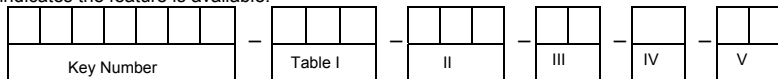


For detailed instructions see UDA2182 Universal Dual Analyzer Product Manual 70-82-25-119.

Step 1. Model Number Interpretation

Write your analyzer model number in the boxes. Then refer to Tables I, II, III, IV, and V, and circle the corresponding options to identify your analyzer's features. A dot indicates the feature is available.



Key Number - Dual Input Analyzer	Stock Part No.	Selection	Availability
Analytical Analyzer	50003691-501	UDA2182	↓

TABLE I - Channel Inputs

Channel 1 Input		Stock Part No.	Selection	Availability
None	N/A	NN1	•	
pH/ORP	51453313-501	PH1	•	
Conductivity	51453316-501	CC1	•	
Dissolved Oxygen ppm	51453319-501	DM1	•	
Dissolved Oxygen ppb	51453319-502	DB1	•	

TABLE II - Channel Inputs

Channel 2 Input		Stock Part No.	Selection	Availability
None	N/A	NN2	•	
pH/ORP	51453313-501	PH2	•	
Conductivity	51453316-501	CC2	•	
Dissolved Oxygen ppm	51453319-501	DM2	•	
Dissolved Oxygen ppb	51453319-502	DB2	•	

TABLE III - Outputs and Relays

Additional Analog Output & Relays		Stock Part No.	Selection	Availability
No Additional Analog Output or Relays	N/A	NN	•	
Additional 4-20 mA/0-20 mA output & 2 additional relays	51453328-501	C3	•	

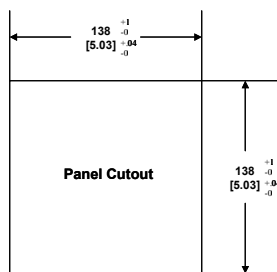
TABLE IV - Communications

Communications		Stock Part No.	Selection	Availability
None	N/A	N	•	
Modbus RTU (RS-485) (Future Release)	N/A	M	•	

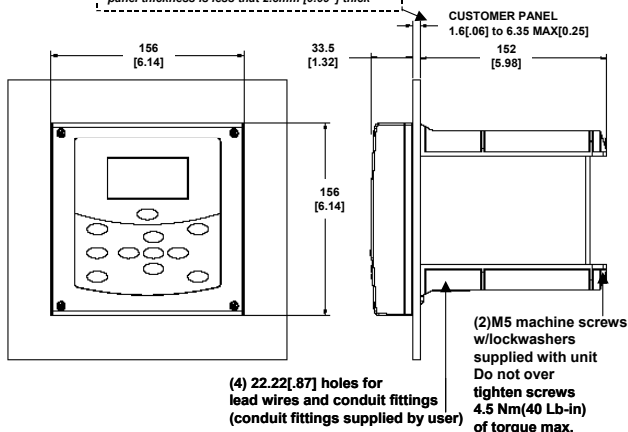
TABLE V - Options

Option		Stock Part No.	Selection	Availability
Mounting Hardware	None (Panel mounting only) Pipe and wall mounting hardware	N/A 50001023-501	0 ___ P ___	• •
Instruction Books	CD Only (English) Additional Paper Copy: English	50003501-501 70-82-25-119	_ 0 ___ _ E _ _	• •
Certificates	None Calibration & Conformance	N/A N/A	_ _ 0 _ _ _ C _	• •
PID Control	No Yes	N/A N/A	_ _ _ 0 _ _ _ C	• •

Step 2. Panel Mounting Dimensions



Customer will need to provide a rear panel support plate to maintain NEMA4 protection if primary panel thickness is less than 2.3mm [0.09"] thick



The analyzer can be mounted Vertically or Horizontally on a pipe. Use the bracket and hardware supplied in the mounting kit.

The analyzer can be mounted on a wall. Use the bracket and hardware supplied in the mounting kit.

Each unit has (4) 22.22mm[.87"] dia. holes on the bottom of the unit for lead wires and conduit fittings. The user supplies the conduit fittings.

