

**Danfoss Industries** 

## Summary

Metric	Value
Total TDMS files	59
Highest Overall Efficiency	78.41%
Number of Outliers	2
Test Status	Pass
Outlier Count Condition	Outliers < 5

#### **Performance Data**

TDMS file	Mean_Main_Fl	Mean_RPM	Mean_Outlet_P	Mean_Displace	Mean_Inlet_Te
	ow_GPM		ressure_Psi	ment	mp_F
P16_HY5_Eff_ 180F_50%_10 00rpm_1000psi .tdms	3.08736167638 0636	1004.90440299 3996	1009.61932632 6785	11.6299016858 3438	183.904339597 9843
P16_HY5_Eff_ 180F_50%_10 00rpm_2000psi .tdms	2.60509316369 3438	1004.38852310 9772	2010.71327773 9034	9.81825956749 3225	182.669000906 0881
P16_HY5_Eff_ 180F_50%_10 00rpm_3000psi .tdms	2.28294973560 5421	1003.84940321 1331	3010.36385099 9399	8.60876704026 3244	177.588951116 9227
P16_HY5_Eff_ 180F_50%_10 00rpm_4060psi .tdms	1.83493533171 2156	1003.81352978 2581	4062.31862445 3057	6.91959392077 1413	183.178356453 0865
P16_HY5_Eff_ 180F_50%_10 00rpm_4351psi .tdms	1.69266256585 685	1003.97260176 0208	4356.06532497 0346	6.38204151223 2083	183.307434139 7009
P16_HY5_Eff_ 180F_50%_10 00rpm_4568psi .tdms	1.55311870791 4453	1003.54816428 582	4568.09592250 6207	5.85840818757 7538	183.398656433 6561
P16_HY5_Eff_ 180F_50%_10 00rpm_500psi.t dms	3.35054062944 1668	1000.26595567 8106	500.226195044 5252	12.6800327345 243	184.493983853 5048
P16_HY5_Eff_ 180F_50%_10 00rpm_5076psi .tdms	1.29917458589 5865	1003.81876303 1207	5085.36631654 0212	4.89919923977 559	183.359808767 8624
P16_HY5_Eff_ 180F_50%_15 00rpm_1000psi .tdms	4.88083770692 8467	1505.83817753 5783	1006.01858710 404	12.2695718407 0306	183.742734873 7956
P16_HY5_Eff_ 180F_50%_15 00rpm_2000psi .tdms	4.42699487410 0995	1506.76721043 5111	2006.75887086 5164	11.1218243815 4595	182.497839648 5848
P16_HY5_Eff_ 180F_50%_15 00rpm_3000psi .tdms	3.97455710940 9247	1505.93636584 8701	3008.47718510 0944	9.99068428640 7127	181.373730112 7879
P16_HY5_Eff_ 180F_50%_15 00rpm_4060psi .tdms	3.46758861036 5461	1506.54130693 8071	4062.09204690 5446	8.71283909521 4088	181.002470002 1395

