

# HAWK 8000 Controller

## Product Data



Fig. 1. HAWK 8000

## GENERAL

The HAWK 8000 is a compact, embedded IoT (Internet of Things) controller and server platform for connecting multiple and diverse devices and sub-systems. With Internet connectivity and Webserving capability, the HAWK 8000 controller provides integrated control, supervision, data logging, alarming, scheduling and network management. It streams data and rich graphical displays to a standard Web browser via an Ethernet or wireless LAN, or remotely over the Internet. The licensing model for the HAWK 8000 controller is simplified and features standard drivers along with optional I/O and field bus Expansion Modules for ultimate flexibility and expandability. The HAWK 8000 controller operates with CentralLine NX for optimum performance. In larger facilities, multi-building applications and large-scale control system integrations, CentralLine NX Supervisors can be used with HAWK 8000 controllers to aggregate information, including real-time data, history and alarms, to create a single, unified application.

## FEATURES

- TI AM3352: 1000MHz ARM® Cortex™-A8.
- 1GB DDR3 SDRAM
- Removable micro-SD card with 4GB flash total storage/2GB user storage.
- Wi-Fi (Client or WAP)
  - IEEE802.11a/b/g/n
  - IEEE802.11n HT20 at 2.4GHz
  - IEEE802.11n HT20/HT40 at 5GHz
  - Configurable radio (Off, WAP, or Client)
  - WPAPSK- / WPA2PSK-supported
  - Wi-Fi Antenna
- USB type A connector
  - Back-up and restore support
- Two isolated RS-485 interfaces with selectable bias and termination
- Two 10/100 MB Ethernet ports
- Secure boot
- Voltage: 24 VAC/DC (50/60 Hz)
- Max. power consumption
  - without Expansion Modules: 18 VA;
  - fully loaded with Expansion Modules: 20 VA
- Rec. power supply: 24 VAC (24 VA) / 24 VDC (1 A)
- Runs CentralLine NX 4.1 and later
- Real-time clock
- Battery-free
- The unit is compatible with (DIN43880) enclosures and suitable for mounting to a panel or to an EN50022 Standard 35-mm rail

## EXPANSION AND P.B. I/O MODULES

### Expansion Modules

The HAWK 8000 supports a maximum total of four Expansion Modules in certain combinations. If you use two HON-NXEM-2X485 Expansion Modules (which must always be positioned to the immediate right of the controller), you are limited to one additional HON-NXEM-LON or HON-NXEM-232 for a total of three.

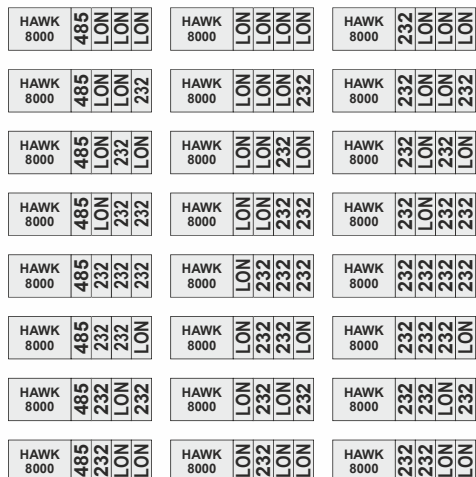
**Table 1. No. of Expansion Modules supported**

Max. no.	Expansion Modules
4	HON-NXEM-LON
4	HON-NXEM-232
2	HON-NXEM-2X485



### MAX. 3 EXPANSION MODULES

### MAX. 4 EXPANSION MODULES



**Fig. 2. Possible combinations of Expansion Modules**

Separate maximum limits may be defined in the controller's license, such as total number of points (capacity licensing).

**Table 2. Maximum wired field bus integrations**

HW interface	max. no.	description, option module
RS485	6	Two via the two onboard RS485 interfaces of the HAWK 8000, four via two HON-NXEM-2X485 Exp. Modules (each with 2 ports)
LONWORKS FTT-10	4	Four HON-NXEM-LON Exp. Modules (each with 1 port)
RS232	4	Four HON-NXEM-232 Exp. Modules (each with 1 port)

### Panel Bus I/O Modules

In principle, up to six (6) Panel Buses can be operated concurrently:

- Up to two (2) Panel Buses via the onboard RS485 interfaces of the HAWK 8000, plus up to four (4) Panel Buses via the RS485 interfaces of two HON-NXEM-2X485 Expansion Modules (with each Expansion Module capable of handling two Panel Buses).

