# Case Study

# Par-Pak Granulators

**Manufacturer: Cumberland**

# Case Study

Par-Pak has 2 large granulators installed on its site in Milton Keynes, as is the normal situation in a plastics factory, the granulators were generally left running and never switched off. The granulators recycle the plastic film which is left over from the process of making plastic food containers.

It's also a space saving exercise to reduce the size of the excess plastic reels, this has a price tag in machine operating time. The integra units reduce the running cost as well as switching the granulators off after 8 min of inactivity.

The Feeding conveyors are also switched off to save energy and also to prevent the granulators being feed accidentally when not running. The Granulators and Conveyor belts are then automatically switched back on when a new reel is put on the Conveyor belt. Suresense is saving 75%+ on these granulators;

Sequence of events in achieve these savings;

- **Installed a 90kw Integra unit.**

- **The Integra saves energy through the loading cycle and when Idle.**

- **The Integra then monitors for a long period of off load and switches the Granulator off.**

- **The Conveyor belt is also switched off by the Integra unit**

- **The Integra unit then waits for the proximity sensor to detect presents of material.**

- **The conveyor belt is automatically started as well as the main motor.**

- **The process starts once again.**

- **Installing this intelligence save a lot of money.**
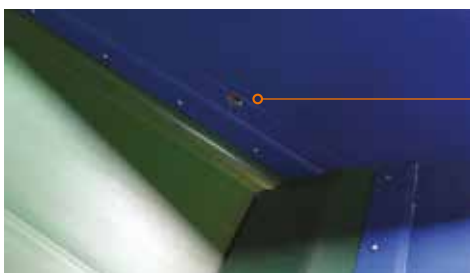


**Zerma Detector**
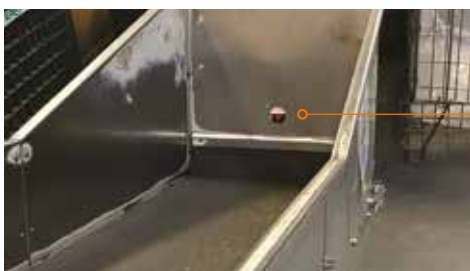


**Cumberland Detector**

## Key Benefits

**Soft Start**

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

**Energy Saving**

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

**Auto Switch Off**

When the granulator is left running waiting for more product, the Integra unit will automatically detect for this and switch the granulator off.

**6 MONTHS**

**ROI**

Return On Investment 6 Months.

