COMBO Multi-Touch HMI Series

Compact and Projective Capacitive Touch HMI with Wide Temperature and Voltage Support Powered by NXP i.MX 6 Series Family

In IPC market, a robust and highly reliable Panel PC system is a must to ensure non-stop and stable operation on production line. Featuring cost effective and power efficiency, COMBO Series is an ideal HMI in factory automation, food and beverage industry, data collecting equipment environments.

Product Introduction

COMBO Series HMI is a new era and innovation of Portwell's standard HMI product line. Powered by NXP i.MX6 processor, the cost effective and power efficient HMI comes with one Gigabit Ethernet, two USB 2.0 hosts, one OTG, one HDMI input port, one HDMI output port, one serial port, one CAN port, a wide range DC input from DC 12V to 24V and an optional Wi-Fi/3G/4G   feature. Besides, it is equipped with 512MB or 2GB DDR3 memory down and 8GB eMMC, which targets to support mission-critical industrial applications.

COMBO Series HMI can boot from the onboard eMMC or SD card to Yocto Linux 4.1.15 kernel version or Android 6.0 operating systems via U-Boot boot loader, specially customized to take full advantage of the i.MX6 CPU 3D graphics acceleration capabilities. To sum up, COMBO Series HMI is a ready platform for all kind of industrial applications, including factory automation, machine automation, data collecting and energy-saving control systems.
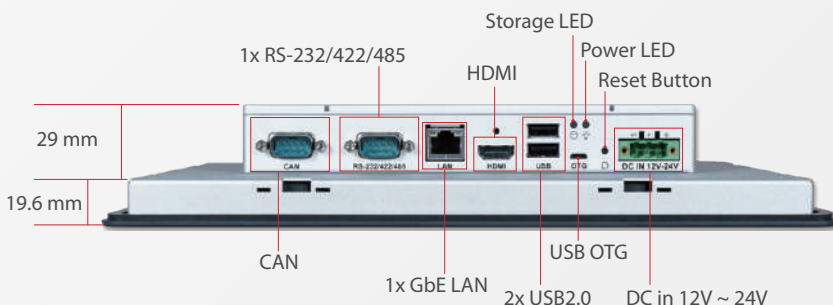
▋ HMI with NXP i.MX 6 Solo/Quad-core Processor

The i.MX 6 series processors unleash a scalable multi-core platform that includes single-, dual- and quad-core families based on the ARM® Cortex™ A9 architecture for next generation industrial applications. By combining the power-efficient processing capabilities with bleeding edge 3D and 2D graphics, as well as high-definition video, the i.MX 6 series provides a new level of multimedia performance to enable an unbounded next generation user experience. The unprecedented levels of performance and power efficiency making it an ideal solution for designs requiring high performance in low power or thermally constrained cost-sensitive devices.

i.MX 6 Series

▋ CAN Bus Connectivity

COMBO Series HMI features CAN Bus specifictation version 2.0B, which supports both standard and extended message frames communication, making it a suitable equipment for applications such as cars, trucks, tractors, trains, agricultural machinery, textile machinery, etc. With a high degree of reliability and stability, CAN Bus is also widely used in industrial control.

10.1"

1x RS-232/422/485
Storage LED
HDMI
Power LED
Reset Button
29 mm
19.6 mm
CAN
1x GbE LAN
2x USB2.0
USB OTG
DC in 12V ~ 24V
HDMI Input   SD Card

* The picture of COMBO-S1020

60℃ / -20℃ **CAN BUS** **HDMI**

▌ Wide Operating Temperature Support with Fan-less Design

COMBO Series HMI takes advantage of NXP i.MX6 family to operate under extremely hot and cold conditions. Compared to most HMI in the market, the operating temperature of COMBO Series HMI can be as low as -20℃ or up to 60℃ in spite of its fan-less design. Moreover, the cable-less structure optimizes the thermal dissipation as well as makes it more durable in rugged environments.

▌ Projective Capacitive Multi-Touch Screen

By adopting antiscratch surface with 7H hardness protection, high touch durability and long-term stability are built-in features of COMBO Series HMI. 10-points multi-touch supports a full set of gestures such as zooming in/out, panning, or rotating, giving users a whole new way to control and interact with what's on the screen even with surgical gloves or thin cotton gloves.

