

BMSline

Integrating window automation into
Building Management Systems



PROGRAMMABLE AND ADDRESSABLE ACTUATORS

BMSline represents the most advanced technology allowing the two-way communication between window automation and Building Management System enabling interaction with other systems in building (HVAC, lighting...).

By the integration in Building Management Systems (BMS) the window automation allows:

- › **Energy saving:** automatic switch-off or reduced use of Air conditioning, heating, lights.
- › **Comfort** in the building: easy control of window automation through computer or other devices, quiet operation, wellbeing that becomes health, then productivity at job place or school.
- › **Safety** by smoke ventilation in case of emergency.

The windows can be organized into groups thanks to addressable BMSline actuators. Building Management system can easily define different scenarios for each single group for total automation or local and/or remote control.



NIGHT COOLING

To avoid or limit air conditioning during the day. With continually monitored indoor and outdoor temperatures, windows can be partly opened at night to exploit the cool air from outside and reduce indoor temperature.



MICRO VENTILATION

To recycle air and regulate humidity. For a healthy environment, windows can be opened a little for air to circulate and to regulate humidity indoors.



DAILY COMFORT VENTILATION

With continued monitored indoor and outdoor temperature and CO2 concentration, windows can be controlled to provide first class living comfort and to save energy. Windows will be closed in bad weather conditions, ignoring all other commands (apart smoke ventilation).



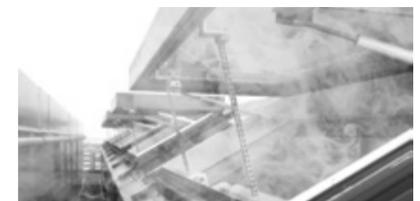
REMOTE CONTROL

For groups of windows in rooms, zones, etc. All scenarios can be set on a time and daily basis, but the system can always be used for any temporary need.



LOCAL CONTROL

The BMSline actuator can be manually operated by the local push button. Continual real-time feedback to BMS system.