**75% PLUS**
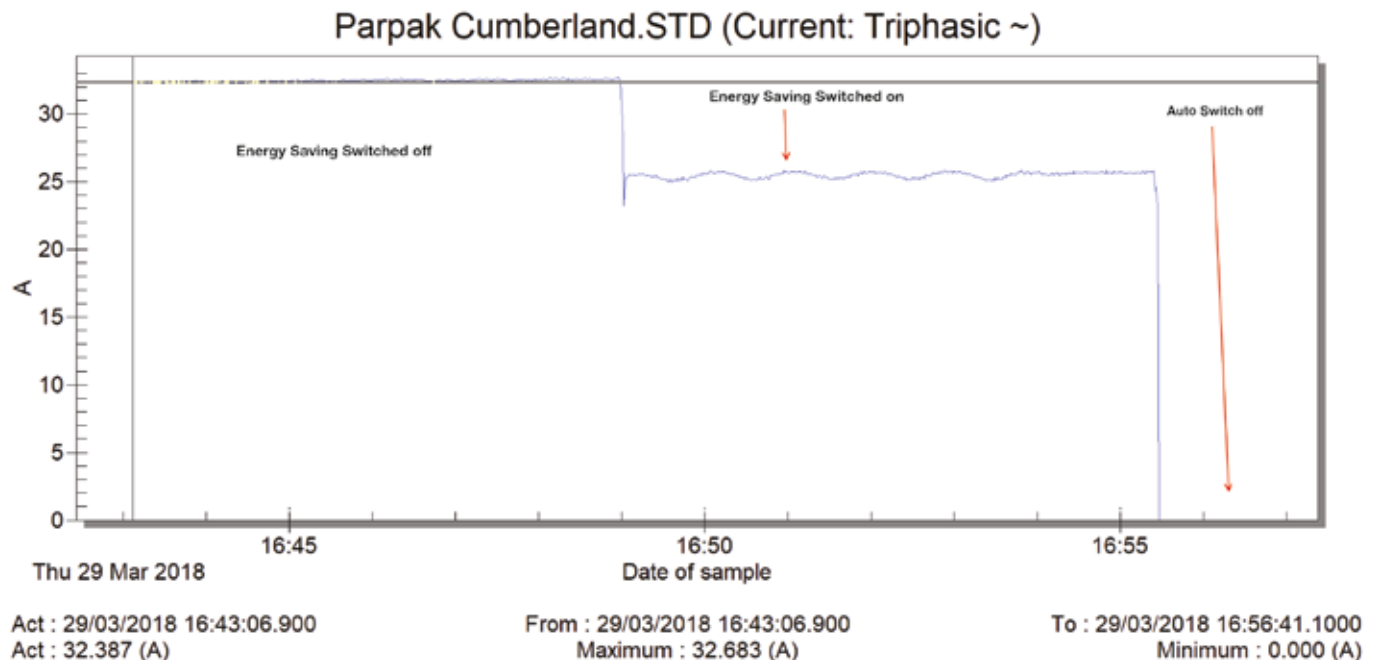
**Savings**

Savings Gained.
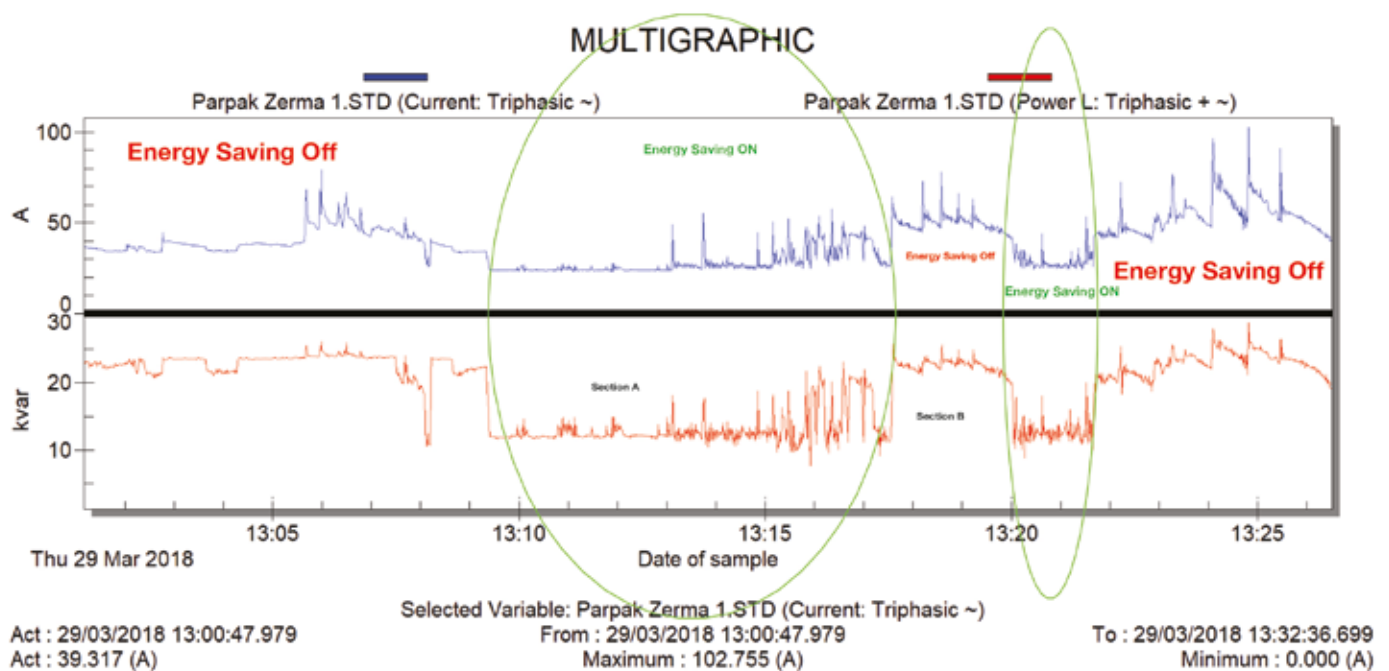
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# Test Conditions

