



**ELIMINATES HAZARDS.  
MAXIMISE SPEED & PRODUCTIVITY.**  
INTELLIGENT ROCKBREAKER CONTROL FOR BOOM SYSTEMS.



# ROCKLOGIC™ FEATURES

## REMOVE YOUR PERSONNEL FROM HAZARDOUS ENVIRONMENTS WITH REMOTE OPERATION

Rockbreaking operations are hazardous and demanding on operators. RockLogic remote operation removes the operator from the immediate vicinity of the rockbreaker to a remote location. This eliminates hazards to the operator, reduces travel time to and from site. RockLogic also provides a bypass mode allowing fall-back for maintenance operations.

Remote operations could be as far away as a remote operation center located thousands of kilometers away, or as close as an operation center at site, or a combination of both including radio controller for site use. Why send the operators to the controls, when you can take the controls to the operators,

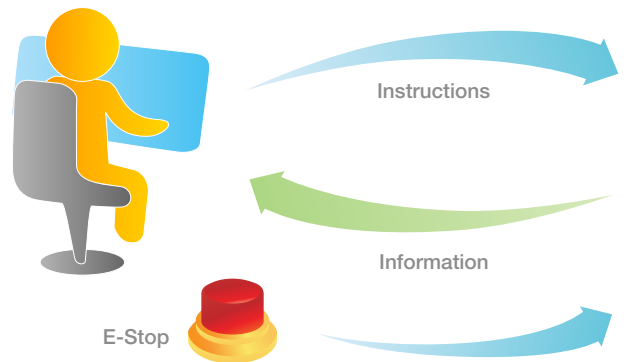
You can operate up to 4 controllers from the single desk using our slimline controller (based on one at a time) for sites with more than one rockbreaker. With the added "audio kit" the controller can support a headset giving the operator full audio feedback enhancing rockbreaking efficiency.

### REMOTE OPERATION



Plant & Vehicle Signals

Operation Workstation (Remote location)



## IMPROVE ROCKBREAKER EFFICIENCY WITH AUTOMATED MOVEMENT

Go from park to deploy and back to park with a press of a button – minimising crushing delays.

When operating Rockbreakers remotely, parking the rockbreaker is often a tricky maneuver, with one touch park and deploy the Rockbreaker simply puts itself away after clearing blockages.

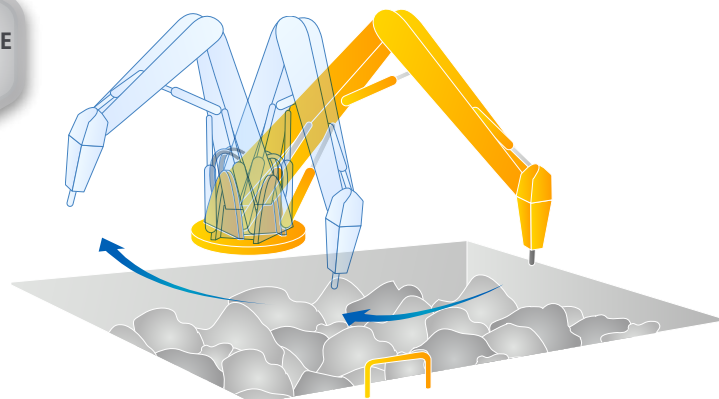
### AUTOMATED MOVEMENTS

## REDUCE THE COST OF YOUR ROCKBREAKER MAINTENANCE PROGRAM

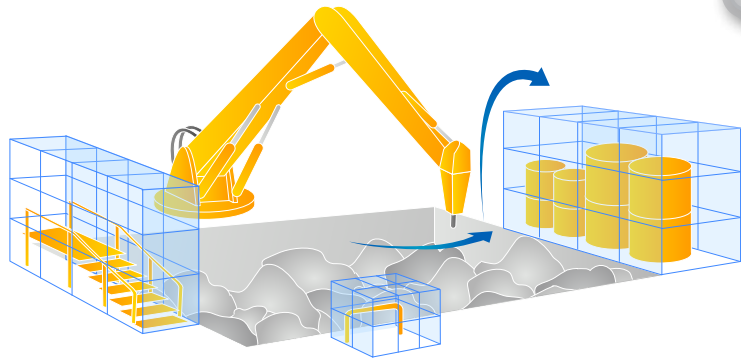
Smoother rockbreaker movements, cylinder sensing, data logging and collision avoidance extend the machine's life, maintenance periods and dramatically reduce the on site maintenance costs.

RockLogic also provides a bypass mode allowing fallback for maintenance operations.