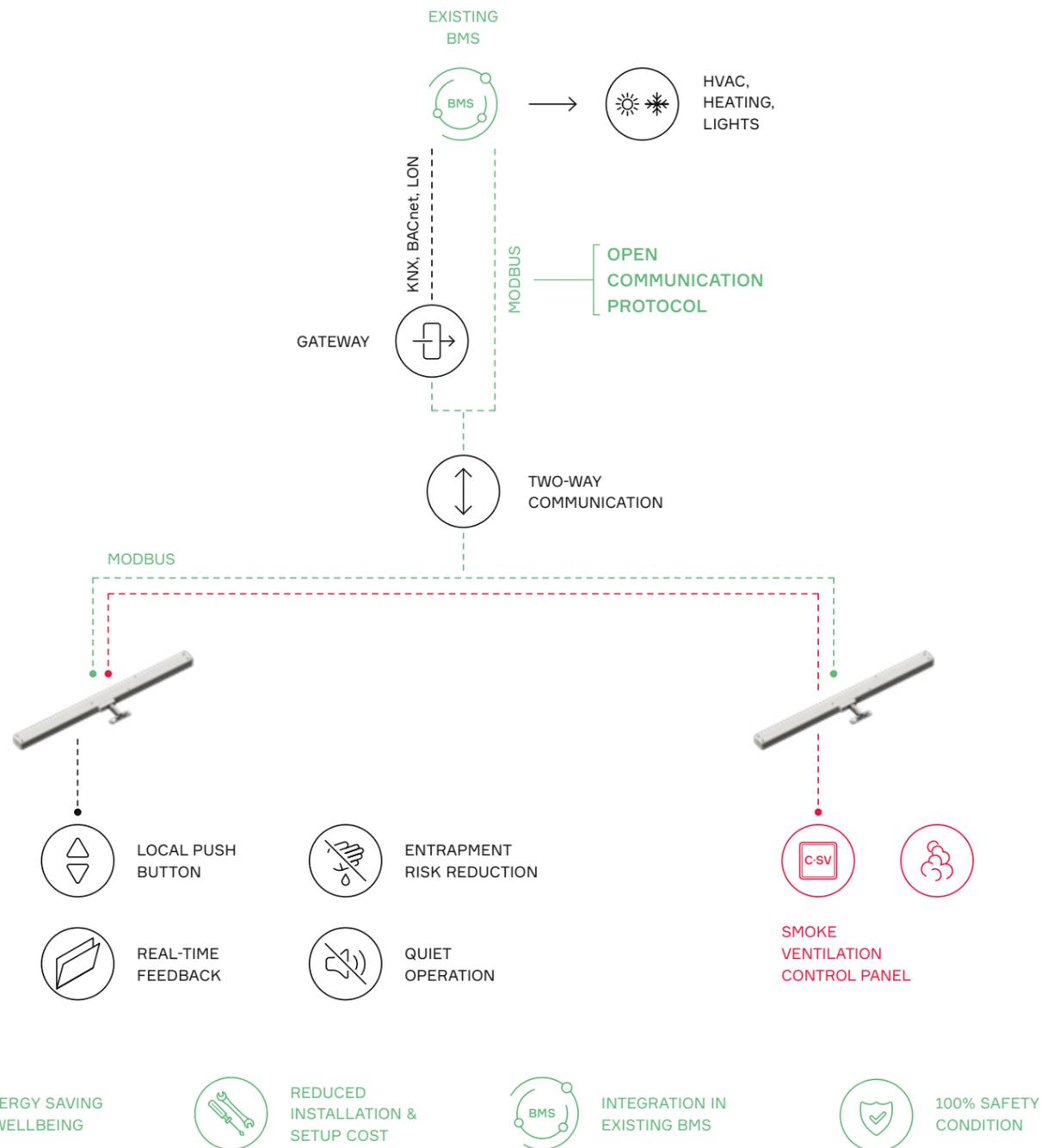


SMOKE & HEAT EXTRACTION

Dedicated Control Panels and actuators, tested in fire conditions, operate windows, skylights and louvres to extract smoke.

INTEGRATING WINDOW AUTOMATION INTO BMS

- › Compatible with all existing Building Management Systems.
- › Continual, totally controlled window with real-time feedback. Not just an ON/OFF operation (open/close).
- › Addressable actuators in order to control the environment of each room in a building.
- › No need for external modules/control panels: the actuator has built-in intelligence.
- › Window controlled locally by a standard wall switch, even with a centralized Building Management System.
- › Smoke Ventilation Control Panels with back-up batteries can be directly and safely connected.



The BMSline smart features are available for NANO, QUASAR, TWIN QUASAR and VEGA actuator series with 24Vdc voltage supply.

Programmable parameters

- › Stroke.
- › Percentage of opening and closing action.
- › Speed, in opening and closing action.
- › Force, in opening and closing action.
- › Real close position of the window.
- › Closing position tolerance.
- › Soft stop length and speed.

Real-time feedback

- › Full opening or closing.
- › Percentage of opening and position of the chain.
- › Current setting of parameters and scenarios.
- › Location in the building and address in the network.
- › Statistics and diagnostic.
- › Command state.
- › Eventual Failures.

Scenarios

- › Reduction of entrapment risk.
- › Local control of the window even with centralized management.
- › Speed synchronization for multiple actuators on the same window.
- › Quiet operation for Natural Ventilation and full speed and force for Smoke Ventilation.

BMSline ACTUATORS CONFIGURATION AND ADDRESSING

BMSline actuators can be easily programmed and configured through the communication cable Modbus RTU. UCS can provide a “BMSline Setup kit” that allows anytime to set the programmable parameters, choose the scenarios and receive real-time feedback.

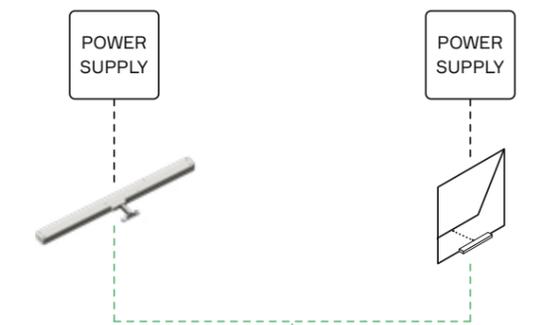
BMSLINE SETUP KIT PART NO. 41587H

User friendly Configuration Software and cable for fast connection between PC (USB connector) and actuators. The UCS BMSline Configuration Software works on any computer with Windows XP and following versions.

- › Parameters, scenarios, network address, assignment.
- › Actuator control and closing position adjustment.
- › Information feedback and diagnostic.
- › Warnings and Faults indication .
- › Status of the communication.
- › Statistic.
- › Setup data recording.

- › BEFORE INSTALLATION
Parameter configuration, Address assignment.
- › DURING INSTALLATION
Parameter configuration, Address assignment, Closing position adjustment (opt).
- › AFTER INSTALLATION
Parameter configuration, Commissioning, Window control/feedback, Diagnostic.

