carbex
QUALITY TO THE CORE

i-BRUSH 2.0 SYSTEM

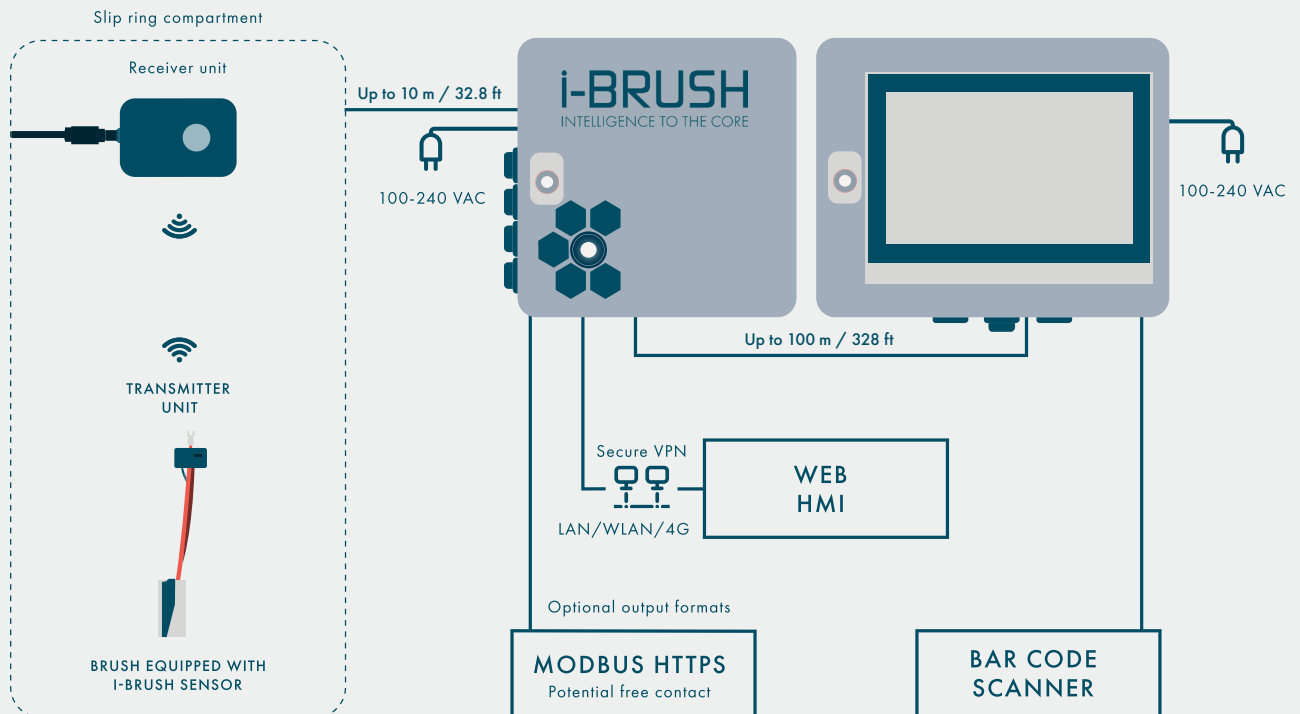## THE OPTIMAL ONE-OF-A-KIND SYSTEM FOR REMOTE CARBON BRUSH MONITORING

i-BRUSH 2.0 plug-and-play system for generators & motors

Carbex i-BRUSH 2.0 system with integrated sensors in the carbon brush, with an external control unit, enables maintenance staff to check brush condition and performance characteristics at anytime from anywhere.

The tailormade setup provides, you as a customer, a wide range of interfaces for your monitoring system.

SCHEMATIC OVERVIEW

Slip ring compartment

Receiver unit

Up to 10 m / 32.8 ft

100-240 VAC

TRANSMITTER UNIT

BRUSH EQUIPPED WITH I-BRUSH SENSOR

i-BRUSH
INTELLIGENCE TO THE CORE

100-240 VAC

Up to 100 m / 328 ft

Secure VPN

WEB HMI

LAN/WLAN/4G

Optional output formats

MODBUS HTTPS
Potential free contact

BAR CODE SCANNER

BEYOND THE BOUNDARIES OF BRUSH TECHNOLOGY

CARBEX AB
BOX 115, SE-592 22
VADSTENA, SWEDEN

📞 +46 (0)143–294 40
✉ info@carbex.se
🌐 carbonbrushsolution.com

USA Sales Contact
OHIO CARBON INDUSTRIES, INC
1201 JACOBSON AVE ASHLAND
OH 44805

📞 888-248-5029
✉ sales@ohiocarbon.com
🌐 ohiocarbon.com

i-BRUSH 2.0 SYSTEM

Operating data can be displayed on any PC or HMI display. With knowledge of remaining brush life, the future maintenance can easily be planned to secure uptime.

