suresense technologies

Case Study

Granulator

Manufacturer: Blackfriars

integra™

intelligent fixed speed motor control

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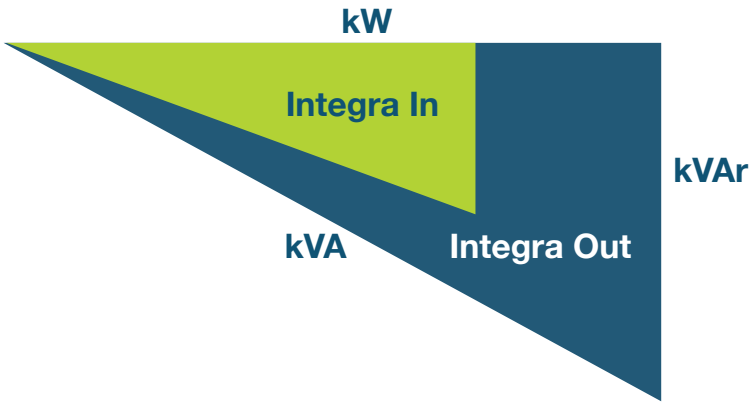
Case Study

Three Blackfriar Granulators are installed in a company called Delta Form who specialise in making thermoformed packaging for the food industry. The Granulators are often left idling for long periods of time and with the Integra units installed the power consumption is reduced by 30%.

The Power triangle is reduced with Integra.



Location

Bridgewater, England

Test Details

Type of Machine:	**Granulator**
Manufacturer:	**Blackfriars**
Motor Size:	**55kW**
Motor Energy Rating:	**IE1**

Reduced Running Temperature

Did you know if you reduce a motors running temperature by 10°C, you increase its life by 50%.

