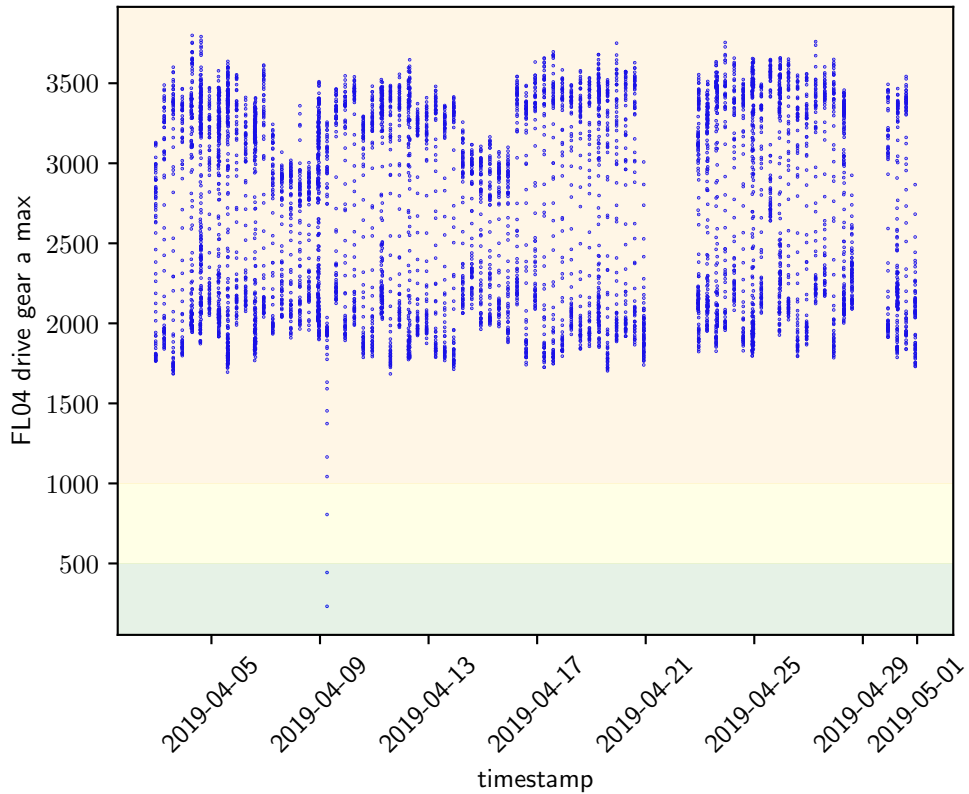
Diagnosis for FL04

Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive gear a max

Good: $7/29336$
Satisfactory: $9/29336$
Unsatisfactory: $29320/29336$
Unacceptable: $0/29336$