### MAINTENANCE PROGRAM



### COLLISION AVOIDANCE



### ELIMINATE SITE & ROCKBREAKER DAMAGE WITH COLLISION AVOIDANCE

Prevent unnecessary downtime by eliminating damage to the rockbreaker and/or surrounding plant equipment with customised collision avoidance.

3D scan or CAD data is used to model your site to create a collision scene. The 3D model is loaded into the system preventing any part of the Rockbreaker contact objects in the collision scene. The collision scene is often mapped with bin walls, hand rails, camera posts, crusher spider and mantle etc giving remote operators greater confidence when operating remotely using cameras.

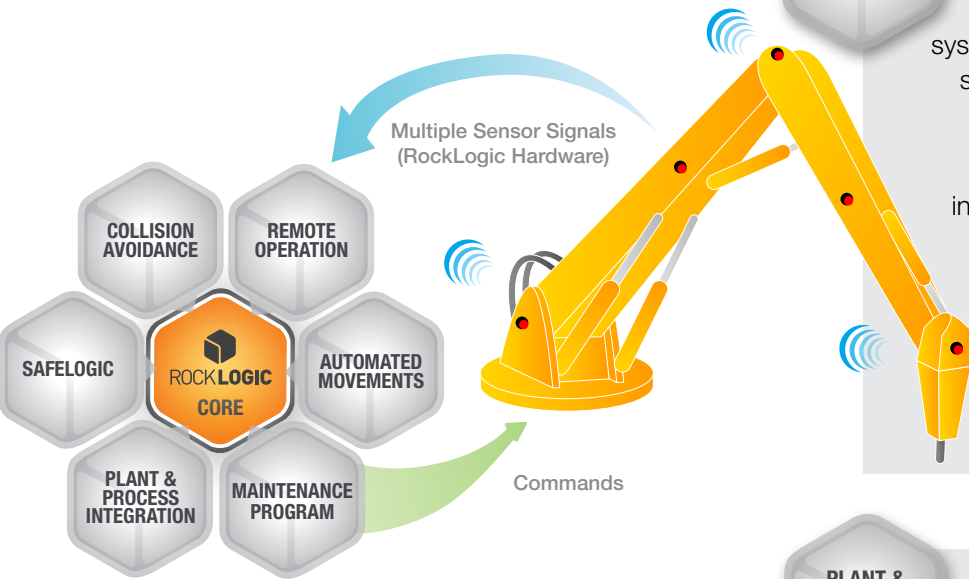
### SAFELOGIC

### INTEGRATE WITH YOUR SAFETY SYSTEMS

Integrated safe machine shutdown systems, integrated with safety gates, 'E' stops and slew limiting proxies, reduce risks and save lives.

The added incentive of remote operation is to remove the operator from potential hazards, including; fly-rock, heat, hazardous atmospheres, ground disturbances and noise.

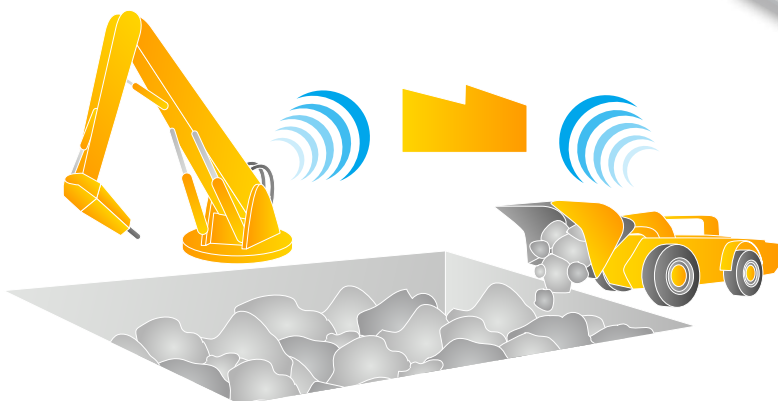
Transmin has extensive experience with remotely operating Rockbreakers and we have integrated the various features into our safety system to suit most application.