On Load Savings

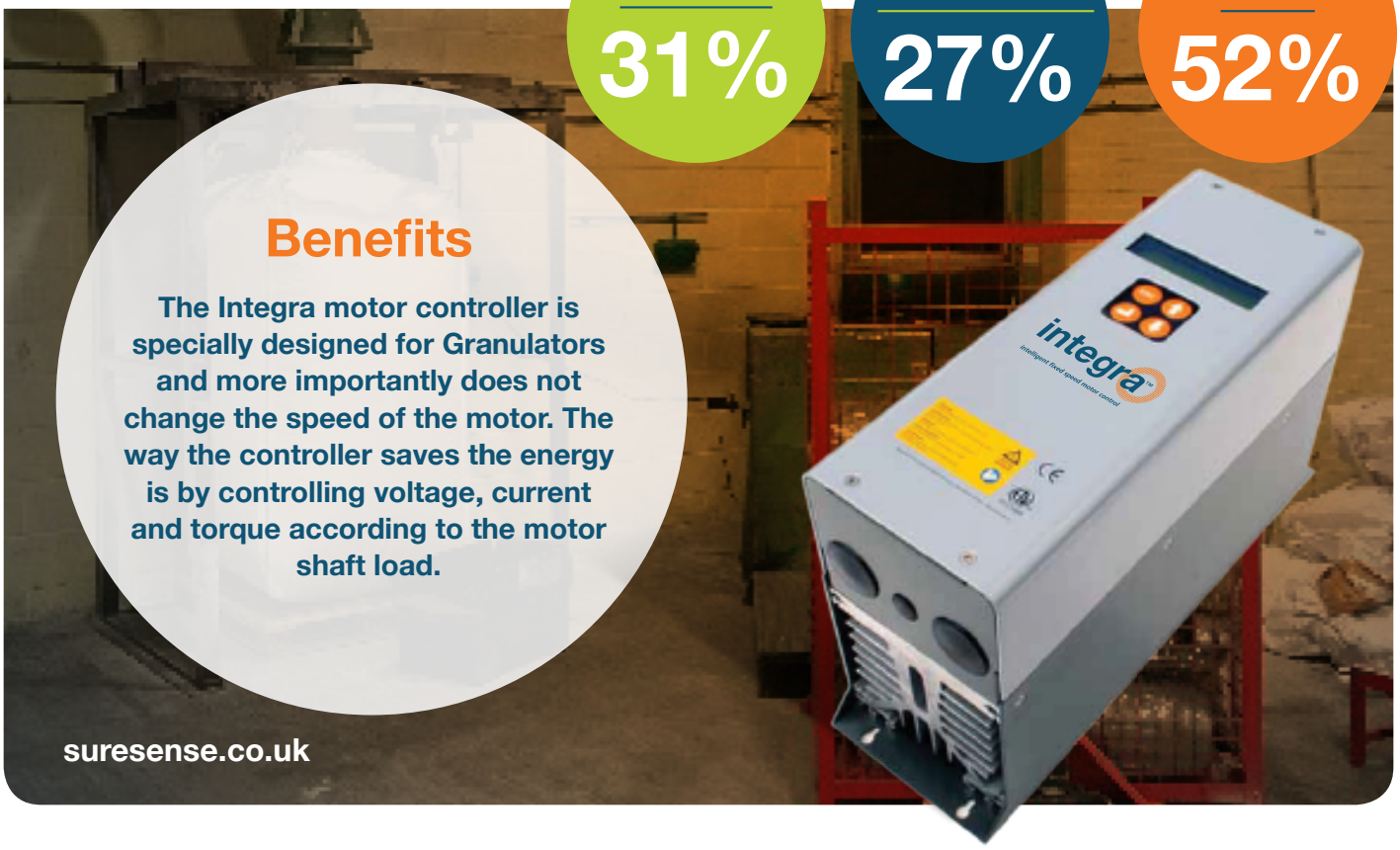
Current 31%

Power kW 27%

kVAr 52%

Benefits

The Integra motor controller is specially designed for Granulators and more importantly does not change the speed of the motor. The way the controller saves the energy is by controlling voltage, current and torque according to the motor shaft load.



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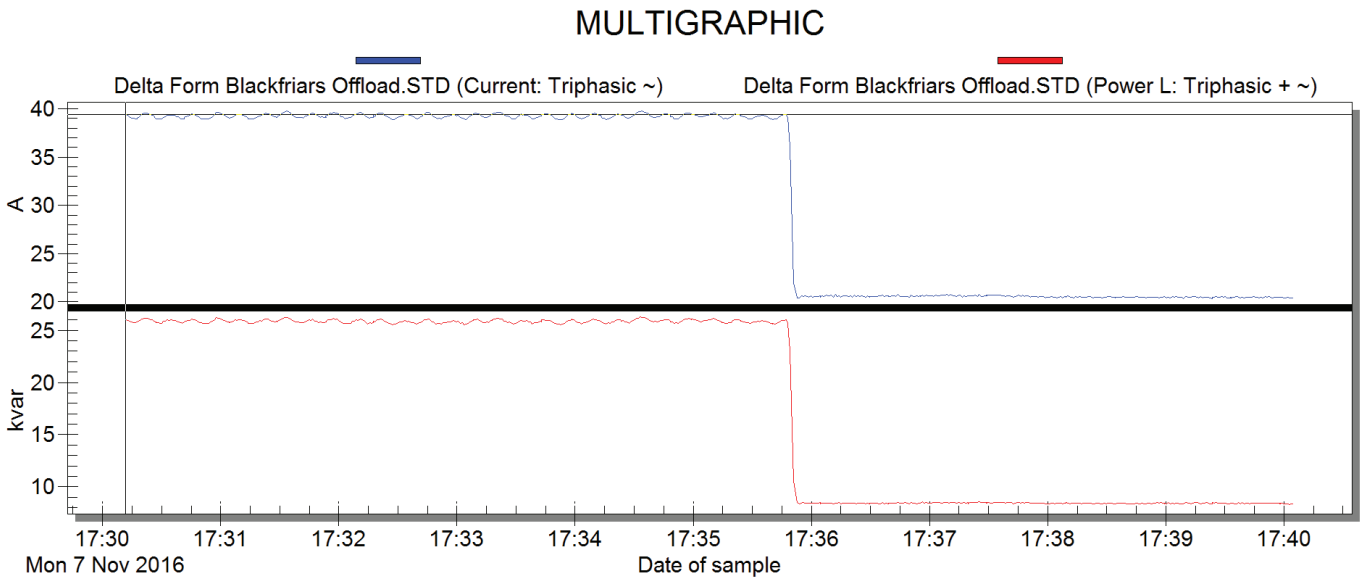
Off Load Savings