Per RS485 interface, it is possible to operate:

- A maximum of 64 Panel Bus I/O modules;
- 16 Panel Bus I/O modules of a given type (UI, AO, BI, BO, RO, Floating Output, Mixed)

### IMPORTANT

*You must check the CPU load of the HAWK 8000 and ensure that 80% CPU load is not exceeded.*

*Depending on your application (e.g., total application size, Panel Bus I/O updates and poll-rate, amount of alarming and trending, size/complexity/access load of the web interface, etc.), the maximum number of supported RS485 interfaces (i.e. Panel Bus interfaces) and Panel Bus modules may be lower than six (6) Panel Buses with 64 modules each!*

For more information, see HAWK 8000 Software Release Bulletin and to Panel Bus I/O Modules – Product Data (EN0Z-0979GE51).

## ORDER NUMBERS

**Table 3. Licensed controllers, incl. 1 year of SW update**

OS number	description
CLNXHAWK8-100	HAWK8 NO WIFI 100 PTS 1YR SW UPDATE
CLNXHAWK8-250	HAWK8 NO WIFI 250 PTS 1YR SW UPDATE
CLNXHAWK8-500	HAWK8 NO WIFI 500 PTS 1YR SW UPDATE
CLNXHAWK8-1250	HAWK8 NO WIFI 1250 PTS 1YR SW UPDATE
CLNXHAWK8-5K	HAWK8 NO WIFI 5K PTS 1YR SW UPDATE
CLNXHAWK8-10K	HAWK8 NO WIFI 10K PTS 1YR SW UPDATE
CLNXHAWK8W02-100	HAWK8 WIFI ZONE2 100 PTS 1YR SW UPDATE
CLNXHAWK8W02-250	HAWK8 WIFI ZONE2 250 PTS 1YR SW UPDATE
CLNXHAWK8W02-500	HAWK8 WIFI ZONE2 500 PTS 1YR SW UPDATE
CLNXHAWK8W02-1250	HAWK8 WIFI ZONE2 1250 PTS 1YR SW UPD.
CLNXHAWK8W02-5K	HAWK8 WIFI ZONE2 5K PTS 1YR SW UPDATE
CLNXHAWK8W02-10K	HAWK8 WIFI ZONE2 10K PTS 1YR SW UPDATE

**Table 4. Expansion Modules**

OS number	description
HON-NXEM-LON	LON EXPANSION MODULE SINGLE PORT
HON-NXEM-2X485	RS485 EXPANSION MODULE DUAL PORT
HON-NXEM-232	RS232 EXPANSION MODULE SINGLE PORT

**Table 5. Hardware-only controllers, for replacement**

OS number	description
CLNXSERIES8	HAWK8 NO WIFI W/O LICENSE
CLNXSERIES8W02	HAWK8 WITH WIFI ZONE 2 W/O LICENSE

**Table 6. Spare parts**

OS number	description
CLNXHAWK8-CLIP	HAWK8 CENTRALINE CLIP
CLNXHAWK8-SD	HAWK8 SD CARD
HON-NX8-KIT	WIFI-ANTENNA + RS485 + POWER TERMINALS

**Table 7. Point upgrade licenses**

OS number	description
CLNX-DEVICE-UP-10	HAWK8 PLUS 500 POINTS UPGRADE
CLNX-DEVICE-UP-25	HAWK8 PLUS 1250 POINTS UPGRADE
CLNX-DEVICE-UP-50	HAWK8 PLUS 2500 POINTS UPGRADE

**Table 8. Software upgrade licenses**

OS number	description
CLNX-SMA-8005-1YR	HAWK8 1YR SW UPDATE 250-499 PTS
CLNX-SMA-8005-3YR	HAWK8 3YR SW UPDATE 250-499 PTS
CLNX-SMA-8005-5YR	HAWK8 5YR SW UPDATE 250-499 PTS
CLNX-SMA-8010-1YR	HAWK8 1YR SW UPDATE 500-1249 PTS
CLNX-SMA-8010-3YR	HAWK8 3YR SW UPDATE 500-1249 PTS
CLNX-SMA-8010-5YR	HAWK8 5YR SW UPDATE 500-1249 PTS
CLNX-SMA-8025-1YR	HAWK8 1YR SW UPDATE 1250-4999 PTS
CLNX-SMA-8025-3YR	HAWK8 3YR SW UPDATE 1250-4999 PTS
CLNX-SMA-8025-5YR	HAWK8 5YR SW UPDATE 1250-4999 PTS
CLNX-SMA-8100-1YR	HAWK8 1YR SW UPDATE 5000-9999 PTS
CLNX-SMA-8100-3YR	HAWK8 3YR SW UPDATE 5000-9999 PTS
CLNX-SMA-8100-5YR	HAWK8 5YR SW UPDATE 5000-9999 PTS
CLNX-SMA-8200-1YR	HAWK8 1YR SW UPDATE 10000+ PTS
CLNX-SMA-8200-3YR	HAWK8 3YR SW UPDATE 10000+ PTS
CLNX-SMA-8200-5YR	HAWK8 5YR SW UPDATE 10000+ PTS

