



## READY|EDGE

### System Control and Management Hub

- Operates standalone or linked to a Morningstar Professional Series Charge Controller
- Supports Up to 6 ReadyBlocks for system expansion
- Includes advanced IO and control options
- Supports multiple communication protocols for application data integration
- Includes secure cloud sync and management portal
- Managed via web app or Bluetooth Mobile App

With ReadyEdge, Morningstar has engineered something significant out of solar electric systems: their obsolescence. ReadyEdge is an interface that works with all system devices and makes it possible to add features and functionality precisely when and how it's needed.

For designers of systems for critical applications, this means there's no longer any fear of making the wrong purchase for system integration and control. ReadyEdge is an industrial-oriented solution that provides the flexibility to select and plan options meeting system requirements up front or down the road—and avoid paying twice for redundant functionality between components and add-on accessories. Out of the box, ReadyEdge covers the essential bases for communications and monitoring, and its functionality can easily be expanded at any time in the future through Morningstar's economical snap-in ReadyBlocks.

ReadyEdge comes as a single-point Gateway for system-wide data, with purpose-built software catering to off-grid system needs. All essential functionalities including wireless connectivity and networking protocols (HTTP, SNMP, Modbus) are built into the core device, which can be added onto any Morningstar charge controller with a communications port. ReadyEdge collects and aggregates key system information using LiveView 2.0, the state-of-the-art in UI/UX design, and summarizes data into a dashboard which can be logged for future access. It manages battery monitoring and metrics, supporting all storage chemistries as well as provides advanced load control with paired Morningstar devices. It can also operate completely as a stand-alone device, with no controller or inverter pairing required.

## READY|RAIL

When system needs expand beyond the basics and into requirements such as comprehensive battery management and advanced load control, ReadyEdge becomes a powerful expansion system through exclusive snap-in ReadyBlocks and Morningstar's ReadyRail design. Available ReadyBlock modules currently include:

- **ReadyRelay**—signaling (dry contact), advanced load control
- **ReadyShunt**—battery metering/monitoring, key metrics including lead-acid SOC, energy in/out (Amp hours), current measurement for system sources and loads, and more
- **ReadyBMS**—full communications and control with lithium batteries

Morningstar plans additional I/O and interfaces as well, making ReadyEdge a truly future-proofed component that protects the rest of a system from obsolescence—one purpose-built for the unique needs of off-grid systems today and in the future.

## READY|BLOCK



ReadyRelay, Ready Shunt and Ready BMS blocks, part of the ReadyRail expansion system built into ReadyEdge

## KEY FEATURES AND BENEFITS

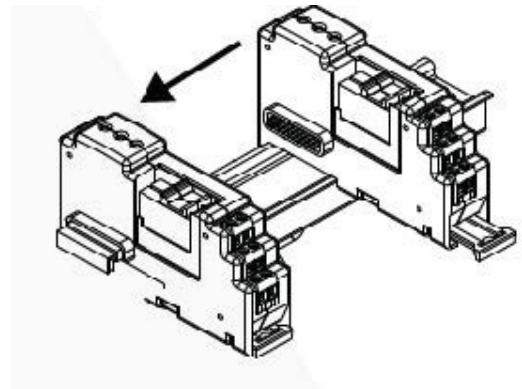
- One device replaces multiple accessories. Eliminates complex and vulnerable wiring and dongles attached to system components. Everything is integrated into a single attached platform accommodating ReadyBlock snap-in modules for additional features
- Pay for what you need up-front, and add key functions and features as system needs change—a truly cost-effective upgrade path.
- Monitors AC and DC voltages, temperatures, cabinet sensors, and is able to access all data from the attached morningstar charge controller such as available PV Power, Battery Charge State and Load State.
- Comes with LiveView 2.0 Web and c App and Companion Mobile App, available for both Android and iOS devices
- Can use Measured Values, System Values, and Schedules in combination, to drive decision making.
- Manages Auxiliary Charging Sources including generators, fuel cells, and AC chargers, to augment renewable sources-- integrates Smart Management software to enable precise control over charging source start and stop
- Event Logger records events for all networked devices and attached ReadyBlocks
- Real-time clock and system-wide information access allows creating schedules, setting load priorities, and programming OFF/ON events using combinational logic
- Interfaces with a Lithium BMS and/or uses a battery shunt to derive critical battery parameters including SOC & SOH

## READY|BLOCK

READY|RELAY

READY|SHUNT

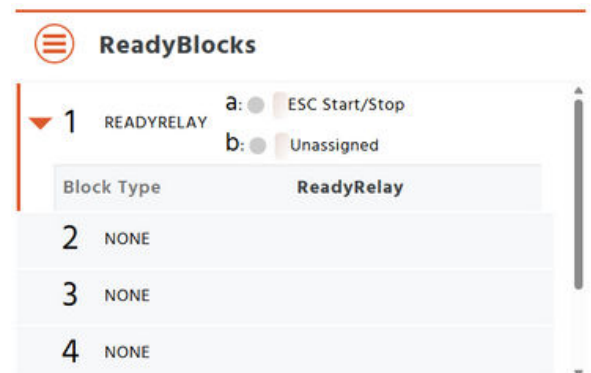
READY|BMS



Blocks can be easily added to the ReadyRail standard DIN-mount and stacked to complete the system

