

Technical Specifications and Wiring Diagrams

Weight and Dimensions		
KP-8IN-1REL Weight	861,83 grams (1.90 lbs)	
TP-8IN-1REL Weight	861,83 grams (1.90 lbs)	
TR-8IN-1REL Weight	816.47 grams (1.80 lbs)	
Enclosure dimensions	Height	178 mm (7 inches)
	Width	229 mm (9 inches)
	Depth	76.2 mm (3 inches)
Clearance around the enclosure	Top	152mm (6 inches)
	Bottom	152mm (6 inches)
	Sides	152mm (6 inches)

Safety Ratings	
Inputs:	
KP-8IN-1REL Supply Input	24/28Vdc, 5.62W
TP-8IN-1REL Supply Input	24/28Vdc, 4.72W
TR-2IN-1REL Supply Input	24/28Vdc, 4.3W
Outputs:	
Motor/inductive loads	5 A MAX
	(Nb of Units = Max current rating divide by the max current of the fan multiply by its service factor will give you the number of this fan type the relay can drive)
	For example, 5A / (2.5 A * 1.5 SF) = 1.3, relay can drive up to 1 fan Minimum load of 0.2A
	50/60Hz 120Vac ,1/6HP (124W)
Resistive loads (electric heating element)	150Vac Max. / 28/24 VAC/DC, 5A max. Minimum load of 0.2A
Tungsten loads loads (incandescent and heat lamp)	120 Vac, 2A max.
	Minimum load of 0.2A
DC loads	24Vdc, 5A max.
	(The current reading is not available in DC) (Minimum load of 0.2A )

Telecommunication Ratings for RFID Module (Only on KP-8IN-1REL and TR-2IN-1REL)		
Protocol Handling	ISO15693	
Output Power	+20 dBm (100 mW)	
System Clock Frequency Output	13.56MHz	
Equipment type (ETSI EN 301 489-3)	III	Others : Identification/Access control
Class type (ETSI EN 301 489-3)	2	(Medium reliable SRD communication media; e.g. causing inconvenience to persons, which cannot simply be overcome by other means)