ATTENTION - When installing the unit, you must select fittings that are agency approved (UL/CSA) to insure NEMA 4 integrity

Step 3. Wiring Diagrams



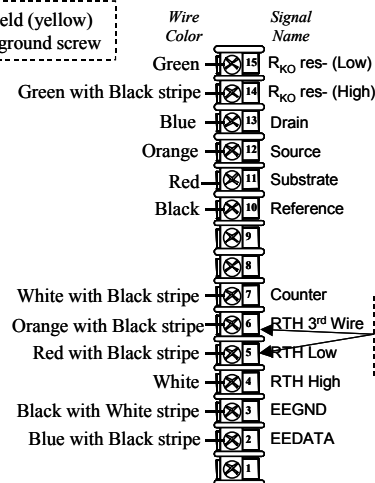
WARNING

- Qualified personnel should perform wiring only.
- A disconnect switch must be installed to break all current carrying conductors. Turn off power before working on conductors. Failure to observe this precaution may result in serious personal injury.
- An external disconnect switch is required for any hazardous voltage connections to the relay outputs.



Durafet III

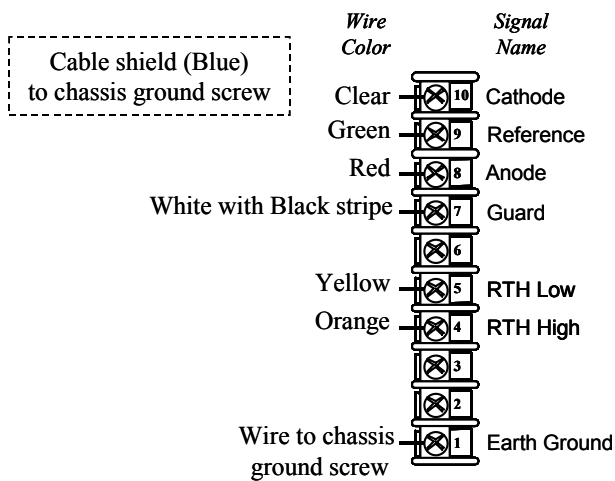
Cable shield (yellow) to chassis ground screw



Remove pre-wired jumper at terminals 5 & 6

Step 3. Wiring Diagrams (continued)

Dissolved Oxygen

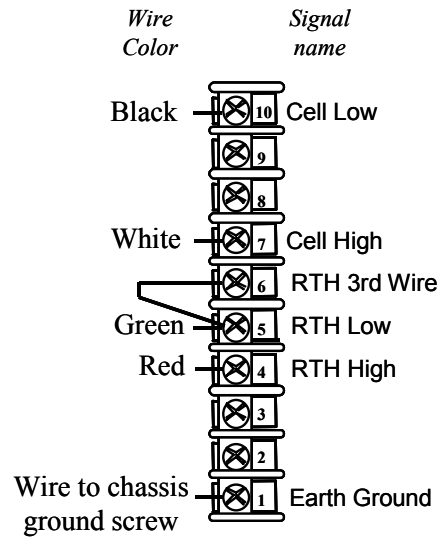


Some cables have connectors on the leads. Cut off the connectors, skin and tin the leads and then wire to the screw terminals on the boards

Refer to the Product Manual 70-82-25-119 for connecting and disconnecting sequences

Conductivity

4 Wire Cond. 18AWG (Has no shield)



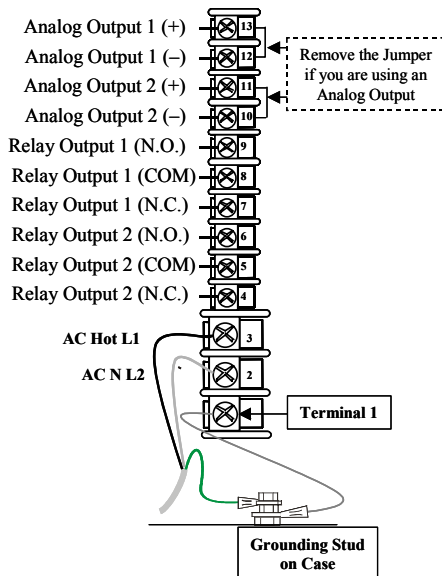
Power Supply/Analog Output/Relay Output Card