TDMS file	Mean_Main_Fl ow_GPM	Mean_RPM	Mean_Outlet_P ressure_Psi	Mean_Displace ment	Mean_Inlet_Te mp_F
P16_HY5_Eff_ 180F_50%_15 00rpm_4351psi .tdms	3.32024189067 9611	1505.73362127 3976	4354.94805948 567	8.34708552730 3113	180.869926786 9299
P16_HY5_Eff_ 180F_50%_15 00rpm_4568psi .tdms	3.20465283720 7456	1506.36545842 6752	4572.71716506 2306	8.05311117338 1485	180.782939977 4828
P16_HY5_Eff_ 180F_50%_15 00rpm_500psi.t dms	5.17283025554 4752	1505.80129621 7597	507.334846436 3557	13.0039031554 0709	183.844600410 9119
P16_HY5_Eff_ 180F_50%_15 00rpm_5076psi .tdms	2.94508493787 0128	1506.27398883 0953	5078.41641157 5548	7.40128888736 5514	180.752554455 1907
P16_HY5_Eff_ 180F_50%_18 00rpm_1000psi .tdms	5.92831019181 666	1803.89763066 2245	1019.75751899 4589	12.4403382499 7917	183.050351939 8759
P16_HY5_Eff_ 180F_50%_18 00rpm_2000psi .tdms	5.59059026641 2073	1804.35090732 5973	2011.56738792 4915	11.7286977683 0795	180.425506964 9491
P16_HY5_Eff_ 180F_50%_18 00rpm_3000psi .tdms	5.07662423151 1603	1803.85219777 0275	3014.26368606 464	10.6533734602 9921	180.822027209 9638
P16_HY5_Eff_ 180F_50%_18 00rpm_4060psi .tdms	4.61515682392 2216	1804.01419926 1792	4062.97629588 7805	9.68410864387 6753	181.093276198 7582
P16_HY5_Eff_ 180F_50%_18 00rpm_4351psi .tdms	4.47683123973 4588	1804.09819653 6326	4352.78773085 8515	9.39341785303 1414	181.014582036 7546
P16_HY5_Eff_ 180F_50%_18 00rpm_4568psi .tdms	4.34797432458 3849	1804.27538230 0224	4563.30179487 8376	9.12215032594 8427	180.755088464 1883
P16_HY5_Eff_ 180F_50%_18 00rpm_500psi.t dms	6.24209985319 6537	1802.94687855 5568	498.783476877 7385	13.1057380271 534	182.564799307 9184
P16_HY5_Eff_ 180F_50%_18 00rpm_5076psi .tdms	4.07013795765 8142	1804.99146028 0163	5063.01757789 2205	8.53585543773 6249	180.808028465 7353
P16_HY5_Eff_ 180F_50%_20 00rpm_1000psi .tdms	6.67749667886 4608	2001.33681384 5769	997.568330434 4493	12.6300971068 5469	183.487396649 9069

TDMS file	Mean_Main_Fl ow_GPM	Mean_RPM	Mean_Outlet_P ressure_Psi	Mean_Displace ment	Mean_Inlet_Te mp_F
P16_HY5_Eff_ 180F_50%_20 00rpm_2000psi .tdms	6.30310509811 5388	2001.59712232 0058	2015.51918163 2563	11.9204054145 368	180.876330084 6039
P16_HY5_Eff_ 180F_50%_20 00rpm_3000psi .tdms	5.74905808160 9446	2001.52256215 1087	3012.32337672 7246	10.8729982797 2876	181.407833806 9478
P16_HY5_Eff_ 180F_50%_20 00rpm_4060psi .tdms	5.29639356205 3219	2001.47150214 5852	4061.17082460 8462	10.0171450709 6565	181.940021187 9558
P16_HY5_Eff_ 180F_50%_20 00rpm_4351psi .tdms	5.21654414162 893	2001.66837752 284	4348.65419099 6449	9.86515449468 0473	178.888936095 6486
P16_HY5_Eff_ 180F_50%_20 00rpm_4568psi .tdms	5.03347722984 1308	2003.07986179 8097	4568.11880393 9808	9.51224895879 6619	181.441638190 2958
P16_HY5_Eff_ 180F_50%_20 00rpm_500psi.t dms	6.99514972415 9165	2000.57199410 9456	493.144544907 906	13.2359762102 4796	182.126763951 3717
P16_HY5_Eff_ 180F_50%_20 00rpm_5076psi .tdms	4.72272286202 7485	2002.48035617 7638	5079.03582912 2859	8.92764891010 15	181.918184787 8103
P16_HY5_Eff_ 180F_50%_25 00rpm_1000psi .tdms	8.61047322920 4601	2502.96115942 8832	1008.68199314 6682	13.0222506114 6941	178.494919053 331
P16_HY5_Eff_ 180F_50%_25 00rpm_2000psi .tdms	7.96773192679 4253	2503.44545435 973	2010.55095094 6965	12.0478546660 9471	183.878104237 9566
P16_HY5_Eff_ 180F_50%_25 00rpm_3000psi .tdms	7.52490749046 5834	2503.69770837 3509	3006.12038439 0453	11.3771228286 4725	179.096245293 8903
P16_HY5_Eff_ 180F_50%_25 00rpm_4060psi .tdms	7.10086740742 8137	2503.37865628 4033	4059.60943815 7002	10.7373728382 4623	179.467212144 2145
P16_HY5_Eff_ 180F_50%_25 00rpm_4351psi .tdms	6.91853050785 8774	2504.03177577 3252	4352.21490171 1685	10.4589271214 2729	179.739353337 7888
P16_HY5_Eff_ 180F_50%_25 00rpm_4568psi .tdms	6.80481097792 6182	2502.98064290 1252	4563.97686339 0851	10.2913350777 4057	180.049307852 6406