ReadyBlock expansion modules add new hardware and software functionality to ReadyEdge and other products featuring Morningstar's ReadyRail system. Each block slides onto standard DIN rail and mates directly with ReadyEdge, eliminating the need for additional power or communication cabling. ReadyBlocks are automatically detected when connected and the new functionality is immediately available for configuration using the same ReadyEdge user interfaces.

Pick and choose from Morningstar's selection of blocks to customize.



## Specifications

ReadyBlocks	Description	Physical I/O	Functions
<b>ReadyRelay</b>	Adds programmably-controlled dry contacts. Relays are replaceable without tools or disassembly. Additional ReadyRelays can be added to expand the number of dry contacts. ReadyBlock is automatically detected, and control of the relays is configured through the ReadyEdge user interfaces	(2) Relays 6A @ 250 Vac 6A @ 30 Vdc 200 mA @ 110 Vdc SPDT:NO/COM/NC contacts	<ul style="list-style-type: none"> <li>• Generator Signaling</li> <li>• Load control</li> <li>• Alarm Signaling</li> <li>• Manual, Remote Control</li> </ul>
<b>ReadyShunt</b>	Adds high-precision current shunt measurement capabilities to ReadyEdge. Additional ReadyShunts can be added to expand the number of shunt inputs. ReadyShunt computes battery SOC and other metrics which are integrated seamlessly with ReadyEdge functionality	(2) High-precision current shunt inputs	<ul style="list-style-type: none"> <li>• Battery State of Charge and other metrics</li> <li>• Battery NET current/energy</li> <li>• Branch Current Measurement and monitoring</li> <li>• Current-based decision logic and control</li> </ul>
<b>ReadyBMS</b>	Provides correct communication ports to interface with the BMS of select battery partners* ReadyBMS hardware and firmware work seamlessly with ReadyEdge, aligning BMS data with ReadyEdge functionality	CAN & EIA-485 Communication Interfaces. Pinouts and cabling for plug-and-play connectivity	Lithium Battery Management System (BMS) Data Interface for: <ul style="list-style-type: none"> <li>• SOC / SOH visibility</li> <li>• Decision-making logic and control</li> </ul>

\* Morningstar's Energy Storage Partner Program (ESP) identifies battery suppliers that have been qualified and tested to work with our equipment

## Specifications

### ReadyEdge

<b>Mechanical</b>	Dimensions	15.3 x 8.60 x 3.0 cm / 6.04 x 3.37 x 1.2 in
	Mounting	35mm DIN Rail (2 lengths included)
	Weight	0.13 kg / 0.28 lbs.
<b>Power</b>	DC input supply voltage range	8-72 Vdc
	Typical self-consumption	< 2 Watts
	Maximum self-consumption	14 Watts (w/12V output @ maximum power output)
<b>Input/Output</b>	Programmable DC output	(1) 12 Vdc / 1 Amp max.
	Programmable digital inputs	(6) dry contact inputs
	Tank level sensor input (resistive)	(1) US/Euro std. or Custom <ul style="list-style-type: none"> <li>• SAE (USA): 33 to 240ohm</li> <li>• EU: 0 to 180ohm</li> </ul>
	AC voltage input detection	(1) 0-240 Vac nominal
	DC voltage input monitoring	(3) 8 - 80Vdc input range
	Temperature sensor inputs	(2) MS RTS Inputs - One Internal Temp Sense
<b>Data &amp; Communications</b>	Communication Ports:	(2) Morningstar MeterBus/Serial (shared RJ-11) (1) Ethernet (RJ-45) Bluetooth LE MMC External Flash Memory EIA-485
	Proprietary:	ReadyRail Bus (2) MS-CAN
	Communication Protocols:	HTTP for Local LiveView Web App SNMP v2c and v3 MODBUS IP MODBUS Serial MQTT for Cloud Data Sync
<b>Environmental</b>	Operating temperature range:	-40°C to +60°C
	Storage temperature range	-55°C to +80°C
<b>Expansion options</b> (can support 6 Optional ReadyBlocks)	Humidity	100% non-condensing
	ReadyShunt	(2) high-precision shunt inputs
	ReadyBMS	CAN & EIA-485 interface for Lithium Battery Comm Link
	ReadyRelay	(2) Dry contacts for alarming & control
<b>Warranty</b>	5 years	Contact Morningstar or your authorized distributor for complete terms