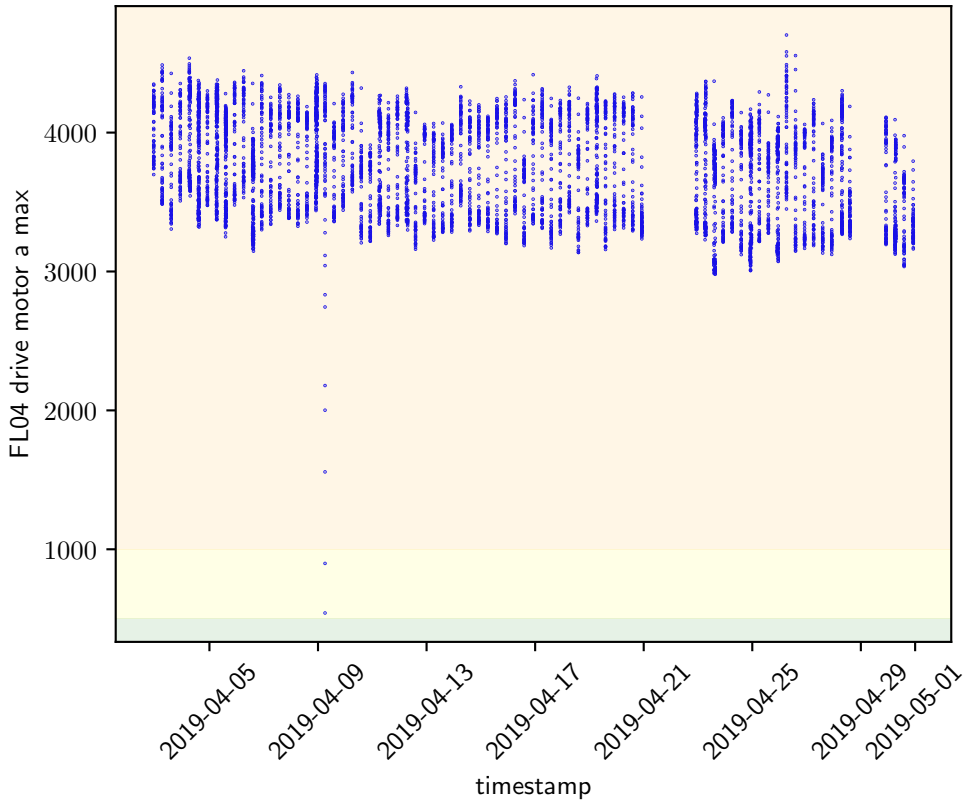
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive motor a max

Good: $0/29336$
Satisfactory: $7/29336$
Unsatisfactory: $29329/29336$
Unacceptable: $0/29336$

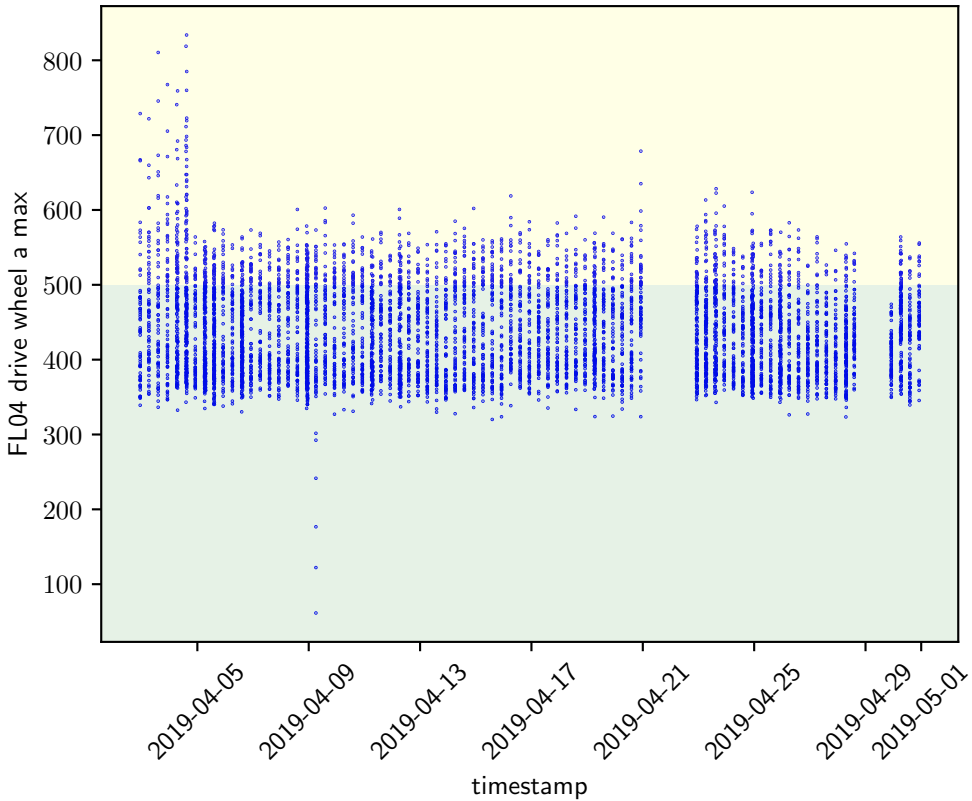
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive wheel a max