## Parpak Cumberland. STD

Current: Triphasic ~

## Parpak Zerma 1. STD

Multigraphic

# Test Conditions

## Off Load Sequence and Savings

### Before

| 1 | Date | Time | Current: Triphasic ~ (A) | Power: Triphasic + ~ (kW) | Power L: Triphasic + ~ (kvar) |
|---|---|---|---|---|---|
| 308 | 29/03/2018 | 17:35.8 | 57.31 | 23.104 | 25.789 |
| 309 | 29/03/2018 | 17:36.8 | 57.966 | 28.509 | 24.146 |
| 310 | 29/03/2018 | 17:37.7 | 52.831 | 26.555 | 23.425 |
| 311 | 29/03/2018 | 17:38.7 | 56.731 | 29.651 | 23.9 |
| 312 | 29/03/2018 | 17:39.7 | 52.329 | 26.117 | 23.241 |
| 313 | 29/03/2018 | 17:40.6 | 50.926 | 24.611 | 23.077 |

| 1 | Date | Time | Current: Triphasic ~ (A) | Power: Triphasic + ~ (kW) | Power L: Triphasic + ~ (kvar) |
|---|---|---|---|---|---|
| 446 | 29/03/2018 | 19:48.7 | 44.632 | 18.979 | 21.186 |
| 447 | 29/03/2018 | 19:49.7 | 44.555 | 18.86 | 21.358 |
| 448 | 29/03/2018 | 19:50.7 | 44.337 | 18.978 | 21.021 |
| 449 | 29/03/2018 | 19:51.6 | 44.633 | 18.896 | 21.021 |
| 450 | 29/03/2018 | 19:52.6 | 44.465 | 18.55 | 21.495 |
| 451 | 29/03/2018 | 19:53.6 | 44.324 | 18.402 | 21.067 |
| 452 | 29/03/2018 | 19:54.5 | 43.345 | 18.055 | 20.492 |
| 453 | | Average | 50.38 | 23.80 | 22.64 |
| 454 | | Saving Rate | 39% | 53% | 39% |

### After

| 1 | Date | Time | Current: Triphasic ~ (A) | Power: Triphasic + ~ (kW) | Power L: Triphasic + ~ (kvar) |
|---|---|---|---|---|---|
| 2 | 29/03/2018 | 12:44.3 | 23.839 | 5.167 | 11.836 |
| 3 | 29/03/2018 | 12:45.3 | 24.148 | 5.214 | 12.093 |
| 4 | 29/03/2018 | 12:46.3 | 23.504 | 5.14 | 11.855 |
| 5 | 29/03/2018 | 12:47.2 | 23.594 | 5.077 | 11.544 |
| 6 | 29/03/2018 | 12:48.2 | 24.354 | 5.186 | 12.065 |
| 7 | 29/03/2018 | 12:49.1 | 23.671 | 5.454 | 11.857 |
| 8 | 29/03/2018 | 12:50.1 | 26.142 | 5.389 | 13.751 |

| 1 | Date | Time | Current: Triphasic ~ (A) | Power: Triphasic + ~ (kW) | Power L: Triphasic + ~ (kvar) |
|---|---|---|---|---|---|
| 293 | 29/03/2018 | 17:24.2 | 26.799 | 9.411 | 11.302 |
| 294 | 29/03/2018 | 17:25.2 | 28.755 | 10.168 | 13.43 |
| 295 | 29/03/2018 | 17:26.2 | 28.421 | 9.765 | 12.281 |
| 296 | 29/03/2018 | 17:27.1 | 25.165 | 9.934 | 11.122 |
| 297 | 29/03/2018 | 17:28.1 | 28.163 | 10.26 | 12.171 |
| 298 | 29/03/2018 | 17:29.0 | 25.756 | 9.32 | 11.617 |
| 299 | 29/03/2018 | 17:29.0 | 26.49 | 10.213 | 11.38 |
| 300 | | Average | 30.83 | 11.07 | 13.77 |

# Savings with Integra

| | |
|---|---|
| **Current: Triphasic (A)** | **39%** |
| **Power: Triphasic + (kW)** | **53%** |
| **Power L: Triphasic (kvar)** | **39%** |

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# Energy Efficient

This excess consumption is not only an unnecessary cost in your energy bill, but it also serves to damage your equipment as the excess energy is released through the windings of the motor in the form of heat, vibration and noise. Integra will give your motors intelligence through monitoring the load on the shaft of the motor for every cycle of the supply. The Integra will then feed your motors the electricity that they require to run efficiently at any point in the duty cycle.

## Customers

There are a growing number of forward thinking executives and energy consultants who are taking their corporate responsibilities (CSR) very seriously. In an effort to target carbon reduction and increase their company profits, they have chosen Suresense Technologies energy saving solutions. These implementations were viewed as part of their own energy saving strategy and were driven by two other key factor, low risk and high return on investment (ROI).

## Benefits

Integra integrates fully with its surroundings and can even switch your motors off automatically when they are not being used, or use stored energy in certain applications (such as flywheel mechanisms) to reduce your electricity consumption even further.