5	**0.001~9.999**
		Division	1~100	**1~9999**
		Duty ratio	50%	←
	Loadcell input specifications Code 17	Sensor power supply	DC5V ±5% 15mA or DC10V ±5% 30mA	←
Common specifications	Display		Main monitor: Red 7-segment LED (character height 14.2mm) Sub monitor: Green 7-segment LED (character height 8mm) Judgment monitor: HI/GO/LO Function monitor: ME/PH/DZ/RE	←
	Polarity display		Automatically displays "-" when the calculation result is negative	←
	Display range		-9999 to 9999	←
	Scaling		Offset: ±9999 Full scale: Set within the range of ±9999 *Temperature input specifications are fixed to scale (cannot be set) *Scaling is adjusted by preset and division settings for frequency input specifications *Scaling is adjusted by calibration for load cell input specifications	←
	Overrange warning		Displays o.L or -o.L	←
	Decimal point		Can be set arbitrarily *Temperature input specifications are fixed for each range	←
	Zero display		Leading zero suppression	←
	Operating temperature and humidity range		0~+50°C 35 to 85% RH (non-condensing)	←
	Power supply		AC100~240V ±10% or DC9~60V	←
	Power consumption		100VAC±10% : 7VAmax, 240VAC±10% : 12VAmax, 7W max (DC power supply)	←
	Dimensions		48 (H) x 96 (W) x 146.5 (D) mm	←
	Weight		Approx. 450g	←

Content			A5000 (Current Product)	A5000-xx-S1 (NEW product)
Common specifications	Voltage resistance		**AC power supply:** Power supply terminal - input terminal/each output terminal AC2000V 1 minute **DC power supply:** Power supply terminal - input terminal/each output terminal DC500V 1 minute **Common: Input terminal - each output terminal** Analog output terminal - communication terminal DC500V 1 minute Case - each terminal AC2000V 1 minute	**AC power supply:** Power supply terminal - input terminal/each output terminal **AC3000V** 1 minute **DC power supply:** Power supply terminal - input terminal/each output terminal DC500V 1 minute **Common: Input terminal - each output terminal** Analog output terminal - communication terminal DC500V 1 minute Case - each terminal **AC3000V** 1 minute **Between comparison output terminals DC500V for 1 minute**
	Insulation resistance		500VDC, 100MΩ or more on the above terminals	←
	Conformity Directive		EN61326-1, EN61010-1, EN IEC 63000	**EMC(2014/30/EU), LVD(2014/35/EU)** **RoHS(2011/65/EU,(EU)2015/863) (CE model only)**
	Sampling speed		Approx. 80ms~10s *For RTD measurements, approx. 160ms~ *For thermocouple measurements, approx. 480ms~	←
	Moving average count		Set from None/2/4/8/16/32	←
	Display update cycle		Approx. 80ms (Depends on the sampling speed setting)	←
	Sensor power supply		Supported for frequency & load cell & Process (code 19) input types	←
	Standard accessories		Unit seal 2	←
	Optional accessories		Front panel cover (WP, WP-3)	←
	Unit replacement (assembly function)		Unit replacement and assembly is possible	**Unit replacement is not possible and disassembly is prohibited**
External control	Hold		Hold the display at any time	←
	Digital zero		Set the display to zero at any time	←
	Peak hold		Hold the max. value/min. value/max.value - min. value	←
Output	Relay output	Number of outputs	3 points (HI/GO/LO)	←
		Contact rating	AC240V 8A (resistive load), DC30V 8A (resistive load)	←
		Mechanical life	20 million times or more	←
		Electrical life	50,000 times or more (resistive load)	←
		Judgment value setting	-9999~9999	←
		Hysteresis	Can be set from 1 to 999 digits for each judgment value	←
		Operation speed	Maximum 10 ms	←
	Analog output	Range	DC0~1V / DC0~10V / DC1~5V / DC4~20mA	←
		Accuracy	±0.5%fs	**±0.2%fs**
		Conversion method	PWM conversion method	←
		Resolution	13-bit equivalent	←
		Scaling	Digital scaling	←
		Response time	Approx. 0.5s (0~90%)	←
	RS-232C	Synchronous system	Asynchronous mode	←
		Communication method	Full duplex	←
		Communication speed	38400 / 19200 / 9600 / 4800 / 2400bps	←
		Start bit	1bit	←
		Data length	7bit, 8bit	←
		Parity bit	None, Odd, Even	←
		Error detection	None	←
		Stop bit	1bit, 2bit	←
		Chraracter code	ASCII	←
		Transmission control procedure	Non-procedure	←
		Signal name	TXD, RXD, SG	←
		No. of connectable units	1 unit	←
		Line length	15m	←
		Delimiter	CR + LF / CR	←
	RS-485	Synchronous system	Asynchronous mode	←
		Communication method	2-wire half duplex	←
		Communication speed	38400 / 19200 / 9600 / 4800 / 2400bps	←
		Start bit	1bit	←
		Data length	7bit, 8bit	←
		Parity bit	None, Odd, Even	←
		Error detection	BCC checksum	←
		Stop bit	1bit, 2bit	←
		Chraracter code	ASCII	←
		Transmission control procedure	Non-procedure	←
		Signal name	Non-inverting (+), inverting (-)	←
		No. of connectable units	31 units	←
		Line length	Max. 500m (Total) *Not more than 30m in case CE compliance	←
		Delimiter	CR + LF / CR	←
		Terminating resistor	Terminating resistor ON/OFF by changing jumber socket of output unit board inside by assembly	**200 Ω terminating resistor is effective when terminals 21 & 22 are shorted.**
Additional funtions (Software updates)	Low cut function		None (AC input type had Dead zone 0~99 digit instead, but cannot change range. 0~99 fixed to 0)	**A function that displays 0 within the range of "± setting value" has been added to help prevent display fluctuation. (AC input type Dead zone will change to Low cut, able to change by setting.)**
	Simulation output function		None	**Analog and comparison simulated outputs make it easy to check system operation without wirings or actual input.**
	Communication test function		None	**RS232C/RS485 transmission and reception tests make it easy to set up communications and check operation.**
	Change of how to do initialization		By turning ON the power while pressing all key (enter/mode/shift/increment), all parameters can be initialized.	**Can easily initialize by selecting menu.**
	Teach function		None	**On the scaling setting screen, the current input value can be reflected in the setting value by operating two keys.**
	Expanded scaling settings		PS (Prescale) 0～5.000 PPR (Division) 1～100	**The frequency input scaling setting range has been expanded, making it easier to set the intended display value.** PS (Prescale) 0.001～9.999 PPR (Division) 1～9999
	Setting menu change method		At single display type onlw, Change to next setting parameter after 1 second automatically.	**No Automatically change. Change setting parameter by M key.**
	Initial setting of Analog output range change		Initial setting of Analog output range ：OFF	**Initial setting of Analog output range ：0~1V**

*Specification of A5000-xx-S1 is subject to change without notice