Good: $25007/29323$
Satisfactory: $4316/29323$
Unsatisfactory: $0/29323$
Unacceptable: $0/29323$

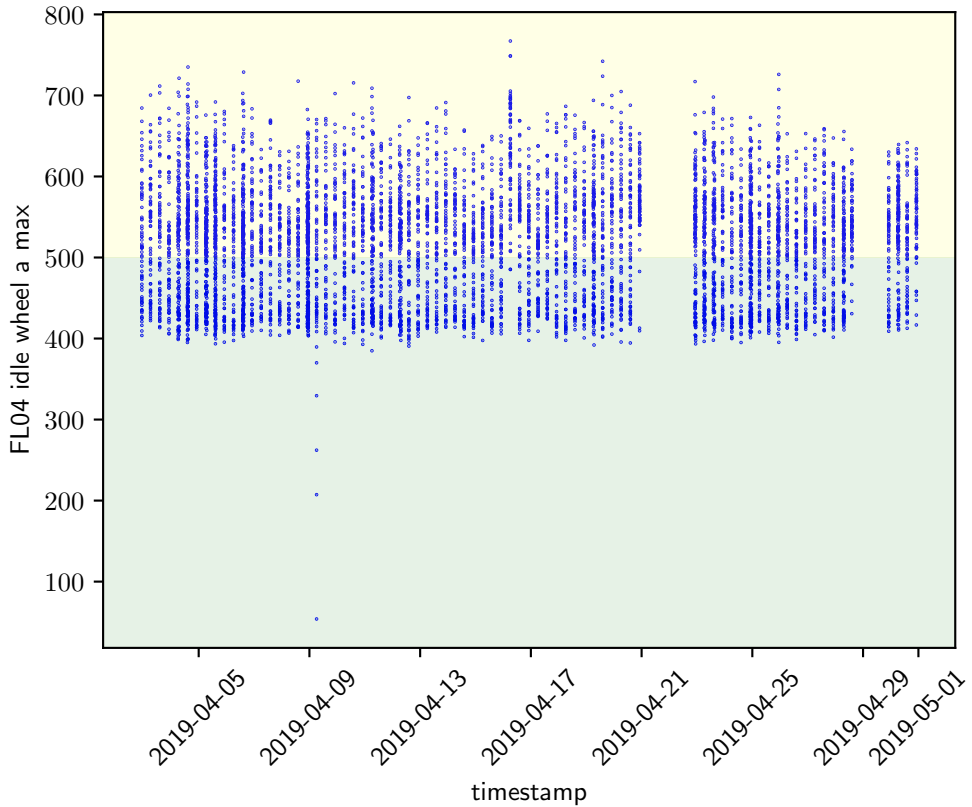
Satisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - idle wheel a max

Good: $11918/29323$
Satisfactory: $17405/29323$
Unsatisfactory: $0/29323$
Unacceptable: $0/29323$