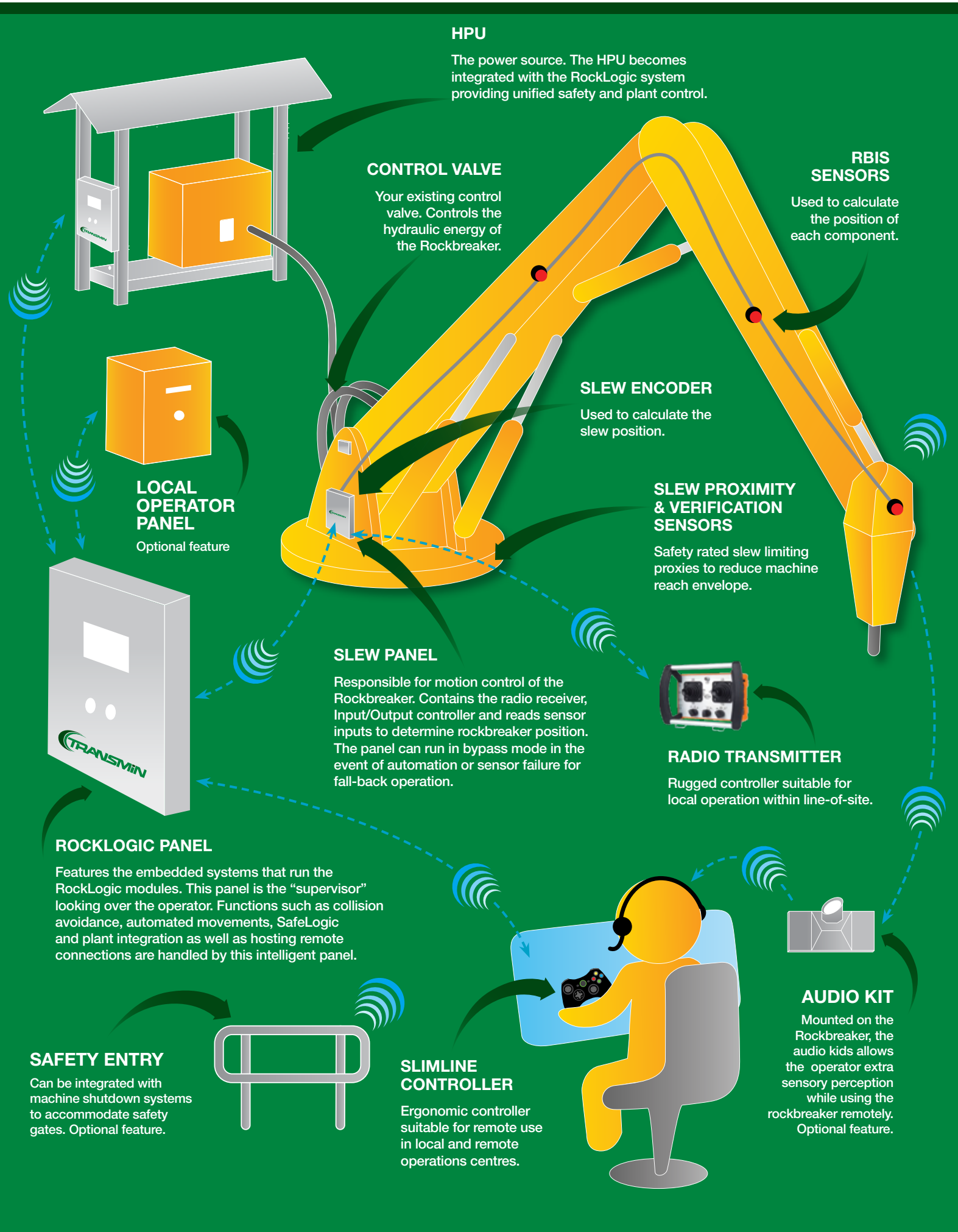


### PLANT & PROCESS INTEGRATION

### IMPROVE COMMUNICATION BETWEEN EQUIPMENT WITH PLANT & PROCESS INTEGRATION

Signals to and from vehicles and plant equipment, can automatically retract the rockbreaker for continuous crushing operation. The system utilises control signals from both the plant control system and the automated movement system to ensure maximum throughput and minimal delays to crushing - resulting in significant long-term productivity gains.





### HPU

The power source. The HPU becomes integrated with the RockLogic system providing unified safety and plant control.

### CONTROL VALVE

Your existing control valve. Controls the hydraulic energy of the Rockbreaker.

### RBIS SENSORS

Used to calculate the position of each component.

### LOCAL OPERATOR PANEL

Optional feature

### SLEW ENCODER

Used to calculate the slew position.

### SLEW PROXIMITY & VERIFICATION SENSORS

Safety rated slew limiting proxies to reduce machine reach envelope.

### SLEW PANEL

Responsible for motion control of the Rockbreaker. Contains the radio receiver, Input/Output controller and reads sensor inputs to determine rockbreaker position. The panel can run in bypass mode in the event of automation or sensor failure for fall-back operation.

