

CUMBERLAND

Case Study

Granulator

Manufacturer: Cumberland



integraTM

intelligent fixed speed motor control

Case Study

T Series Granulators are compact granulators for in-line processing of thermoformed scrap, including formed parts in the web with optional paddle rolls. The T Series Granulators are ideal for skeletal scrap with and without formed parts, expanded polystyrene, high impact polystyrene, HDPE, ABS, PET, and CPET. They can be positioned under or in front of the trim process.

The granulator recycles the plastic film which is left over from the process of making plastic pint cups. Anywhere from 20% - 50% of the plastic film needs to be reprocessed in order to prevent wastage.

This particular granulator is the worst case scenario as it has around 50% of the plastic remaining. The Granulated plastic is passed bag to the extrusion department which makes in back into a roll of plastic sheeting.

Location

Runcorn, England

Test Details

Type of Machine: T-Series Granulator

Measurement: Circutor AR5-L

Tester: Suresense

Low Load Savings

Current

57%

Power kW

51%

kVAr

78%

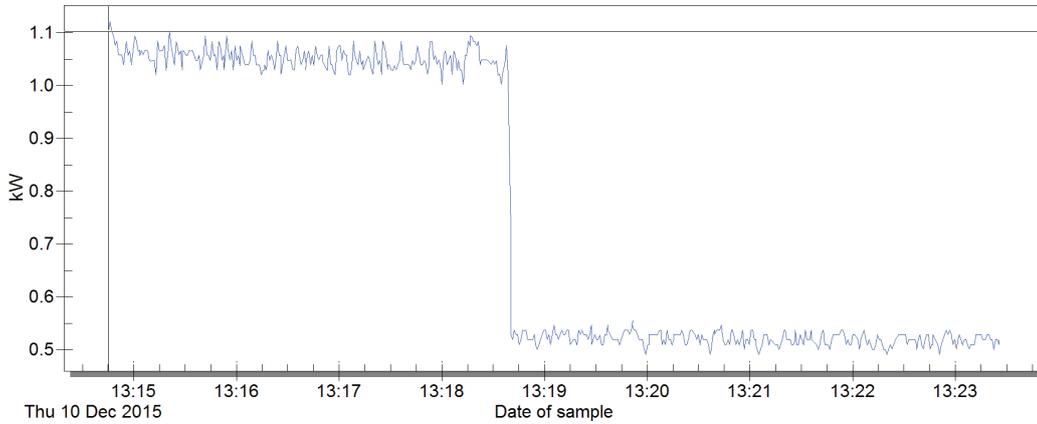
Benefits

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.

Test conditions: Idle

Idle:

Alma Cumberland offload.STD (Power: Triphasic +)



Act : 10/12/2015 13:14:45.220
Act : 1.103 (kW)

From : 10/12/2015 13:14:45.220
Maximum : 1.121 (kW)

To : 10/12/2015 13:23:25.460
Minimum : 0.491 (kW)

Without Integra:

229	10/12/2015	18:22.2	14.802	1.049	10.728
230	10/12/2015	18:24.1	14.828	1.049	10.729
231	10/12/2015	18:25.1	14.815	1.049	10.746
232	10/12/2015	18:26.0	14.841	1.049	10.747
233	10/12/2015	18:27.0	14.802	1.048	10.719
234	10/12/2015	18:28.9	14.854	1.04	10.774
235	10/12/2015	18:29.9	14.841	1.048	10.747
236	10/12/2015	18:30.9	14.854	1.04	10.783
237	10/12/2015	18:31.8	14.828	1.047	10.755
238		Average	14.84	1.05	10.76

With Integra:

508	10/12/2015	23:17.8	6.332	0.519	2.354
509	10/12/2015	23:18.7	6.345	0.528	2.354
510	10/12/2015	23:19.7	6.345	0.528	2.364
511	10/12/2015	23:20.7	6.346	0.519	2.345
512	10/12/2015	23:21.6	6.345	0.519	2.382
513	10/12/2015	23:22.6	6.333	0.5	2.354
514	10/12/2015	23:23.5	6.332	0.519	2.363
515	10/12/2015	23:24.5	6.345	0.519	2.354
516	10/12/2015	23:25.5	6.371	0.51	2.373
517	10/12/2015	23:25.4	6.332	0.519	2.373
518		Average	6.35	0.52	2.36
519		Saving	57%	51%	78%