TDMS file	Mean_Main_Fl ow_GPM	Mean_RPM	Mean_Outlet_P ressure_Psi	Mean_Displace ment	Mean_Inlet_Te mp_F
P16_HY5_Eff_ 180F_50%_25 00rpm_500psi.t dms	8.86428658634 5532	2502.81946657 2524	508.373612669 9802	13.4068702852 3381	177.616023577 1617
P16_HY5_Eff_ 180F_50%_25 00rpm_5076psi .tdms	6.50241836751 6385	2503.37720087 0055	5080.56184238 8127	9.83245002318 9002	180.625074202 6565
P16_HY5_Eff_ 180F_50%_30 00rpm_1000psi .tdms	10.3907507319 5075	3004.01681789 4431	1019.29697541 7048	13.0935586230 9245	181.319433361 8832
P16_HY5_Eff_ 180F_50%_30 00rpm_2000psi .tdms	9.85401282146 0268	3003.32831984 1834	2015.12238131 8812	12.4200522338 4033	179.322949200 9703
P16_HY5_Eff_ 180F_50%_30 00rpm_3000psi .tdms	9.36135099233 968	3003.09127326 1213	3006.33925830 3165	11.8000306551 0712	179.701469475 7857
P16_HY5_Eff_ 180F_50%_30 00rpm_4060psi .tdms	8.75899825131 7688	3003.56410398 2429	4069.10136491 192	11.0390237963 4158	180.055491627 5287
P16_HY5_Eff_ 180F_50%_30 00rpm_4351psi .tdms	8.48464777810 1634	3003.99185689 9582	4359.14117504 7474	10.6917394955 465	180.577029143 2824
P16_HY5_Eff_ 180F_50%_30 00rpm_4568psi .tdms	8.40438579033 919	3005.48750430 153	4575.97003948 0316	10.5853321319 0732	180.961089405 2596
P16_HY5_Eff_ 180F_50%_30 00rpm_500psi.t dms	10.6669577176 3221	3002.78990217 0655	503.957085316 5226	13.4471038550 3071	183.726812592 954
P16_HY5_Eff_ 180F_50%_30 00rpm_5076psi .tdms	8.06788845889 3634	3003.44139039 9458	5078.37744167 5218	10.1684291297 1423	182.845964260 4022
P16_HY5_Eff_ 180F_50%_35 00rpm_1000psi .tdms	12.1801348396 1889	3498.88330285 5798	1006.23241458 9971	13.1775832068 3048	176.365782863 8055
P16_HY5_Eff_ 180F_50%_35 00rpm_2000psi .tdms	11.6652627160 5031	3497.13821036 8997	2010.24485938 2169	12.6268495750 3101	179.005897965 9434
P16_HY5_Eff_ 180F_50%_35 00rpm_3000psi .tdms	11.0156546971 4884	3498.13460442 6215	3009.29631633 5753	11.9202932733 2722	180.097635048 4761