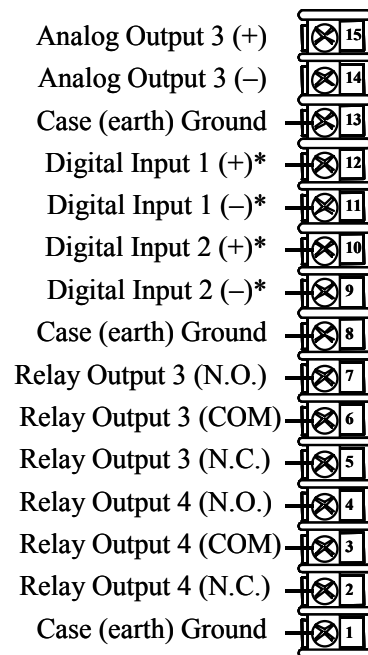
WARNING Turn power off at mains before installing AC Power Wiring.



WARNING The ground terminal must be connected to a reliable earth ground for proper operation and to comply with OSHA and other safety codes. If metal conduit is used, connect a bonding wire between conduits. Do not rely upon the conductive coating of the instrument case to provide this connection. Failure to observe this precaution may result in serious personal injury.



Option Card




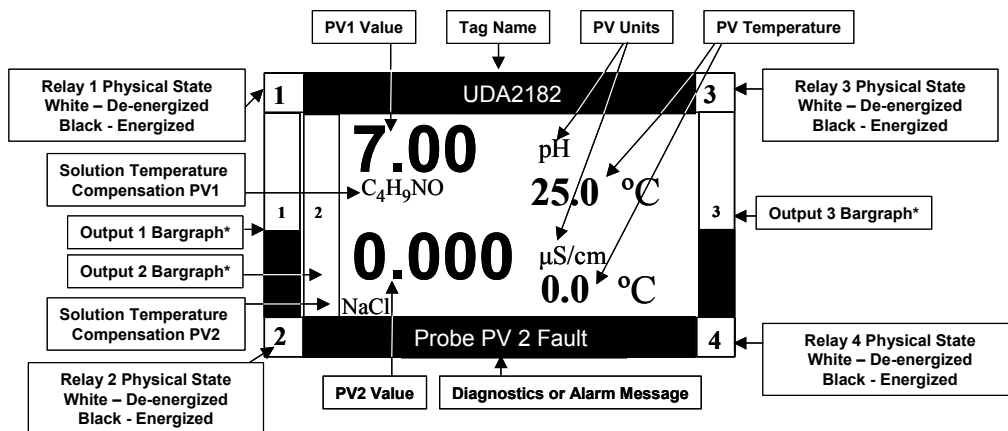
* Contact Closure only

Step 5. Key Navigation and Display

Key	Function
Display	<ul style="list-style-type: none"> When process values are on display: Use DISPLAY to cycle between PV Displays, Control Displays, and Status Displays. In Setup mode, calibration mode, or calibration edit mode, use DISPLAY to abort current mode and return to the last accessed online display.
Hold	<ul style="list-style-type: none"> Engages hold of analog and digital outputs at their current values and any relays assigned to alarm events or control are deactivated.
Setup	<ul style="list-style-type: none"> Selects the configuration main menu when online, in calibration mode, or at a calibration submenu.
Exit	<ul style="list-style-type: none"> In configuration menu, exits submenu to parent menu. If at configuration main menu, selects current online display. In configuration edit mode, aborts editing of current parameter. When online, it acknowledges current alarm event to stop the flashing of the relay indicator and status message area.
Calibrate	<ul style="list-style-type: none"> Selects the calibration main screen when online, in configuration mode or at another calibration screen.
▲▼	<ul style="list-style-type: none"> When a Setup configuration menu or configuration edit screen is on display: Use Up/Down keys to highlight a different item. In configuration edit mode, it either selects the parameter character or numerical digit to change or selects an enumerated parameter value: Use Up/Down key to increment the value of the digit at the cursor. Increases/decreases the selected parameter value. When in display mode, use up/down keys to adjust the contrast on the screen.
◀▶	<ul style="list-style-type: none"> In configuration edit mode, selects the character or digit to change. In calibration mode, it selects the next or previous calibration screen. In Display mode, It selects a single or dual display on a unit with dual input.
Enter	<ul style="list-style-type: none"> In configuration menu, selects edit mode for selected parameter. In configuration edit mode, saves edited parameter selection or value. In calibration mode, selects parameters to reset and the next calibration screen

