

FEASIBILITY STUDY PETRA DIAMONDS

Conveyor Belt Application

integraTM

intelligent fixed speed motor control



FEASIBILITY STUDY



Objective

Investigate the saving capability of Integra installed on an 18.5kw motor driving a conveyor belt. Petra Mine has 30+ Conveyor belts.

Description of application:

The diamond ore gets fed through a scrubber, which breaks it down into smaller pieces, these pieces then fall through the scrubber walls onto a conveyor belt below which then transports it to be processed.

Key Points

- Record reduction of in rush current
- Record reduction of running current
- Record reduction of kW
- Record reduction of kVarL
- If possible the heat will also be recorded



Key Benefits



Soft Start

Integra Softstarts the conveyor belts, reducing mechanical wear and tear + reduces peak demand.



Energy Saving

Through the Loading cycle, the Integra unit will reduce the energy consumed by the conveyor belts.



Auto Switch Off

When the conveyor belts are left running, the Integra unit will automatically detect for this and switch the conveyor belts off.



ROI

Return On Investment 6 Months.

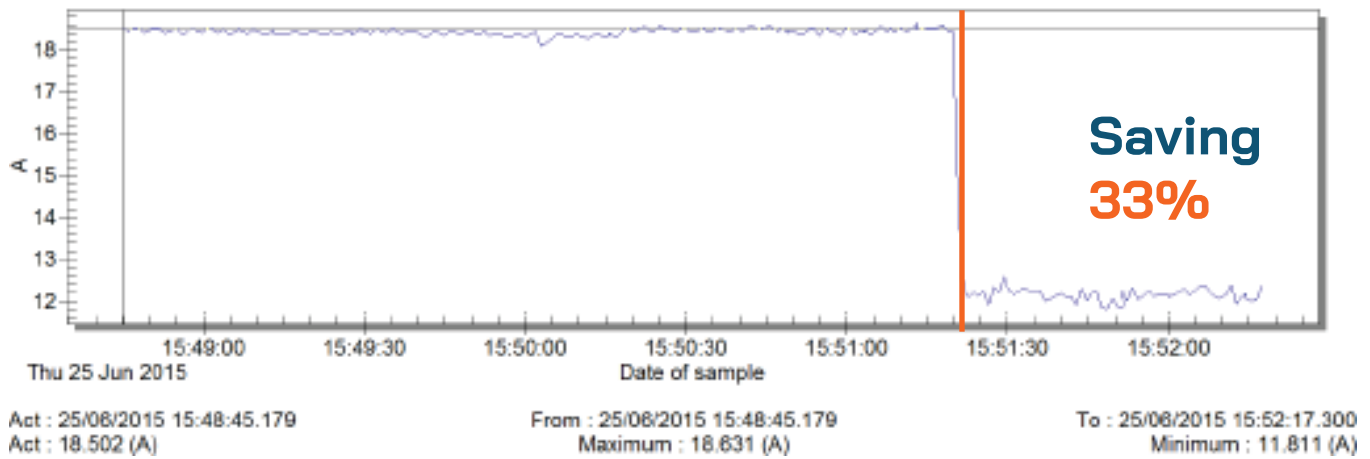


Savings

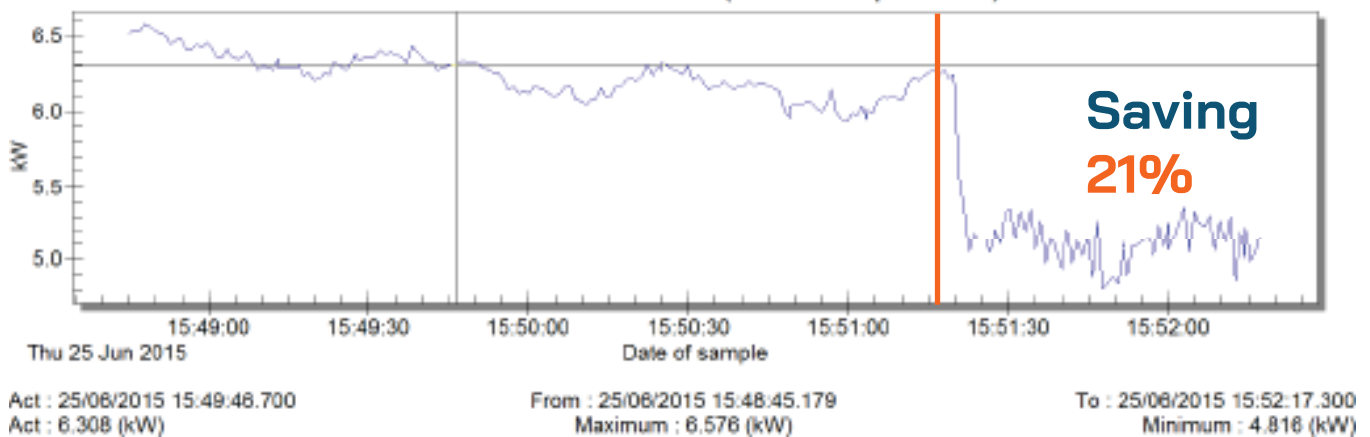
Savings Gained.

Analysis

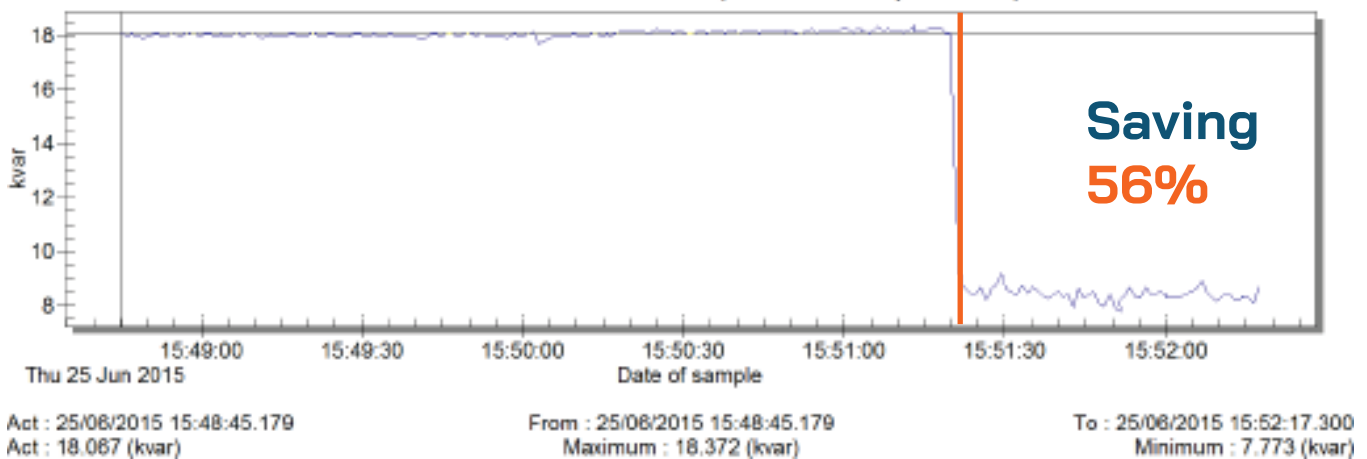
Petra Diamonds Current.STD (Current: Triphasic)



Petra Diamonds Kw.STD (Power: Triphasic +)



Petra Diamonds Kvar.STD (Power L: Triphasic +)



Total Cost of Ownership Tool

Integra Out	6.3 kW
Integra In	5kW
Savings	1.3kW
Unit Price of Electricity	ZAR 0.87
Working Hours/Daily	24
Daily Savings	ZAR 27.14
Working Days/Annual	364
Duty Cycle	100%
Timed Cut Off (hrs saving per day)	0.0hrs

ENERGY SAVING	CO2 SAVING (kg)
21%	46469.28

Integra Price	ZAR 14,000.00
Installation	ZAR 4,000.00
Delivery	ZAR 0.00
Total Cost	ZAR 18,000.00

12 Month Saving	ZAR 9,880.42
60 Month Saving	ZAR 49,402.08
NPV	ZAR 31,402.08
IRR	55%
Cost of Delay	ZAR 823.37
ROI	22