NXP **ARM**

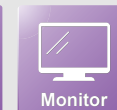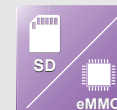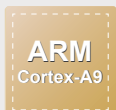| Zoom | Pan | Rotate | Swipe | Scroll | Mulit-tap |
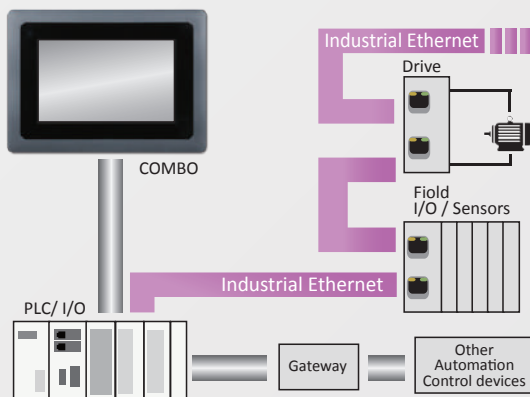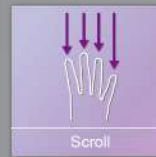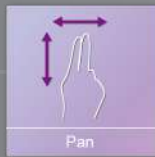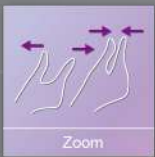
▌ Act multi-mission as PC / Monitor

COMBO Series HMI can not only support dual display output via an additional HDMI output port, but also support monitor function via one HDMI input port. It can be an ideal PIP (picture in picture) solution to integrate external video signal and compute on COMBO 10.1" HMI by itslef.

Ordering Guide

AL6-3224	(R).ATO.COMBO-S1020-Solo-512-8G. 10.1" i.MX6 P-CAP HMI
AL6-3236	(R).ATO.COMBO-S1020-Quad-2G-8G. 10.1" i.MX6 P-CAP HMI

Industrial Ethernet
Drive
COMBO
Field I/O / Sensors
Industrial Ethernet
PLC/ I/O
Gateway
Other Automation Control devices

ARM Cortex-A9 | **-20℃ 60℃ Wide Temp.** | **Fan-less** | **P-CAP Touch** | **IP65** | **Wide Voltage 12V-24V** | **VESA mount** | **CAN Bus** | **SD eMMC** | **Monitor** | **Panel Mount**

COMBO Quick Selection Guide

COMBO Multi-Touch 10.1"

Model Name	COMBO-S1020
Display	
LCD Size	10.1" (16:9)
Resolution	WXGA 1280 x 800
Brightness	300 cd/m^2
Contrast Ratio	1300 : 1
Backlight	LED type
Touch Screen	Projected Capacitive Multi-Touch
System	
SoC	Freescale™ i.MX6 Solo/Quad-core Processor Cortex™ A9
Memory	512MB/2GB DDR3 1066 Memory Chip on Board
BIOS	N/A
Graphics	Freescale™ i.MX6 Graphic Engine
LVDS	Single/Dual Channel 24-bit
LAN Chipset	Single Atheros AR8035 Ethernet PHY
Audio	SGTL 5000 Audio Codec
Watchdog Timer	Control by Software
Storage Device	8GB eMMC on board, 1x SD card, 1x half-size mSATA socket (Quad core sku support only)
OS	Yocto Linux™ 4.1.15 + QT 5.6.1 / Android 6.0
I/O Interface	
Series Port	1 x RS-232/422/485
Display	1 x HDMI input, 1 x HDMI output
USB	2 x USB 2.0, 1 x USB OTG
Ethernet	1 x Gigabit Ethernet
Others	1 x CAN 2.0B (DB9) 1 x SMA Antenna hole for WiFi, 3G, 4G LTE Solution
Expansion	1x Full-size Mini-PCIe socket
Mechanical	
Dimension(mm)(WxDxH)	286 x 196 x 48.6 mm
Mounting	VESA Mount 50 x 25, 75 x 75 ; Panel Mount
Weight (Kg)(N)	1.6 Kg
Weight (Kg)(G)	3.4 Kg
Power	
Power Supply	DC 12V ~ 24V input with 3-pin terminal block connector
Consumption (Max)	25 W
Consumption (Min)	6.2 W
Environmental	
OP /Storage Temp	-20 ~ 60 °C / -30 ~ 80°C (20~90% non-condensing)
Vibration	1.0G (SD/eMMC), Power on & 2.16G, Packaged; 5~500Hz, IEC 60068-2-6
Shock	15G peak acceleration, 11 ms (Power on condition), IEC 60068-2-27
Drop	Package with Carton from 96.5 cm (1-Corner, 3-Axis, 6-Face), ISTA 2A Standard
IP Protection	IP65 (Front) / IP20 (Rear), IEC 60529 Edition 2.1 Standard
Certificate	CE/FCC Class A

Cut out Dimension

A (MAX. Wall Thickness)
D (Tolerance ±1mm)
C (Tolerance ±1mm)
B (MIN. Thickness Behind Wall)
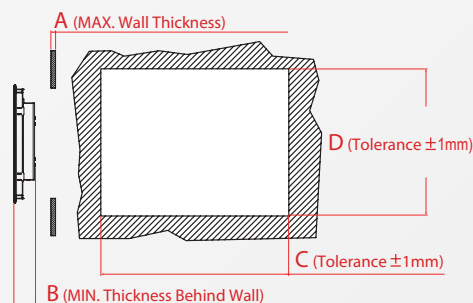
COMBO Multi-Touch

	A (mm)	B (mm)	C (mm)	D (mm)	Mounting Kits (pcs)
COMBO-S1020	< 8.6	45	270	180	x 8