TDMS file	Mean_Main_Fl ow_GPM	Mean_RPM	Mean_Outlet_P ressure_Psi	Mean_Displace ment	Mean_Inlet_Te mp_F
P16_HY5_Eff_ 180F_50%_35 00rpm_4060psi .tdms	10.1412657722 6684	3496.52504158 876	4060.07332379 1565	10.9791514966 9296	181.053214552 4007
P16_HY5_Eff_ 180F_50%_35 00rpm_4351psi .tdms	9.97719603424 101	3498.67251633 3682	4350.57893935 8078	10.7948914131 3749	181.771595809 3973
P16_HY5_Eff_ 180F_50%_35 00rpm_4568psi .tdms	9.85034173239 6103	3498.84680213 3094	4566.42225535 4572	10.6571111857 5919	181.989662289 1649
P16_HY5_Eff_ 180F_50%_35 00rpm_500psi.t dms	12.4982977736 2266	3498.97128506 39	503.040771159 0372	13.5214612648 2094	178.594743684 2998
P16_HY5_Eff_ 180F_50%_35 00rpm_5076psi .tdms	9.56457941324 627	3498.96732387 8652	5076.01152001 2307	10.3475878575 2487	182.032167183 5119
P16_HY5_Eff_ 180F_50%_50 0rpm_1000psi.t dms	1.29712066412 8306	503.023687220 9104	1010.63157110 0495	9.76127765420 2338	182.795447792 4737
P16_HY5_Eff_ 180F_50%_50 0rpm_2000psi.t dms	0.90184197255 38692	503.526874209 4622	2006.72444500 9702	6.77983452132 8768	182.765738933 146
P16_HY5_Eff_ 180F_50%_50 0rpm_500psi.td ms	1.52749680123 8055	502.751667675 9432	506.117854826 5194	11.5011115104 548	181.175612130 545

#### **Statistics**

Column	Min	Мах	Average	Median	IQR
Mean_Main_Fl	0.90184197255	12.4982977736	6.10750014131	5.74905808160	4.82648764376
ow_GPM	38692	2266	9114	9446	5763
Mean_RPM	502.751667675	3498.97128506	2102.97997900	2001.47150214	1496.83541037
	9432	39	3272	5852	6107
Mean_Outlet_P ressure_Psi	493.144544907	5085.36631654	2977.69987359	3012.32337672	3338.07600280
	906	0212	4169	7246	3091
Mean_Displace ment	4.89919923977	13.5214612648	10.5733639454	10.6917394955	2.56053445206
	559	2094	20049	465	2198
Mean_Inlet_Te	176.365782863	184.493983853	181.262916438	181.093276198	2.45579891290
mp_F	8055	5048	98617	7582	447

#### **Outliers**

TDMS file	Mean_Displacement	Mean_Inlet_Temp_F	Outlier Type
P16_HY5_Eff_180F_50 %_1000rpm_5076psi.td ms	4.89919923977559	nan	Lower
P16_HY5_Eff_180F_50 %_3500rpm_1000psi.td ms	nan	176.3657828638055	Lower