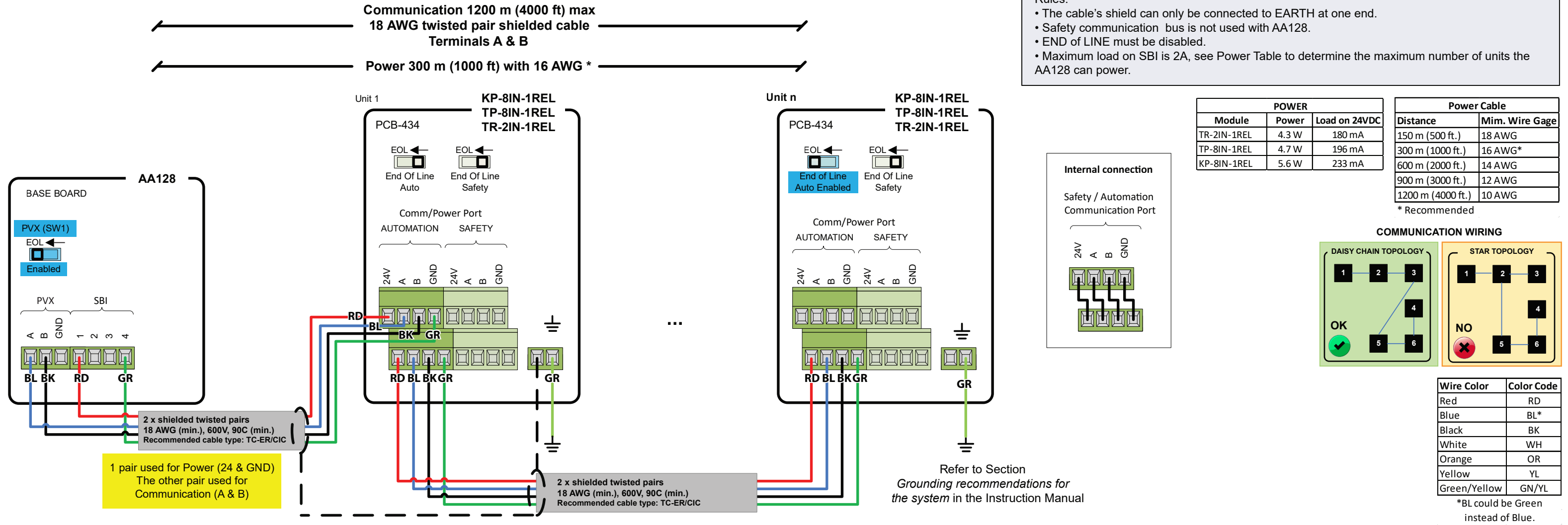
Functional Ratings	
Inputs:	
Temperature	Compliant to GSIE temperature probes , Accuracy of ±0.1°C in a normal operation, Allowable loss of performance in a noisy environment: Accuracy of ±0.65°C from initial reading with a fixed resistor of 1% precision used for testing purpose.
Analog 0-5 Volts	Sensor must be able to drive a 2k Ohms load, which means the sensor must drive at least 2.5mA to ensure correct readings. Accuracy of ±30mV in a normal operation, Allowable loss of performance in a noisy environment: Accuracy of ±80mV from initial reading with a voltage source of 1% precision used for testing purpose.
Analog 4-20mA	Sensor must be able to drive a 120 Ohms load Maximum rating: 20.8mA, 2.5V Accuracy of ±0.2mA in a normal operation Allowable loss of performance in a noisy environment: Accuracy of ±0.4mA from initial reading with a current source of 1% precision used for testing purpose.
Dry contact	Close contact resistance must be lower than 200 Ohms Open contact resistance must be higher than 100k Ohms
Water meter, Pulse speed	Max 100Hz, pulse width minimum of 3.2ms Max 100 Ohms (close contact) and min. 100k Ohms (open contact) including the value of the wire resistance
Relay outputs with current sensing input	Accuracy of ±0.5A for AC load <5A in a normal environment Allowable loss of performance in a noisy environment: Accuracy of ±0.75A from initial reading with a load of 1% precision used for testing purpose
Outputs:	
24Vdc	24 Vdc, 50 mA max
Operational ratings	
Operating Temperature	-20 to 40°C (-4 to 104°F)
Storage Temperature	-40 to 50°C (-40 to 122°F)
Environment Type	Indoor and outdoor use
Pollution Degree	2
Installation Category	2
Altitude	2000 Meters Max. (6561 Ft. Max)
Operating Relative Humidity (maximum)	-40 to 0°C (-40 to 32°F) Non condensing 0 to 10°C (32 to 50°F) Non condensing
	10 to 30°C (50 to 86°F) 95 % (± 3 %) Non condensing
	30 to 40°C (86 to 104°F) 95 % (± 3 %) Non condensing
IP rating (IEC 60529)	66
Nema Rating (Nema 250)	4X
Flame Rating (UL94)	5VA V-0
Flame Rating (IEC 60695 or IEC 60707)	FV-0
IK rating (degree of mechanical protection - impact, IEC 62262)	8

Please scan the QR Code to access the complete manual or visit the website.  
Cumberland: <http://www.cumberlandpoultry.com>  
AP: <http://www.automatedproduction.com>