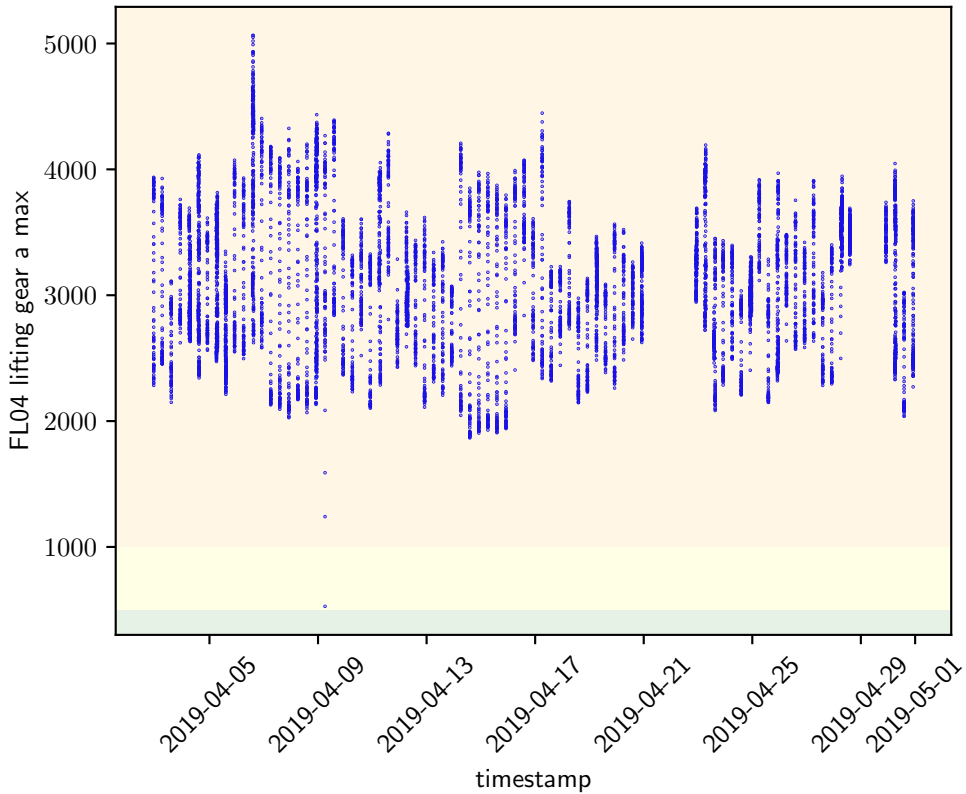
Satisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting gear a max

Good: $25/39520$
Satisfactory: $16/39520$
Unsatisfactory: $39479/39520$
Unacceptable: $0/39520$

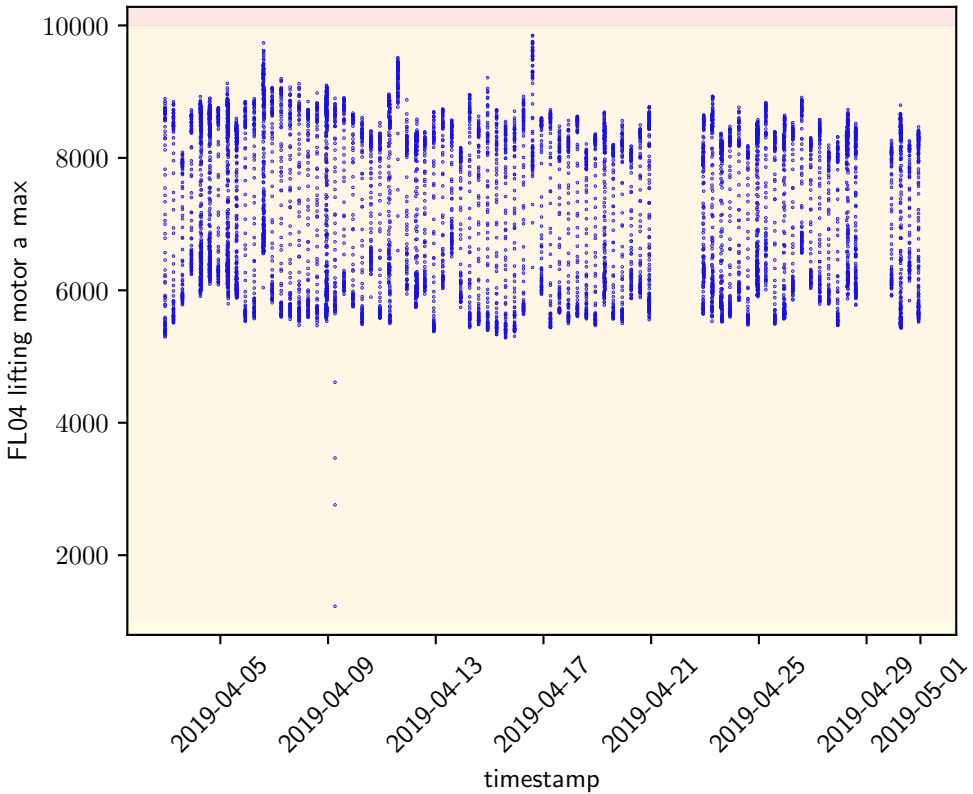
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting motor a max