**Table 9. Miscellaneous licenses**

OS number	description
CLNX-JACE-8000-AX	HAWK8 ENABLER FOR NIAGARA AX
CLNXHAWK8-DEMO	HAWK8 Demo License

**Table 10. Optional drivers**

OS number	description
CLNX-DR-SMS-ALM	NX SMS DRIVER
CLNX-DR-MFID	NX FIDELIO DRIVER

## DRIVERS

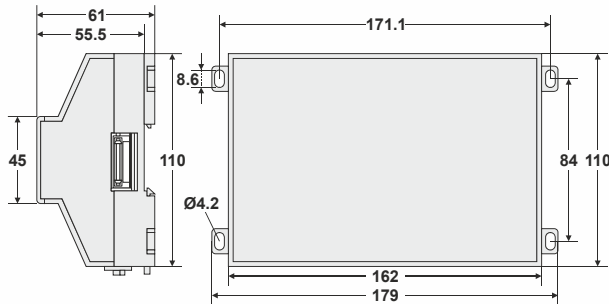
### Included Drivers

- Niagara NX drivers
  - BACnet IP
  - BACnet MS/TP
  - FOX ("inter-station" communication, i.e. to a supervisor or other HAWK controllers)
  - KNX-IP
  - LON
  - M-Bus
  - Modbus, all types
  - oBIX
  - Open ADR
  - SNMP
- Centraline-specific drivers
  - Panel Bus
  - C-Bus
  - LON IO
  - Print-Out
  - IO Creation
  - Bacnet Util
  - Extensions
  - EnOcean

### Optional Drivers

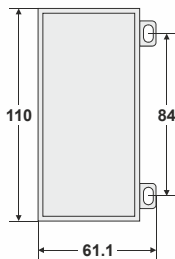
- Niagara NX drivers
  - SMS (see also Table 10 above)
  - Fidelio (see also Table 10 above)
- Centraline-specific drivers (under preparation)
  - Application Library
  - Energy Vision

## DIMENSIONS AND MOUNTING



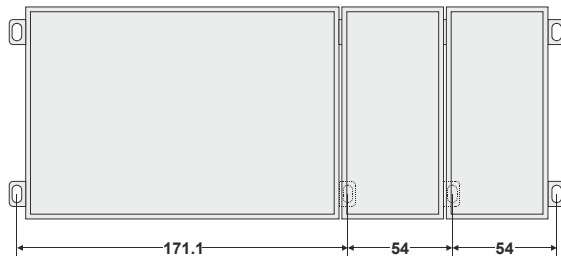
**Fig. 3. HAWK 8000, dimensions (in mm)**

**NOTE:** Allow at least 38 mm clearance around all sides and a minimum 76 mm at the bottom for the WiFi antenna.



**Fig. 4. Expansion Module, dimensions (in mm)**

**NOTE:** Up to four Expansion Modules may be used (see also Table 1).



**Fig. 5. Distances between centers of tabs (in mm)**

## SPECIFICATIONS

### Environmental Specifications

Operating temperature:	-20 ... +60 °C
Storage temperature:	-40 ... +85 °C
Humidity:	5 ... 95%, non-condensing
Shipping and vibration:	ASTM D4169, Assurance Level II
Dimensions:	See Fig. 3 to Fig. 5.

## APPROVALS, CERTIFICATIONS, ETC.

- UL 916, Energy Management Equipment – Edition 4
- CE: 2014/53/EU RED, 2011/65/EU RoHS
- FCC Part 15, Subpart B, Class B; Part 15, Subpart C
- C-UL listed to Canadian Standards Assoc. (CSA) C22.2 No. 205-M1983 "Signal Equipment"
- Ethernet: IEEE 802.3
- Purpose of the device is: multifunctional non-safety control intended for HVAC in home (residential, commercial, and light-industrial) environments

**NOTE:** Keep AC mains supply/load cables separate from signal wiring!

## RELATED TECHNICAL LITERATURE

**Table 11. Related Technical Literature**

Title	Product Literature no.
HAWK 8000 – Installation & Comm. Instructions	EN1Z-1016GE51
HAWK 8000 – Product Data	EN0Z-1016GE51
HAWK 8000 – Mounting Instructions	MU1Z-1016GE51
HAWK 8000 – Installation & Startup Guide	EN1Z-1027GE51
HAWK 8000 – Backup & Restore Guide	EN2Z-1027GE51
HAWK 8000 – PICS	EN0Z-1028GE51
HAWK 8000 – Wi-Fi Guide	EN2Z-1029GE51
HON-NXEM-xxx Expansion Modules – M.I.	MU1Z-1031GE51