Two Input Display




Press . You will see:










***On the display, the bargraphs are the outputs in Engineering Units, the corner annunciators are the physical relay states.**

Single Displays

For **single displays** on a two input unit,

- Press  to display a single display for Input 1.
- Press  again to display a single display for Input 2.
- Press  again to return to a Dual Display.

Step 6. Basic Configuration Procedure

Step	Operation	Press	Result
1	Enter Set Up Mode		The Main Menu is displayed. Use ▲▼ to scroll and select a setup group (Example – Inputs). The selection will be highlighted.
2	Enter Set Up Group		The Setup group selected is shown at the top of the screen and will display all the selections within that group. Press ▲▼ to highlight the desired selection.
3	Enter the selection		The list of parameters for the selection will be displayed. Press ▲▼ to highlight the desired selection.
5	Change the Value or Selection	 ▲▼	The current value for the parameter is displayed. Depending on whether you are changing a text string or a numerical value, follow the "General Rules for Editing" in section 6.3.1 of the manual to make the changes
6	Enter the Value or Selection		Enters value or selection made into memory after another key is pressed. Repeat the procedure for changing any parameter for any group.
7	To Abort the Changes Made		Any changes made to a parameter value will revert to the original value before editing.
8	Exit Setup Mode		Until you see the main Setup screen.

Step 7. Configuration Record Sheet

Enter the value or selection for each prompt on this sheet so you will have a record of how your controller was configured.

Sub-menu	Parameter	Selection or Range of Setting	User Selection
Inputs Configuration			
Input 1 or 2 pH/ORP	PV Type	pH Glass; pH HPW; pH Durafet; or ORP	
	Range	Read Only	
	PV Reset	Off; Enable - Resets all Output and Control ranges associated with that PV	
	Temp Input (ORP only)	Disable; Enable to allow "Temp Type" selection	
	Temp Type	8550Ω Thermistor; 1000Ω Resistance Temperature Detector; or Manual	
	Temp Value	-10.0 to 110.0°C or 14.0 to 230.0°F (Value for "Manual" selection at "Temp Type) See "Maintenance" set up group for units selection	
	Solu Temp Comp (Not ORP)	None; Custom; H ₂ O; NH ₃ ; PO ₄ ; or C ₄ H ₉ NO	
	Solution pH/°C (Not ORP)	(Solu Temp Comp = Custom) 0.000 to -0.050	
	Bias	-99999 to 99999	
	Failsafe	-99999 to 99999	
	Filter Time	0 to 120	
Input 1 or Input 2 Conductivity	PV Type	Conduc μS; Conduc mS; Concentratn; TDS ppb; TDS ppm; TDS ppt; or Resistivity (Availability dependant on Cell Constant selection)	
	Cell Constant	0.01; 0.1; 1.0; 10.0; 25.0; or 50.0	
	Range	Read Only	
	PV Reset	Off; Enable - Resets all Output and Control ranges associated with that PV	
	Cal Factor	0.850 to 1.150	
	TDS Factor (only PV Type TDS)	0.10; 1.000; or 2.000	
	Temp Type	8550Ω Therm; 1000Ω RTD; Manual	
	Temp Value	-10.0 to 110.0°C or 14.0 to 230.0°F (Value for "Manual" selection at "Temp Type) See "Maintenance" set up group for units selection	
	Solu Temp Comp	None; Custom; H ₂ O; NH ₃ ; PO ₄ ; C ₄ H ₉ NO; HCl; NaCl; H ₂ SO ₄ ; or NaOH	
	Wire Len Units	Feet or Meters	
	Wire Len Feet	0 to 1000 ft	
	Wire Len Meters	0 to 304.80	
	Wire Size Units	AWG or Sq mm	
	Wire Size AWG	16 AWG; 18 AWG; 20 AWG; or 22 AWG	
	Wire Size Sq mm	0.33 to 2.08	
	Bias	-9999.00 to 9999.00	
Failsafe	0.0 to 2000		

