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- High performance ARM Architecture. Supports both analog & digital I/O.
- Intuitive user Interface. RS485 interface for long distance communication.
- Versatile connectivity options.
- Compact and Robust design.

## Introduction

The ARM based HMI Unit with 7-inch Capacitive Touch Display is a versatile, high-performance embedded system ideal for industrial, automotive and consumer applications. Featuring responsive touch input and vibrant visuals, it offers flexible connectivity options including RS232, RS485, USB Host, 10/100 Mbit/s Ethernet and a SD card slot. This compact, powerful unit provides reliable real-time control, monitoring and data storage for diverse systems. The I/O unit i.e. combination of Analog and optically isolated Digital I/O Modules with RS485 Interface and Isolation offer reliable data transfer for industrial automation. These modules support analog and digital I/O applications, providing long-distance communication and protection against electrical interference, ensuring safe and efficient operation in harsh environments.

## Specifications

### CPU Unit and Power

<b>Operating Voltage</b>	+6V to +27V
<b>SoC Family</b>	32-bit ARM Cortex based Processor
<b>CPU</b>	1 X Arm Cortex-A7 (1GHz), 1 X Arm Cortex-M4 (200MHz)
<b>RAM</b>	1GByte
<b>eMMC</b>	4GByte
<b>RTC</b>	Built-in
<b>Serial Interface</b>	1 x RS232, 3 x RS485
<b>USB Interface</b>	1 x USB Host, 1 x USB OTG
<b>SD Card Slot</b>	1 x Micro SDHC
<b>Ethernet</b>	1 x 10/100 Mbit/s Ethernet
<b>Operating Temperature</b>	-20°C to +85°C
<b>Storage Temperature</b>	-40°C to +100°C

### HMI Unit

<b>LCD Type</b>	7" Capacitive touch TFT Transmissive, Anti-glare
<b>Technology</b>	a-Si TFT
<b>Viewing Direction</b>	12:00 O'clock
<b>Viewing Angle</b>	6:00 O'clock
<b>Number of Pixels</b>	800 x 3(RGB) x 480
<b>Color</b>	16.7M
<b>Backlight</b>	LED
<b>Backlight Brightness</b>	500 cd/m <sup>2</sup>
<b>Interface</b>	RGB 18bit + TCON
<b>Touch Interface</b>	I2C
<b>Operating Temperature</b>	-20°C to +70°C
<b>Storage Temperature</b>	-30°C to +80°C

### IO Unit and Power

<b>Operating Voltage</b>	+9V to +27V
<b>Power Isolation for RS485</b>	1.5 kV Galvanic
<b>Certifications</b>	RoHS
<b>Number of IO (per card)</b>	8
<b>Dimensions</b>	
<b>Operating temperature</b>	10°C to 65°C
<b>Storage temperature</b>	0°C to 85°C

### Serial Interface

<b>Number of Ports</b>	3
<b>Serial Standard</b>	RS485
<b>Modbus Support</b>	Yes (RTU)
<b>Baud Rate</b>	Custom (Default 115200)
<b>Parity</b>	None, Even, Odd
<b>Data Bits</b>	8, 9 bit(including parity)
<b>Stop Bits</b>	1, 2
<b>Serial Signal</b>	RS485: 2W D+, D-,GND
<b>Terminating Resistor for RS485</b>	120 ohm
<b>RS485 Data Direction Control</b>	ADDC (Automatic Data Direction Control)
<b>Galvanic Isolation</b>	2.5 kV

### Analog Input

Number of Inputs	16
Input Type	Single Ended
Input Range	0 – 5v
Resolution	12bit

### Analog Output

Number of Outputs	16
Output Type	Single Ended
Output Range	4 – 20mA
Resolution	12bit

### RTD

Channels	4
Input Connections	2/3/4 wire
Input Type	Pt100/Pt1000
Pt100 Temperature Range	-200°C - 850°C
Pt1000 Temperature Range	-70°C - 550°C
Accuracy	0.5°C

### Digital Output

Number of Outputs	32
Output Type	Relay output 1 Form A (SPDT)
Isolation	Yes (optical)
Contact Material	AgSnO <sub>2</sub> ,AgNi
Contact Rating	5A 250VAC/30VDC
Mechanical Life Expectancy	2 x 10 <sup>7</sup> operations
Electrical Life Expectancy	5 x 10 <sup>4</sup> operations

### Digital Input

Number of Inputs	16
Isolation	Yes (optical)
Contact type	Wet contact
Output range	24 V
Logic Level 1	Min. 6v
Logic Level 0	Max. 5v
Type of Inputs	Sinking

## Order Information

Part No.	Description
AT-7060	Complete RTU System with HMI & I/O Unit
AT-7030	7" HMI System with Multi-protocol Master
AT-7061	RTU System with I/O Slave