#### **VE Pivot**

Outlet Pressure	2102
2977.0	78.19690297030978

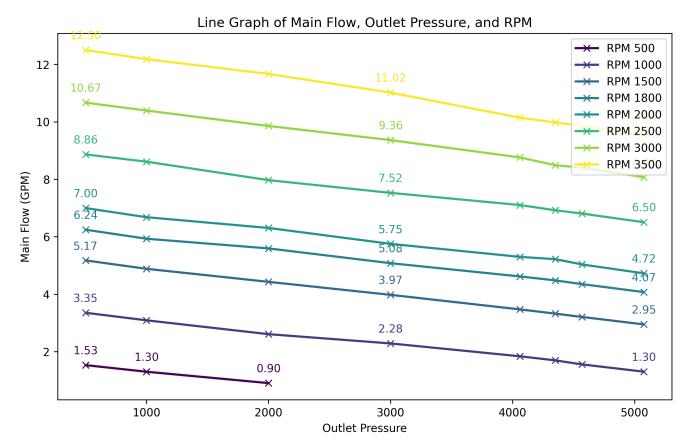
#### **ME Pivot**

Outlet Pressure	2102
2977.0	84.23826199627528

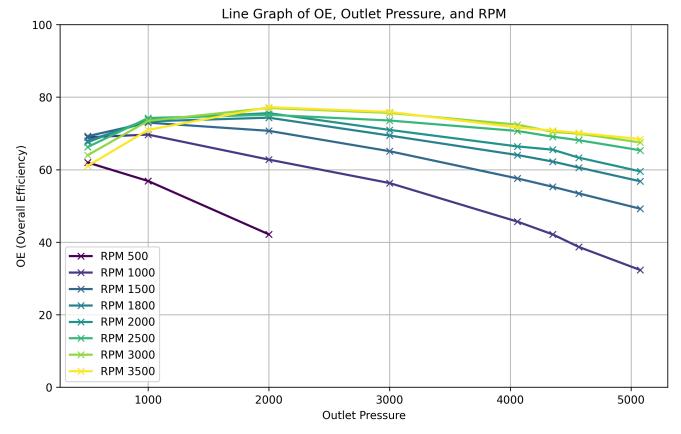
#### **OE Pivot**

Outlet Pressure	2102
2977.0	65.10760285941734

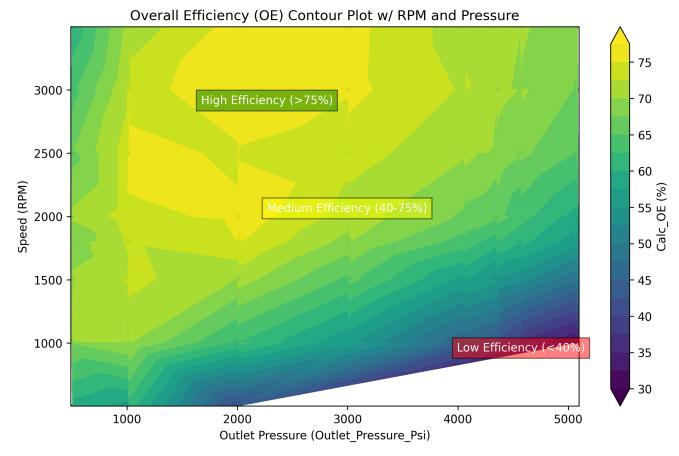
### flow\_line\_plot



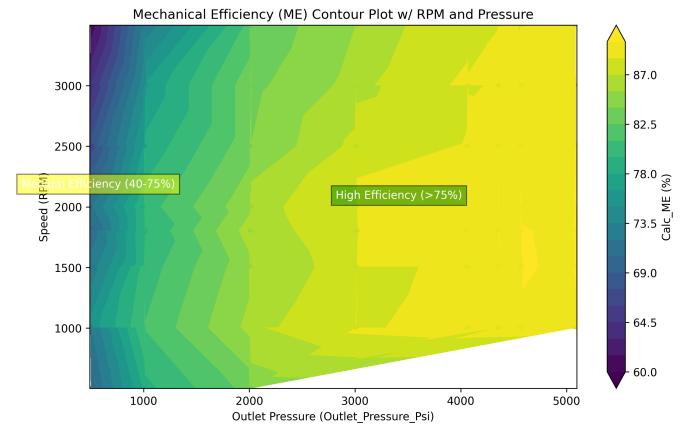
efficiency\_map\_plot



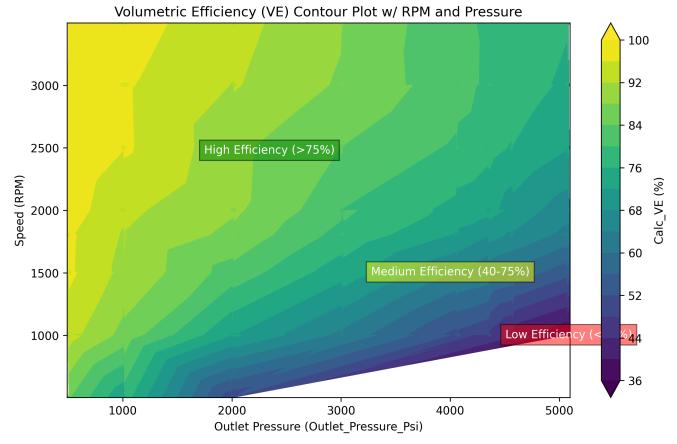
oe\_contour\_plot