Sub-menu	Parameter	Selection or Range of Setting	User Selection
	Filter Time	0 to 120	
Input 1 or Input 2 Dissolved Oxygen	PV Type	Pct Sat - percent saturation; DO Concentration	
	Range	Read Only	
	PV Reset	Off; Enable - Resets all Output and Control ranges associated with that PV	
	Temp Type	5000Ω Therm; 1000Ω RTD; Manual	
	Temp Value	-10.0 to 110.0°C or 14.0 to 230.0°F (Value for "Manual" selection at "Temp Type") See "Maintenance" set up group for units selection	
	Salinity Type	Manual; Conduc Input	
	Salinity ppt	0.00 to 40.00ppt ("Manual" Salinity type only)	
	Pressure Type	Manual; Sensor	
	Pressure mm Hg	500.0 to 800.0 (Manual Pressure type only)	
	Bias	0.000 to 20.00 PPM (If PPM board installed) 0.000 to 2000 PPB (If PPB board installed)	
	Failsafe	0.000 to 20.00 PPM (If PPM board installed) 0.000 to 2000 PPB (If PPB board installed)	
	Filter time	0 to 120.0	
Outputs Configuration			
Output 1 Output 2 Output 3	Source	None; Input 1 PV; Input 1 Temp; Input 2 PV; or Input 2 Temp; Math 1; Math 2; Math 3; Math 4; Control 1; Control 2	
	High Range	-9999.00 to 9999.00	
	Low Range	-9999.00 to 9999.00	
	Slew Time	0.000 to 999.00	
	mA Range High	0 to 20	
	mA Range Low	0 to 20	
	mA Limit High	0 to 21	
	mA Limit Low	0 to 21	
Relays Configuration			
Relay Types	Relay 1 Type, Relay 2 Type, Relay 3 Type, Relay 4 Type	Digital Output Relay; Time Proportional Output Relay; Pulse Frequency Output Relay	
Digital Output Relay	Digital Source	None; Alarms 1 thru 4; Four Control Alarms; Logic 1 thru 4; Events 1 thru 4; Math 1 thru 4	
	Invert	Enable or Disable	
TPO - Time Proportional Output	Source	None; Input 1 PV; Input 1 Temp; Input 2 PV; or Input 2 Temp; Math 1 thru 4; Control 1 and 2	
	High Range	-99999 to 99999	
	Low Range	-99999 to 99999	
	Cycle Time	1 to 999 seconds	
	Min Off Time	0 to 999	
	Min On Time	0 to 999	
Pulse Frequency Output	Source	None; Input 1 PV; Input 1 Temp; Input 2 PV; or Input 2 Temp; Math 1 thru 4; Control 1 and 2	
	High Range	-99999 to 99999	
	Low Range	-99999 to 99999	
	Cycle Time	1 to 999 seconds	