Good: $14/39520$
Satisfactory: $10/39520$
Unsatisfactory: $39496/39520$
Unacceptable: $0/39520$

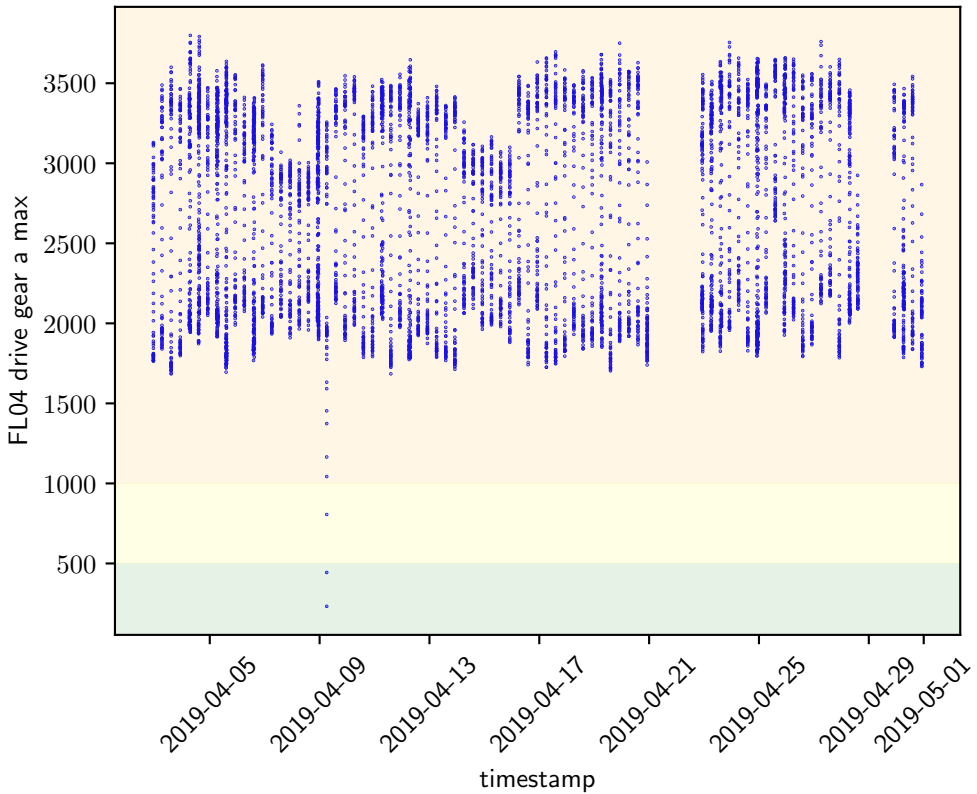
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive gear a max

Good: $2/7033$
Satisfactory: $1/7033$
Unsatisfactory: $7030/7033$
Unacceptable: $0/7033$