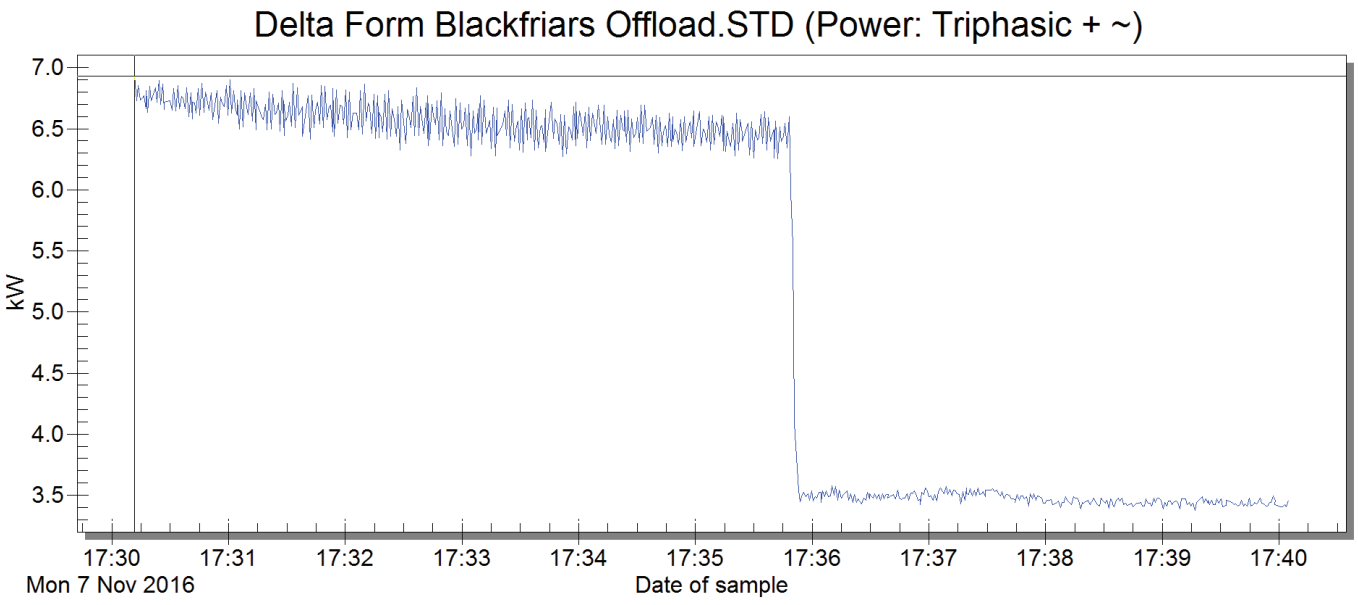
Off Load Current and kVAr Graph:



Selected Variable: Delta Form Blackfriars Offload.STD (Current: Triphasic ~)

Act : 07/11/2016 17:30:11.720	From : 07/11/2016 17:30:11.720	To : 07/11/2016 17:40:04.799
Act : 39.385 (A)	Maximum : 39.746 (A)	Minimum : 20.364 (A)

Off Load kW Graph:



Act : 07/11/2016 17:30:11.720	From : 07/11/2016 17:30:11.720	To : 07/11/2016 17:40:04.799
Act : 6.901 (kW)	Maximum : 6.901 (kW)	Minimum : 3.350 (kW)