### RADIO TRANSMITTER

Rugged controller suitable for local operation within line-of-site.

### ROCKLOGIC PANEL

Features the embedded systems that run the RockLogic modules. This panel is the "supervisor" looking over the operator. Functions such as collision avoidance, automated movements, SafeLogic and plant integration as well as hosting remote connections are handled by this intelligent panel.

### SAFETY ENTRY

Can be integrated with machine shutdown systems to accommodate safety gates. Optional feature.

### SLIMLINE CONTROLLER

Ergonomic controller suitable for remote use in local and remote operations centres.

### AUDIO KIT

Mounted on the Rockbreaker, the audio kits allows the operator extra sensory perception while using the rockbreaker remotely. Optional feature.

# OPTIONS



## 3D Visualisation

The RockLogic HMI & 3D visualisation allows remote operators to view the boom in an immersive 3D environment. This provides information about the location of the boom relative to the surrounding structures allowing the operator to view the scene from multiple viewports (e.g. plan view, side view or perspective). The 3D visual enhanced the effectiveness of remote operators by allowing them to view the Rockbreaker within the site surroundings from any angle.

## Safety Gate Reset Panels

Most remotely operated Rockbreaker's will use safety gates to protect personnel from Rockbreaker contact when used remotely. Our reset panels are modular, and can easily be installed in a series. If you need one or three safety gates, simple daisy chain subsequent safety gate reset panels. Each panel provides local input for the dual channel safety gate switch which is provided as part of the kit.

## Local Operator Panel

Storage of the radio controller is often a challenge for most sites. The local operator panel provides a safe and secure place to store the radio controller, as well as keep a spare battery charged using the built in GPO power outlet. Standard indication is system mode and alarm status, as well as an alarm reset button followed up by a ESTOP installed on the door.

## Operator Training and Support

Transmin operator training material is customised to suit your installation.

Operator training sessions include theory and practical assessment. Transmin includes the use of our own Rockbreaker to be used remotely for the practical component. Sessions can be held anywhere with a reasonable internet connection. This ensures site can continue on operating whilst the operators make use of our own Rockbreaker.

## RockLogic Support

Transmin offers two levels of support depending on your needs.

### Level 1 inclusions

- ▶ Unlimited free remote telephone support during business hours
- ▶ Discounts on software updates

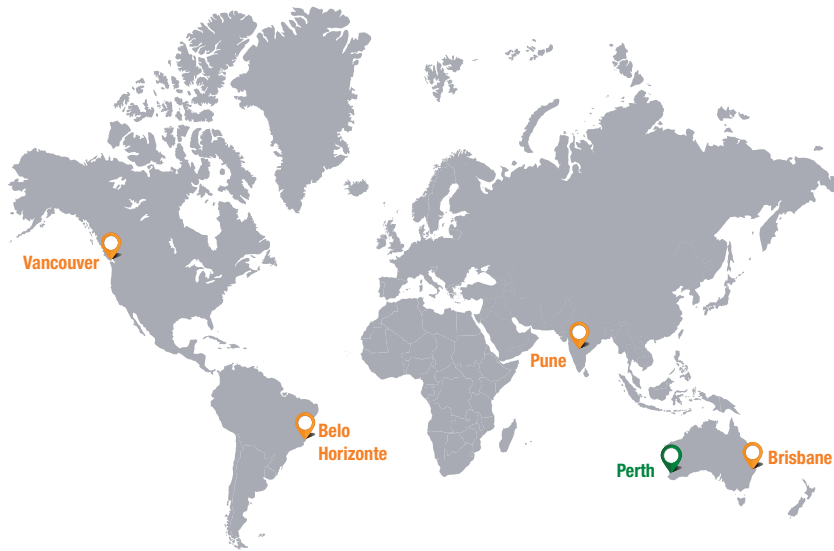
### Level 2 inclusions

- ▶ Unlimited free remote telephone support during business hours
- ▶ Free on software updates
- ▶ Discounts on site rates
- ▶ Free remote adjustments to the system configuration
- ▶ Free annual onsite audit and inspection\*
- ▶ Free annual training for operators with access to our own Rockbreaker for the practical assessment\*\*

\* Flights, on-site transport, meals and accommodation not included.

\*\* To be held at Transmin premise. Additional costs if to be held at site. Remote access to the RockLogic system must be provided in order to facilitate remote support. See the RockLogic Support Agreement brochure for more details.

\*\*\* Onsite services (training and audit) must be completed in the same site visit.



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