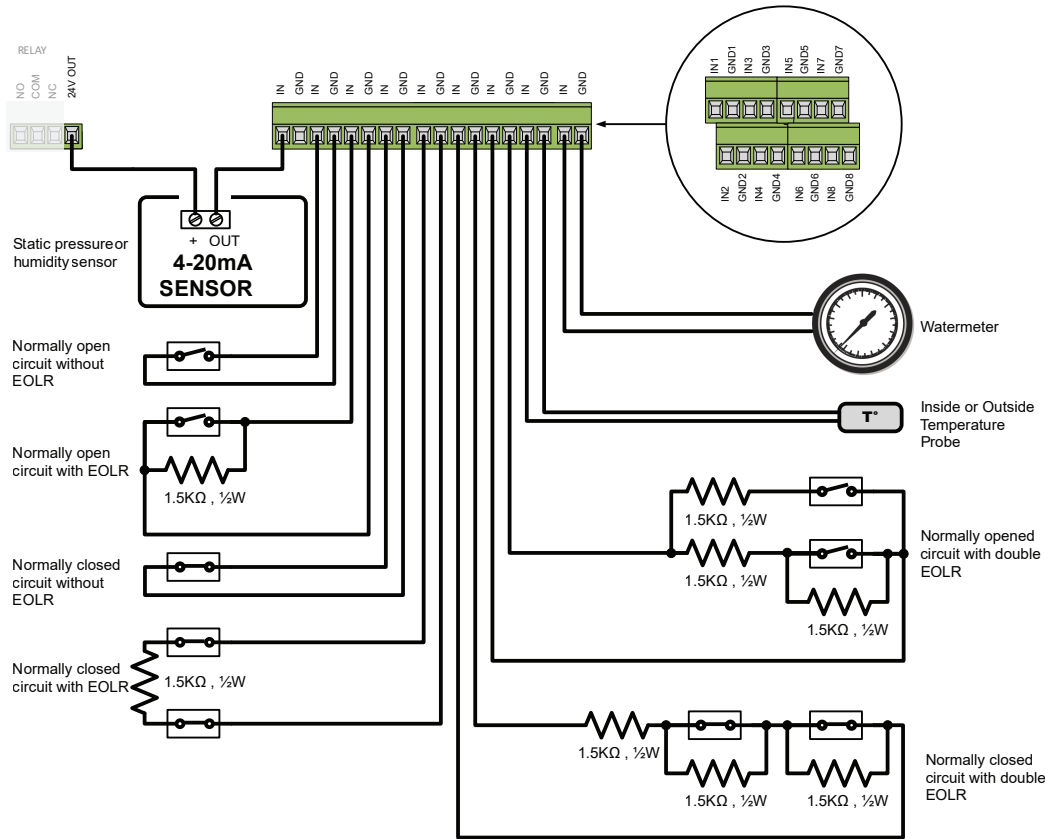


PN895-00697 REV 03	
WIRING DIAGRAM <span>EN</span>	
Agri Alert KP-8IN,TP-8IN,TR-2IN	
#891-00518	REV 03

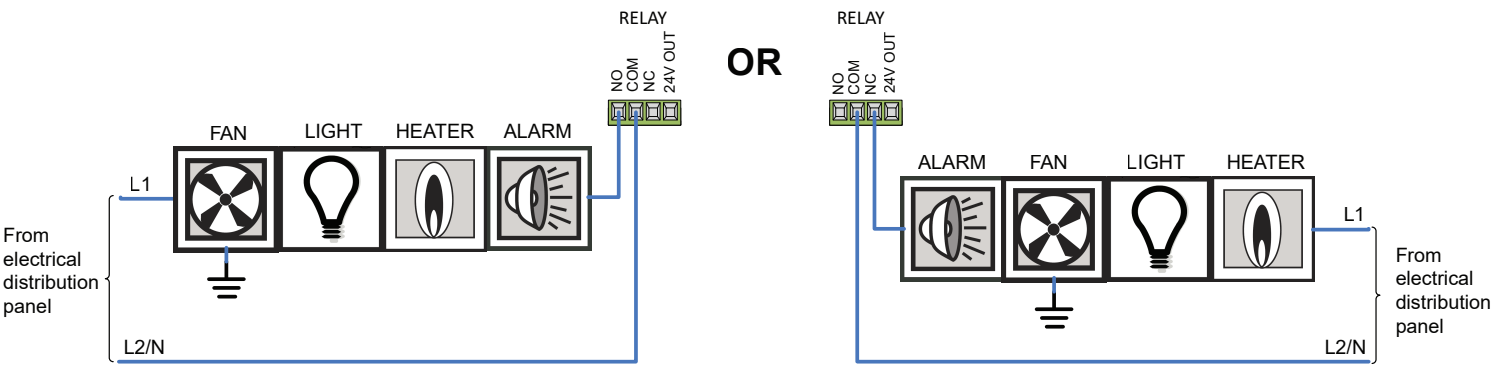
Power Supply and Communication Scheme in an AA128 Touch System