Off Load Savings

Without Integra:

Date	Time	Current: Triphasic ~ (A)	Power: Triphasic + ~ (kW)	Power L: Triphasic + ~ (kvar)
07/11/2016	30:15.6	38.999	6.728	25.745
07/11/2016	30:16.5	38.986	6.746	25.736
07/11/2016	30:17.5	38.973	6.636	25.782
07/11/2016	30:17.4	39.037	6.783	25.782
07/11/2016	30:18.4	39.115	6.609	25.864
07/11/2016	30:19.4	39.347	6.819	25.992
07/11/2016	30:20.3	39.449	6.701	26.12
07/11/2016	30:21.3	39.565	6.755	26.175
07/11/2016	30:22.2	39.578	6.81	26.175
07/11/2016	35:39.5	38.934	6.418	25.646
07/11/2016	35:40.4	38.87	6.472	25.591
07/11/2016	35:40.4	38.857	6.234	25.646
07/11/2016	35:41.4	38.922	6.536	25.618
07/11/2016	35:42.3	38.96	6.226	25.701
07/11/2016	35:43.3	39.102	6.49	25.746
07/11/2016	35:44.2	39.269	6.372	25.91
07/11/2016	35:45.2	39.36	6.408	25.974
07/11/2016	35:46.2	39.411	6.518	25.965
07/11/2016	35:47.1	39.411	6.317	26.056
	Average	**39.25**	**6.55**	**25.88**

With Integra:

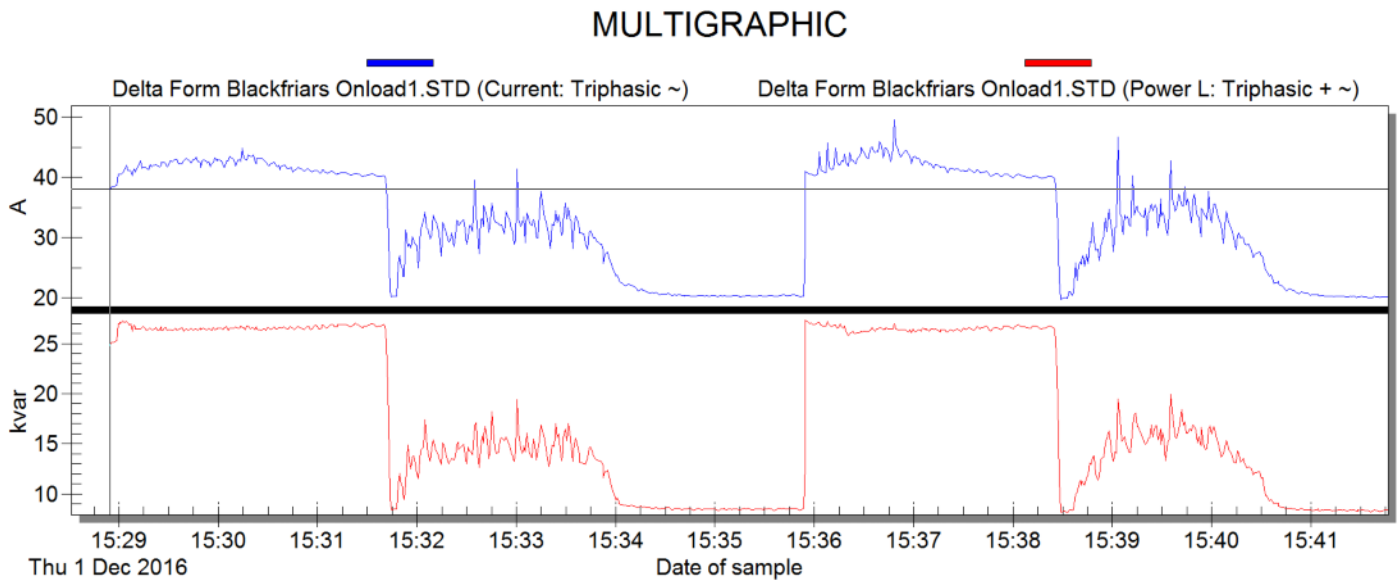
Date	Time	Current: Triphasic ~ (A)	Power: Triphasic + ~ (kW)	Power L: Triphasic + ~ (kvar)
07/11/2016	36:02.6	20.582	3.45	8.417
07/11/2016	36:03.5	20.595	3.496	8.415
07/11/2016	36:04.5	20.66	3.494	8.462
07/11/2016	36:04.4	20.48	3.413	8.371
07/11/2016	36:05.4	20.634	3.505	8.436
07/11/2016	36:06.4	20.569	3.46	8.417
07/11/2016	36:07.3	20.711	3.505	8.444
07/11/2016	36:08.3	20.66	3.459	8.425
07/11/2016	39:55.1	20.467	3.413	8.399
07/11/2016	39:56.1	20.467	3.414	8.417
07/11/2016	39:57.1	20.467	3.469	8.426
07/11/2016	39:58.0	20.48	3.432	8.38
07/11/2016	39:58.0	20.493	3.395	8.416
07/11/2016	40:01.0	20.428	3.375	8.325
07/11/2016	40:01.9	20.467	3.375	8.334
07/11/2016	40:02.9	20.428	3.394	8.307
07/11/2016	40:03.8	20.403	3.376	8.353
07/11/2016	40:04.8	20.441	3.433	8.38
	Average	**20.68**	**3.46**	**8.54**
	Saving Rate	**47%**	**47%**	**67%**