Carbex monitoring system

- Can be retrofitted to any existing installation.
- Fits most common brush holder/slip ring designs on the market.
- Regardless of brush grade, all types of brushes are available in i-BRUSH design.
- Designed to monitor up to 100+ brushes.
- Locally stored operating data.

The key parameters monitored, logged and reported by i-BRUSH 2.0

- Brush wear.
- Temperature in the brush.
- Current in the brush.
- Current distribution between brushes.
- Brush vibrations (pk-pk).
- Temperature and humidity in slip ring compartment.

When one of the monitored values deviates from preset parameters an alarm is initiated.

24/7 BATTERY-FREE SOLUTION

Reusable and battery free transmitters

- The transmitter read and write the data from the carbon i-BRUSH sensor to the receiver.

Receiver unit

- The receiver has a built in temperature/humidity sensor and a wireless device.

Carbon i-BRUSH

- Measures wear, current vibration (as option) and temp per brush position.

HMI DISPLAY (OPTION)

A 12" touch screen can easily be added to the i-BRUSH system for quick and easy overview.

HMI Display can be delivered with 3, 10, 30*, 50 or 100m / 9.8, 32.8, 98.4*, 164, 328 ft cable. Possibilities to connect external keyboard and mouse. A touch pen is included as standard.

*Standard length

Internet connection

Customer can choose between WLAN/LAN or 4G/WLAN/LAN

Note: System can run without internet.

External communication (optional)

Customer can choose between Modbus, Https or 4 potential free output relay.

BEYOND THE BOUNDARIES OF BRUSH TECHNOLOGY

i-BRUSH 2.0 SYSTEM

BENEFITS & FEATURES

Secure and safe operation

- Replacement of brushes is carried out easy and safely.
- Less interactions and inspections of complete slip ring unit.
- Less shutdowns due to maintenance work.

Reduces cost of maintenance

- Decreases need for repairs of potential slip ring damages which reduces downtime.
- Quick overview.
- The i-BRUSH system itself has minimal maintenance and low operating costs. Transmitters can be reused for several brush sets, and no battery replacement is required.

Maintenance is performed based on brush conditions rather than scheduled activities.

Increased workforce efficiency

- Enables maintenance staff to check brush condition at any time.
- Reduced site visits for inspection and maintenance.
- Time saving inspections, with longer intervals.

Better & safer maintenance

- Constant monitoring via HMI display alt. control rooms lead to more informed decisions.
- Constant data transfer 24/7.

Quick and easy installation

- Installation of the i-BRUSH system does not require any specialized expertise, and a minimum of electrical installation.
- Boxes attaches magnetically or by fasteners.

CONFIGURATION

i-BRUSH box

- Control unit with integrated intelligence.
- Controlling up to 100+ brushes.
- Multicolor LED display for quick status overview.
- Pre-installed program with alarm settings etc.
- Internal data storage, with locally hosted software.
- Subscription of reports as an option.
- Standard power supply, AC 100-230VAC.
- Barcode scanner.

Transmitters

- Battery-free transmitters.
- Wireless brush communication up to 10 m / 32.8 ft between receiver and transmitter units.
- Reusable transmitters.

Receiver

- Built-in temperature/humidity sensor
- Wiring distance up to 10 m / 32.8 ft between receiver and i-BRUSH box

HMI Display (option)

- 12" Display.
- Display cable standard 30 m / 98.4 ft*.
- Internet connection securely via VPN with internal firewall.
- Internet connection – WLAN/LAN or 4G/WLAN/LAN.
- Option to connect external DCS (Scada etc.).
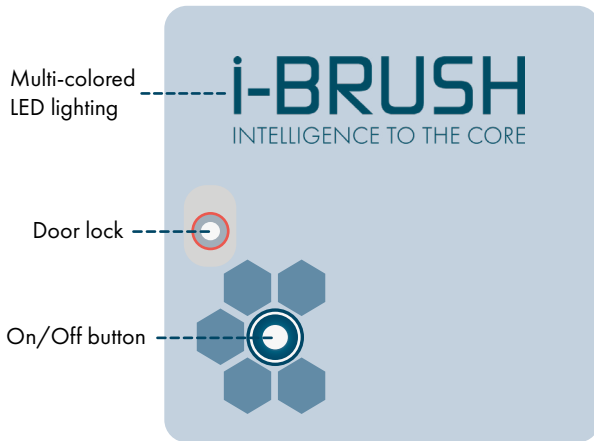- Access of installation manual via HMI display.