Sub-menu	Parameter	Selection or Range of Setting	User Selection
Alarms Configuration			
Alarm 1; Alarm 2; Alarm 3 Alarm 4	Source	None; Input 1 PV; Input 1 Temp; Input 2 PV; or Input 2 Temp; Calc Value 1; Calc Value 2	
	Type (alarm action)	None; High; Low	
	Setpoint Value	0 to 99999.9	
	Latch	Disable; Enable	
	Alm Hysteresis	0.0 to 9999.99 %	
	On Delay	0 to 999 seconds	
	Event	None; Event 1; Event 2; Event 3; Event 4	
Math Configuration			
Math 1; Math 2; Math 3; Math 4	Source	None; Input 1 PV; Input 1 Temp; Input 2 PV; or Input 2 Temp	
	Type	None; Linear; Log; Square Root	
	High Range	-99999 to 99999	
	Low Range	-99999 to 99999	
	Filter Time	0 to 120 seconds	
Logic Configuration			
Logic 1; Logic 2; Logic 3; Logic 4	IN A Source	None; Alarm 1 thru 4; Four Control Alarms; Digital Input 1; Digital Input 2; Hold; Out 1 Fault; Out 2 Fault; Out 3 Fault	
	IN B Source	None; Alarm 1 thru 4; Four Control Alarms; Digital Input 1; Digital Input 2; Hold; Out 1 Fault; Out 2 Fault; Out 3 Fault	
	Type	None; AND; OR	
	Invert	None; IN A; IN B; or In A and B	
	Latch	Enable; Disable	
	On delay	0 to 999 seconds	
	Event	None; Event 1 thru 4	
Control Configuration			
Control Types	Control 1 or Control 2 Type	None; PID(optional); On/Off (standard)	
PID (optional)	PV High	-99999 to 99999	
	PV Low	-99999 to 99999	
	SP High Limit	-99999 to 99999	
	SP Low Limit	-99999 to 99999	
	Control Alg	PIDA; PIDB; Duplex A; Duplex B	
	Control Action	Direct; Reverse	
	Accutune	Disable; Enable	
	Fuzzy Logic	Disable; Enable	
	Use Prop Band	Disable; Enable	
	Use RPM	Disable; Enable	
	Gain or PB	Gain – 0.1% to 1000.0%; PB – 0.1 to 1000.0%	
	Rate	-0.035 to 10.000	
	Reset	-0.02 to 50	
	Tune Set 2	Disable; Enable	
	Gain or PB2	Gain – 0.1% to 1000.0%; PB – 0.1 to 1000.0%	
	Rate 2	-0.035 to 10.000	
	Reset 2	-0.02 to 50	
	Out High Limit	-5.00 to 105.0%	
	Out Low Limit	-5.00 to 105.0%	
	Power Mode	Last; Manual	
	Power Out	Failsafe; Last	
	Failsafe	-5.00 to 105.0%	
	Alm 1 SP1 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
Alm 1 SP1 Value	-99999 to 99999		

Sub-menu	Parameter	Selection or Range of Setting	User Selection
	Alm 1 SP2 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 1 SP2 Value	-99999 to 99999	
	Alm 2 SP1 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 2 SP1 Value	-99999 to 99999	
	Alm 2 SP2 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 2 SP2 Value	-99999 to 99999	
	Alm Hysteresis	0 to 100%	
On/Off	PV High	-99999 to 99999	
	PV Low	-99999 to 99999	
	SP High Limit	-99999 to 99999	
	SP Low Limit	-99999 to 99999	
	Control Action	Direct; Reverse	
	Out High Limit	-5.00 to 105.0%	
	Out Low Limit	-5.00 to 105.0%	
	Out Hysteresis	-5.00 to 105.0%	
	Power Mode	Last; Manual	
	Power Out	Failsafe; Last	
	Failsafe	-5.00 to 105.0%	
	Alm 1 SP1 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 1 SP1 Value	-99999 to 99999	
	Alm 1 SP2 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 1 SP2 Value	-99999 to 99999	
	Alm 2 SP1 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 2 SP1 Value	-99999 to 99999	
	Alm 2 SP2 Type	PV High; PV Low; Dev High; Dev Low; SP High; SP Low; Output High; Output Low; No Alarm	
	Alm 2 SP2 Value	-99999 to 99999	
Alm Hysteresis	0 to 100%		
Communication Configuration			
	Mode	Address; Setup	
	Address	0 to 255	
	Reset	Off; On	
Maintenance Configuration			
	SW Version	Read Only	
	Input 1 and Input 2 Type	Read Only	
	Language	English; Italiano; Deutsch; Francais; Espanol	
	Tag Name	0 to 21 Characters	
	Password	0000 to 9999 or AAAA to ZZZZ	
	Temperature Units	° C; ° F	
	Mains Frequency	60 Hz; 50 Hz	
	Display Test	Off; Enable	
	Keypad Test	Off; Enable	
	Output Level	Off; 0%; 25%; 50%; 75%; 100%; Low Limit; High Limit	
	Relay State	Off; Energized; De-energized	
	Unit Reset	Off; Enable	