Savings with Integra

Current	**47%**
Power (kW)	**47%**
kVAr	**67%**

On Load Savings Data

On Load Current and kVAr



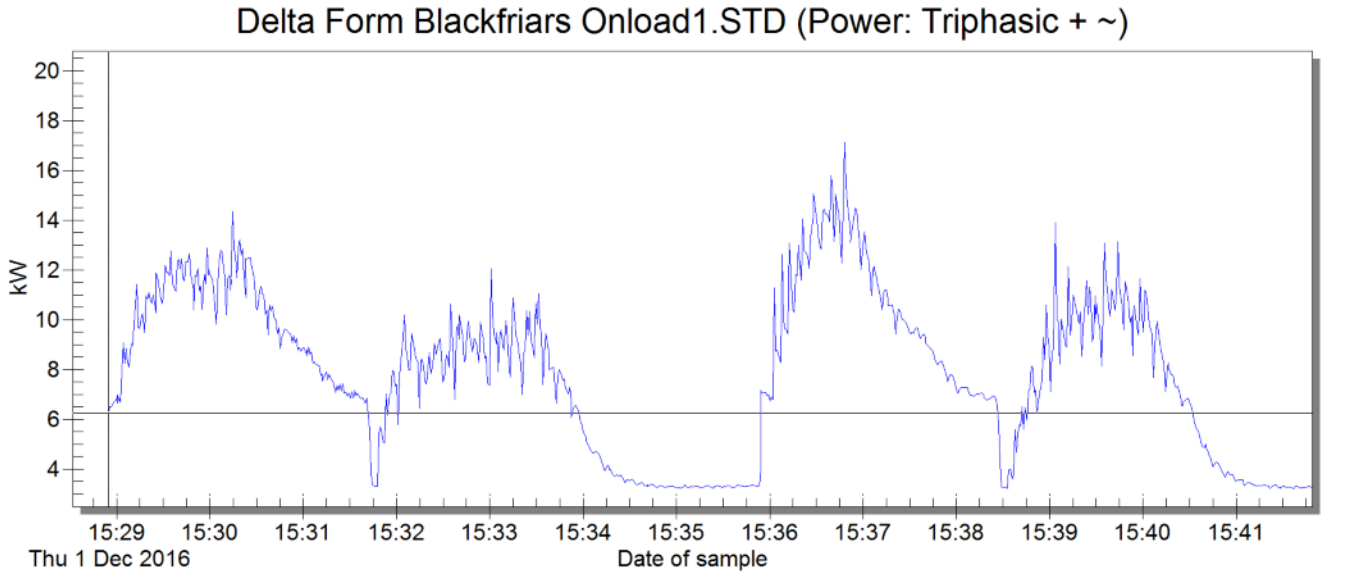
Selected Variable: Delta Form Blackfriars Onload1.STD (Current: Triphasic ~)