Dimension

- i-BRUSH Box: 300 x 300 x 155 mm / 11.8 x 11.8 x 6.1 in.
- HMI Box: 380 x 300 x 182 mm / 15 x 11.8 x 7.2 in.
- Receiver unit: 46 x 56 x 85 mm / 1.8 x 2.2 x 3.3 in.
- Transmitter unit: 29 x 45 x 28,4 mm / 1.4 x 1.8 x 1.12 in.
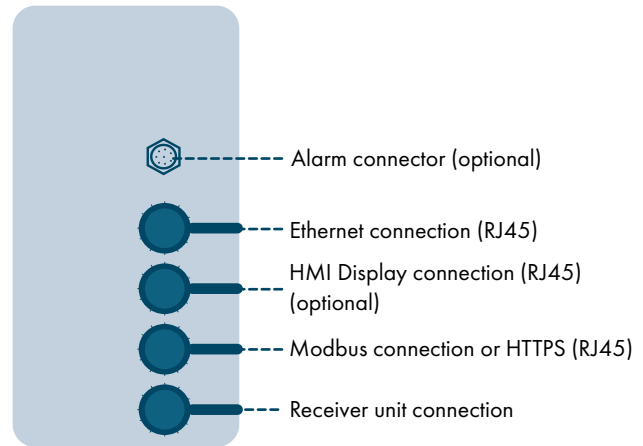
*various lengths as option

BEYOND THE BOUNDARIES OF BRUSH TECHNOLOGY
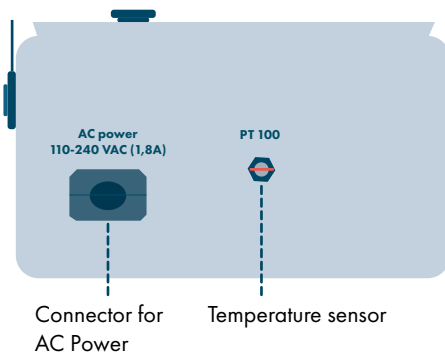
i-BRUSH 2.0 SYSTEM
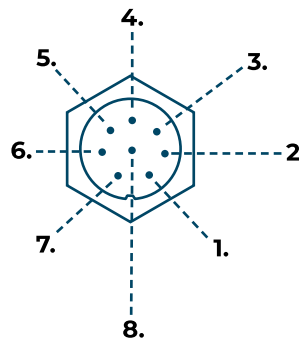
INTERFACE DESCRIPTION

Multi-colored LED lighting

Door lock

On/Off button

SIDE PANEL

Alarm connector (optional)

Ethernet connection (RJ45)

HMI Display connection (RJ45) (optional)

Modbus connection or HTTPS (RJ45)

Receiver unit connection

BOTTOM PANEL

AC power
110-240 VAC (1,8A)

PT 100

Connector for AC Power

Temperature sensor

ALARM OUTPUTS (OPTIONAL) I-2BR-SMS-2

The four outputs are optoisolated, electronic relay outputs. They are rated 125 ACV 0,5A or 30 DCV 2 A

PANEL CONTACT	RELAY CH
1	Relay 1, NO contact
2	
3	Relay 2, NO contact
4	
5	Relay 3, NO contact
6	
7	Relay 4, NO contact
8	

PRODUCT ID I-BRUSH BOX

Supply voltage	100–240 VAC (1,8 A)
Alarm output (isolated) (optional)	125 ACV 0,5A or 30 DCV 2 A (I-2BR.SMS–2)
Internet connection	VPN via internal firewall
IP Enclosure rating	IP54
Dimensions	300 x 200 x 155 (175) mm 11.8 x 11.8 x 6.1 in
Weight	10 kg
Operating temperature	-40–+60 °C
Storage temperature	-40–+85 °C
Receiver unit cable	Up to 10 m /32.8 ft
HMI display cable	Up to 100 m / 328 ft

PRODUCT ID HMI DISPLAY BOX

Supply voltage	100–240 VAC (1,8 A)
IP Enclosure rating	IP54
Dimensions	380 x 300 x 182 mm 15 x 11.8 x 7.2 in
Weight	≈ 10,2 kg
Operating temperature	0–+55 °C
Storage temperature	-20–+70 °C
HMI display cable	Up to 100 m / 328 ft
Display size/resolution	12.1 inch display 1280 x 800

BEYOND THE BOUNDARIES OF BRUSH TECHNOLOGY