## OVERVIEW OF FEATURES

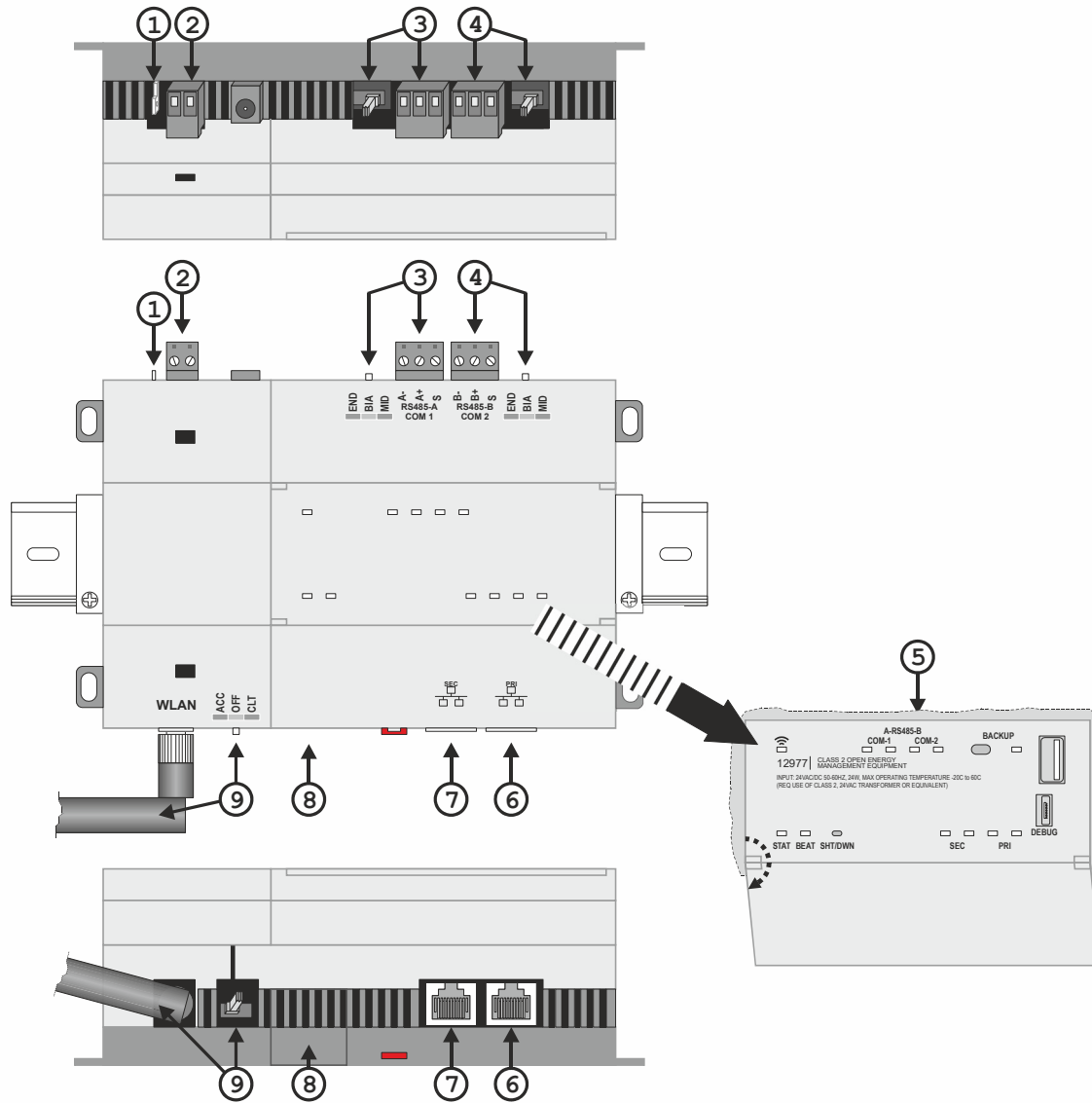


Fig. 6. HAWK 8000, overview of features

1	Earth ground	6	PRI (primary) LAN1, 10/100-Mbit Ethernet connection
2	Terminal block for 24 VAC/DC power supply	7	SEC (secondary) LAN2, 10/100-Mbit Ethernet connection
3	RS485-A port and bias / termination switch	8	Access shutter for microSD card (slide to open / close)
4	RS485-B port and bias / termination switch	9	Wi-Fi settings switch and Wi-Fi antenna
5	LEDs and (when door open) USB 2.0 and Micro-A USB		

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