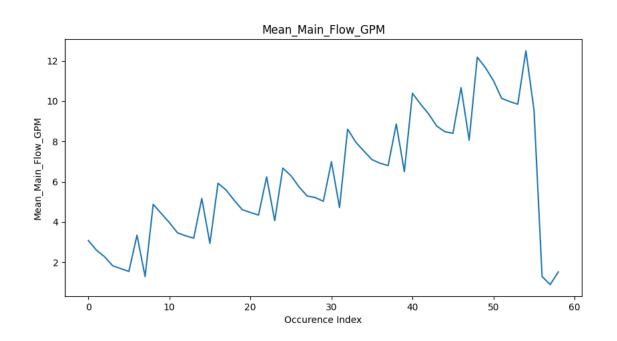
me\_contour\_plot



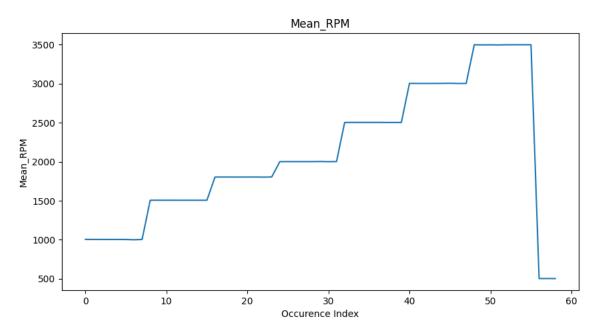
ve\_contour\_plot



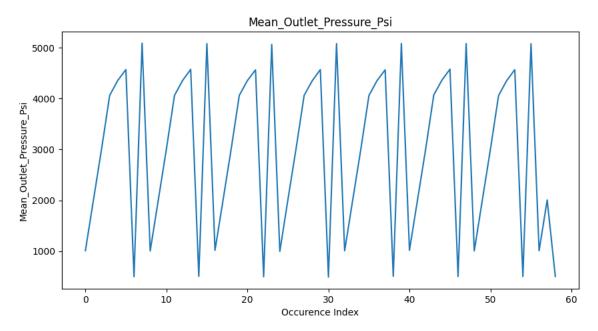
Mean\_Main\_Flow\_GPM Plot



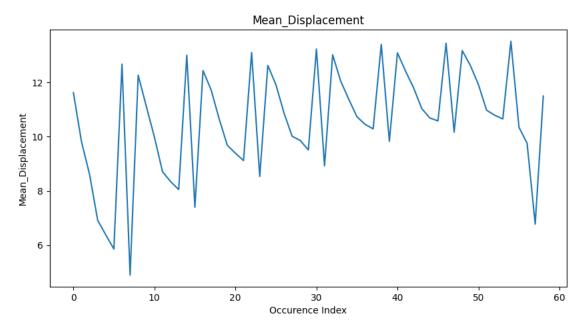
#### Mean\_RPM Plot



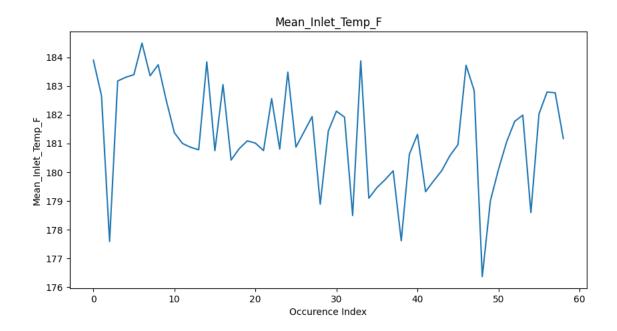
Mean\_Outlet\_Pressure\_Psi Plot



**Mean\_Displacement Plot** 



# Mean\_Inlet\_Temp\_F Plot



# Single TDMS File Analysis for P16\_HY5\_Eff\_180F\_50%\_500rpm\_1000psi.tdms