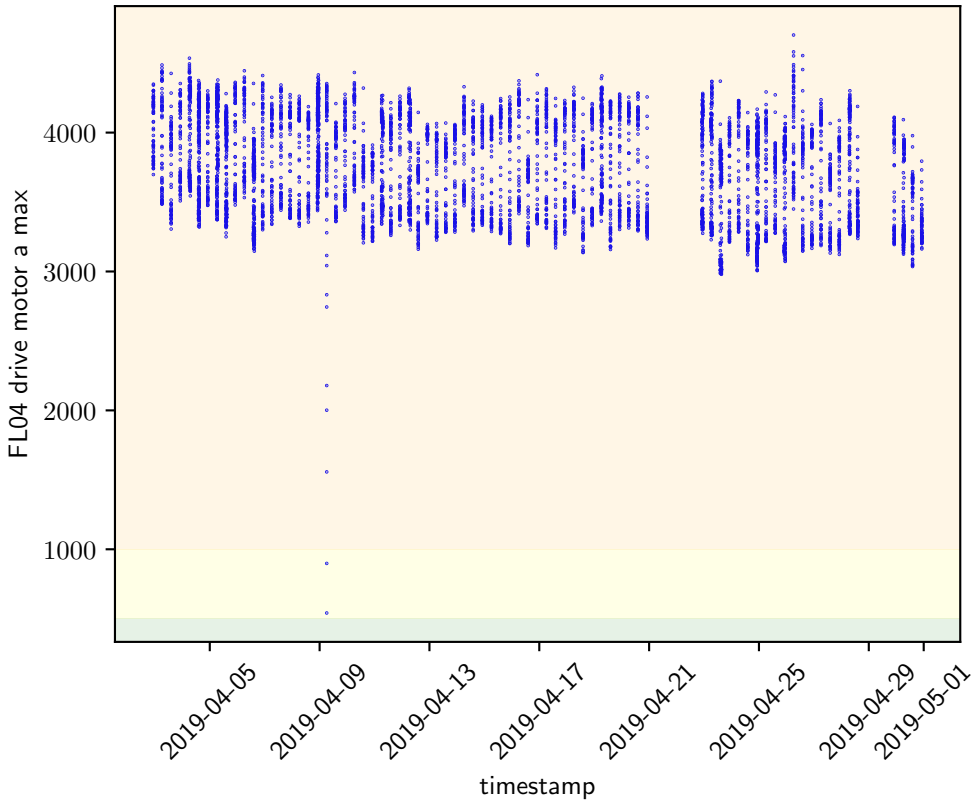
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive motor a max

Good: $0/7033$
Satisfactory: $2/7033$
Unsatisfactory: $7031/7033$
Unacceptable: $0/7033$

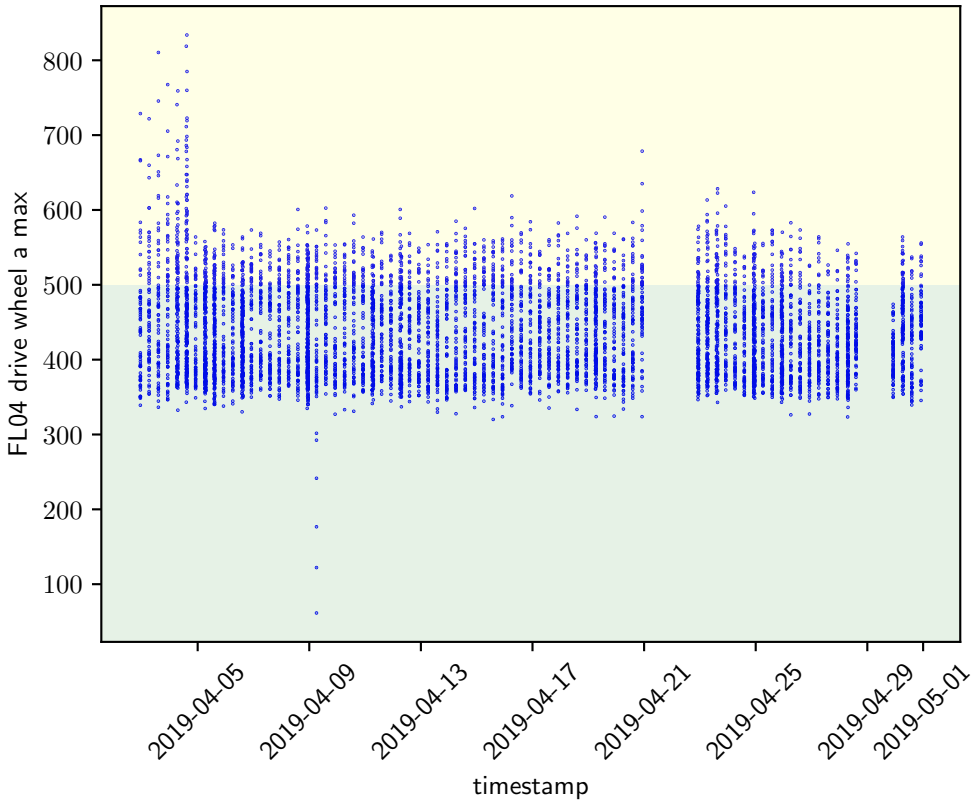
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive wheel a max