01. POWER SUPPLY



02. CONNECTION



03. CONFIGURATION



BMSline ACTUATORS INTEGRATION IN BUS LINES

BMSline actuators have been designed with an Open Communication Protocol (Modbus RTU on RS-485) for an easy integration in existing BUS communication line and Building Management Systems.

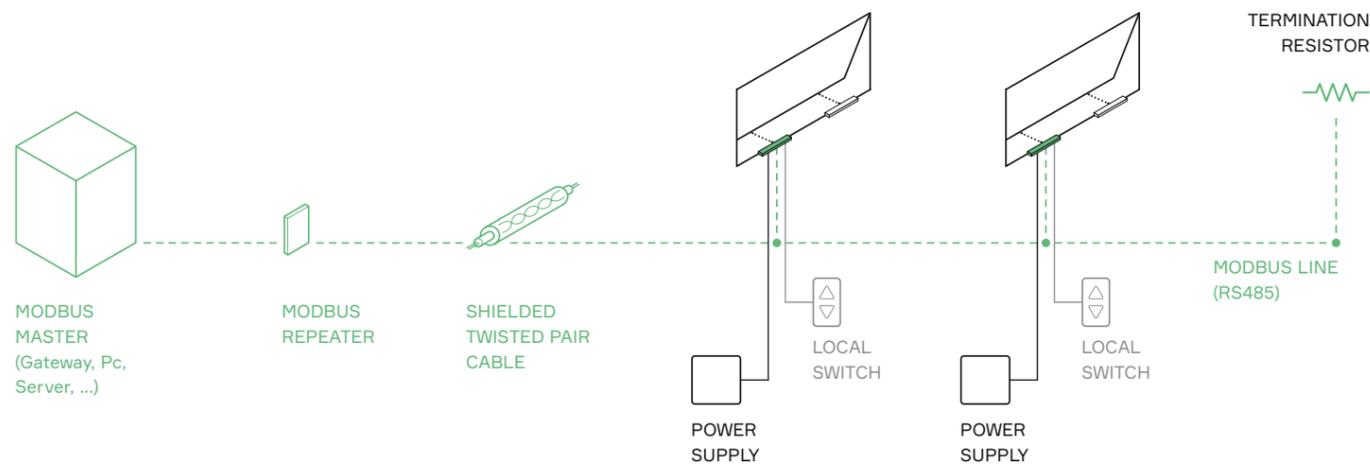
UCS provides Remote Technical Assistance to the System Integrators with regard to:

- › Requirements and functions of UCS actuators and accessories (gateways, repeaters, resistors, controllers, ...).
- › Positioning of actuators in the building (Network addresses for groups of windows, creation of branches, ...).
- › Information about type and characteristics of power supplies and power lines.
- › Commissioning.

BMSline actuators can be easily programmed and configured through the communication cable Modbus RTU anytime by System Integrators; UCS provides a table with the list of Modbus Registers for easy setup and control.

On request, actuators can be configured in the factory and the Network Address can be assigned according to the customer requirements.

The Network address can be also be indicated on a label on the actuator and packaging, for an easier distribution and installation on big projects/ buildings.



BMSline GATEWAYS

The BMSline Gateway allows the translation of BMSline communication BUS protocol (Modbus RTU) to other standard BUS languages (BACnet, KNX, Lonworks ...).

The gateway behaves like a Modbus master towards the actuators, cyclically polling them and making the information accessible to the target technology (other protocols). The process also works in the reverse direction: when the data points of the target technology are changed, the gateway will automatically update the corresponding Modbus registers of the actuators.

The gateway provides a web-type interface that allow to perform configuration and diagnostic operations from any machine provided with network interface and a web browser.



The standards supported currently are:

PROTOCOL	NOTE	MAX ACTUATORs	PART No.
Modbus RTU - LON	Both LON TP/FT-10 and LON/IP	30	41648Q
Modbus RTU - BACnet	Both BACnet MS/TP and BACnet/IP	30	41649R
Modbus RTU - KNXnet/IP	/	30	41650S
Modbus RTU - KNX TP1	To be used with Interface module 41652U	30	41651T
Modbus RTU - BACnet/IP	/	20	41888V
Modbus Repeater	For RS-485 transmission	30	41624S

REPEATERS

MODBUS REPEATER FOR RS-485 TRANSMISSION

The Modbus repeater for RS-485 transmission allows to:

- › Extend the network maximum length.
- › Increase the actuator number on the same line (install one repeater for every group of 30 actuators).
- › Create network branches.

Moreover:

- › The LED lights on the repeater supply a first diagnostic test regarding the network communication state.
- › The repeater divides the network in two sections, protecting from communication disturbance, or voltage dispersion that may damage the network.