Act : 01/12/2016 15:28:54.699
Act : 38.024 (A)

From : 01/12/2016 15:28:54.699
Maximum : 50.416 (A)

To : 01/12/2016 16:09:37.620
Minimum : 19.566 (A)

On Load KW



Act : 01/12/2016 15:28:54.699
Act : 6.261 (kW)

From : 01/12/2016 15:28:54.699
Maximum : 20.048 (kW)

To : 01/12/2016 16:09:37.620
Minimum : 3.141 (kW)

On Load Savings Data

Without Integra

Date	Time	Current: Triphasic ~ (A)	Power: Triphasic + ~ (kW)	Power L: Triphasic + ~ (kvar)
01/12/2016	28:54.7	38.024	6.261	24.79
01/12/2016	28:55.7	38.448	6.507	25.09
01/12/2016	28:56.6	38.448	6.507	25.118
01/12/2016	28:57.6	38.59	6.581	25.21
01/12/2016	28:58.6	38.718	6.717	25.291
01/12/2016	28:59.5	40.492	6.772	26.952
01/12/2016	29:00.5	40.531	7	26.988

Date	Time	Current: Triphasic ~ (A)	Power: Triphasic + ~ (kW)	Power L: Triphasic + ~ (kvar)
01/12/2016	31:32.2	40.595	6.855	26.989
01/12/2016	31:33.2	40.608	7.156	26.944
01/12/2016	31:34.1	40.402	6.946	26.861
01/12/2016	31:35.1	40.26	7.064	26.687
01/12/2016	31:36.1	40.132	6.928	26.641
01/12/2016	31:37.0	40.209	6.818	26.733
01/12/2016	31:38.0	40.235	6.873	26.732
01/12/2016	31:39.9	40.351	6.644	26.879
	Average	**41.68**	**9.86**	**26.55**

With Integra

Date	Time	Current: Triphasic ~ (A)	Power: Triphasic + ~ (kW)	Power L: Triphasic + ~ (kvar)
01/12/2016	31:44.7	20.209	3.369	8.408
01/12/2016	31:45.7	20.299	3.303	8.426
01/12/2016	31:46.7	20.338	3.313	8.453
01/12/2016	31:47.6	20.351	3.304	8.517
01/12/2016	31:48.6	25.603	5.422	10.973
01/12/2016	31:49.5	27.083	5.695	12.078
01/12/2016	31:50.5	25.165	5.449	10.827

Date	Time	Current: Triphasic ~ (A)	Power: Triphasic + ~ (kW)	Power L: Triphasic + ~ (kvar)
01/12/2016	34:33.8	20.48	3.403	8.435
01/12/2016	34:34.7	20.389	3.359	8.445
01/12/2016	34:35.7	20.531	3.423	8.544
01/12/2016	34:36.7	20.48	3.414	8.544
01/12/2016	34:37.6	20.595	3.487	8.554
01/12/2016	34:38.6	20.557	3.422	8.562
01/12/2016	34:39.5	20.441	3.348	8.407
01/12/2016	34:40.5	20.454	3.339	8.408
	Average	**28.60**	**7.23**	**12.77**
	Savings Rate	**31%**	**27%**	**52%**

Results:

Current	31% Reduction
Power (kW)	27% Reduction
KVAR	52% Reduction

integra™

intelligent fixed speed motor control

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.

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.

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).

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