Analog Inputs Scheme



Relay Output Scheme



Low Voltage Cable Specifications

Communication Bus (Automation/Safety) - (Signal A and signal B)			
Cable Parameter	Value		
	Minimum	Typical	Maxium
Cable type	Twisted and shielded		
Minimum gauge	18AWG ( <i>diameter of 1.02mm or cross sectional area of 0.82mm²</i> )		
Maximum cable length (including cable extensions)	1200 meters (4000 feet)		
Certification and type	CSA,CMG FT4 type, 18AWG, 600V, 194°F 90°C) UL,AWM or CM type, 18AWG, 600V, 194°F 90°C)		
	If DC power is used in the same cable use TC-ER type (600V, 194°F (minimum 90°C))		
Characteristic Impedance	73 Ω	120 Ω	140 Ω
Inductance	—	0.258 μH/ft, Nominal	0.3 μH/ft
Mutual Capacitance	—	12 pF/ft	30 pF/ft
Velocity of propagation	66%	75%	—
Conductor DCR	—	6.9Ω/1000ft @ 20°C, Nominal	8Ω/1000ft Max @ 20°C
OA Shield DCR	—	1.8Ω/1000ft @ 20°C, Nominal	
			7Ω/1000ft
Attenuation (Max dB/100ft)		0.13 @ 125 kHz	
		0.25 @ 500 kHz	
		0.36 @ 1 MHz	
Pair Lay Length	—	2.50" LHL	2.75" LHL
Jacket Diameter*	—	0.414 inch	0.449 inch

\*Some products are provided with strain reliefs. If the cable diameter goes over this diameter value, the strain reliefs may not work properly

DC Power cables (Signal 24V and signal GND)					
Parameter	Wire gage when a load of 17W (max 0.7A) is connected between the source and the load				
Wire gauge	<b>18 AWG</b> ( <i>diameter of 1.02mm or cross sectional area of 0.82mm²</i> )	<b>16* AWG</b> ( <i>diameter of 1.29mm or cross sectional area of 1.30mm²</i> )	<b>14 AWG</b> ( <i>diameter of 1.62mm or cross sectional area of 2.08mm²</i> )	<b>12 AWG</b> ( <i>diameter of 2.05mm or cross sectional area of 3.30mm²</i> )	<b>10 AWG</b> ( <i>diameter of 2.58mm or cross sectional area of 5.26mm²</i> )
	1 pair twisted shielded	1 pair twisted shielded	1 pair twisted shielded	1 pair twisted shielded	1 pair twisted shielded
Maximum Length	150m (500 ft.)	300m (1000 ft.)	600m (2000 ft.)	900m (3000 ft.)	1200m (4000 ft.)
Inductance Nominal (typical)	0.17 μH/ft	0.174 μH/ft	0.16 μH/ft	0.16 μH/ft	0.14 μH/ft
Conductor DCR @20°C, Nominal (typical)	6.1 Ω/1000ft	3.6 Ω/1000ft	2.6 Ω/1000ft	1.63 Ω/1000ft	1.09 Ω/1000ft
Certification and type	CSA,CIC (TC-ER) FT4 type, 16AWG, 600V, 194°F (minimum 90°C)				
	UL, TC-ER FT4 type, 16AWG, 600V, 194°F (minimum 90°C)				
Maximum Jacket Diameter*	0.449 inch				

Other Low Voltage Cables	
Item	Description
Cable type	Twisted and shielded
Minimum gauge	18AWG ( <i>diameter of 1.02mm or cross sectional area of 0.82mm²</i> )
Maximum sensor cable length	150 m (500 feet)
Temperature cable	194°F (minimum 90°C)
Class load type	2