Savings with Integra

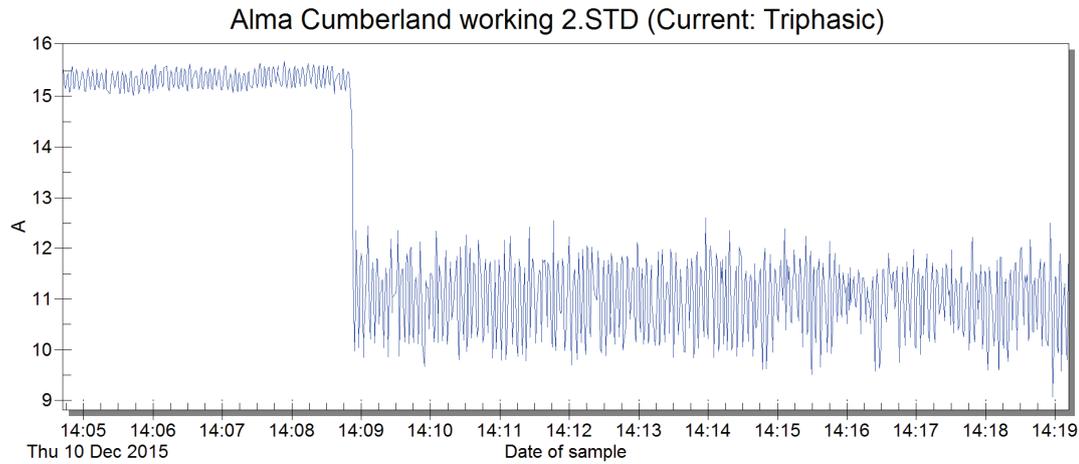
Current **57%**

Power (kW) **51%**

KVAR **78%**

Test conditions: Under load

Under load:



Act : 10/12/2015 13:58:40.740
Act : 11.288 (A)

From : 10/12/2015 13:58:40.740
Maximum : 15.704 (A)

To : 10/12/2015 14:35:40.700
Minimum : 8.817 (A)

Without Integra:

1	Date	Time	Current: Triphasic (A)	Power: Triphasic + (kW)	Power L: Triphasic + (kvar)
262	10/12/2015	08:30.3	15.523	3.632	10.582
263	10/12/2015	08:31.3	15.6	3.723	10.609
264	10/12/2015	08:32.2	15.279	3.186	10.583
265	10/12/2015	08:33.2	15.215	3.011	10.592
266	10/12/2015	08:34.2	15.575	3.651	10.591
267	10/12/2015	08:35.1	15.588	3.696	10.573
268	10/12/2015	08:36.1	15.266	3.185	10.537
269	10/12/2015	08:37.0	15.047	2.819	10.509
270	10/12/2015	08:37.0	15.279	3.276	10.518
271	10/12/2015	08:40.0	15.446	3.613	10.509
272	10/12/2015	08:40.9	15.459	3.614	10.518
273	10/12/2015	08:41.9	15.137	2.966	10.509
274	10/12/2015	08:42.9	15.137	3.002	10.527
275	10/12/2015	08:43.8	15.536	3.751	10.519
276		Average	15.34	3.34	10.54

With Integra:

1	Date	Time	Current: Triphasic (A)	Power: Triphasic + (kW)	Power L: Triphasic + (kvar)
535	10/12/2015	13:26.4	10.323	2.692	4.491
536	10/12/2015	13:27.4	11.984	3.442	5.304
537	10/12/2015	13:28.3	11.765	3.515	5.185
538	10/12/2015	13:29.3	10.593	2.948	4.482
539	10/12/2015	13:30.3	9.847	2.564	3.669
540	10/12/2015	13:31.2	10.876	2.966	4.308
541	10/12/2015	13:32.2	11.919	3.432	5.222
542	10/12/2015	13:33.1	11.211	3.213	4.866
543	10/12/2015	13:34.1	10.297	2.611	4.171
544	10/12/2015	13:35.1	10.58	2.802	4.098
545	10/12/2015	13:36.0	11.584	3.275	5.358
546	10/12/2015	13:36.0	11.571	3.432	5.011
547	10/12/2015	13:39.0	9.963	2.583	4.043
548		Average	11.04	3.05	4.63
549		Savings	28%	9%	56%
550					

Savings with Integra

Current 28%

Power (kW) 9%

KVAR 56%



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.

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 factors, 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.