Good: $5749/7028$
Satisfactory: $1279/7028$
Unsatisfactory: $0/7028$
Unacceptable: $0/7028$

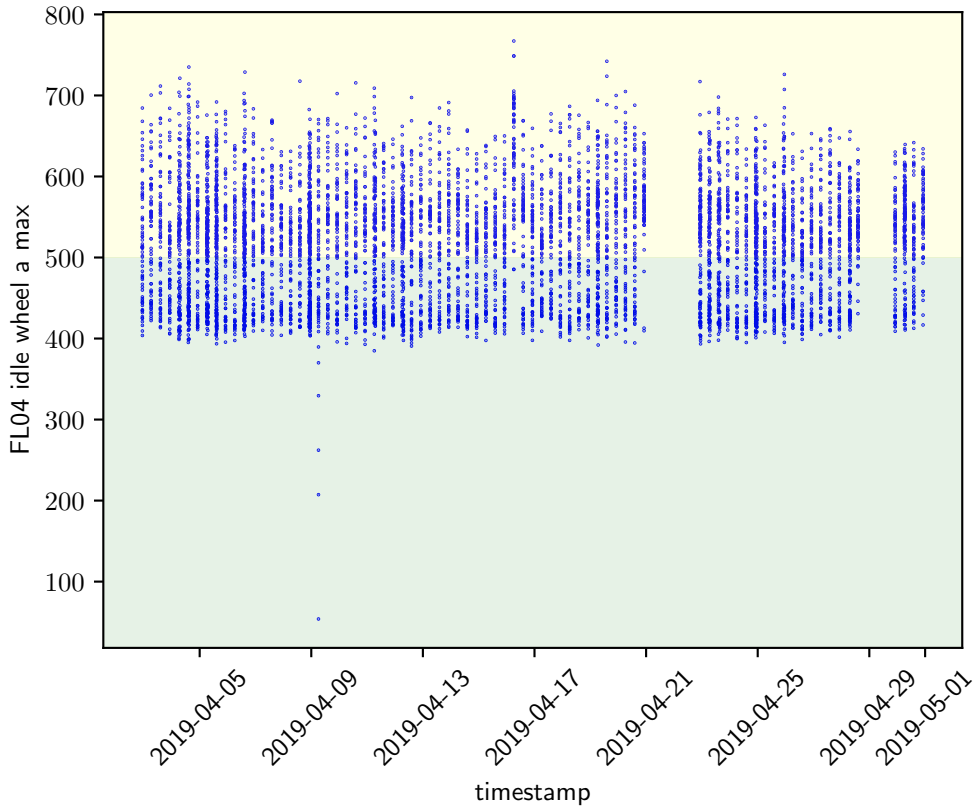
Satisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - idle wheel a max

Good: $2708/7029$
Satisfactory: $4321/7029$
Unsatisfactory: $0/7029$
Unacceptable: $0/7029$

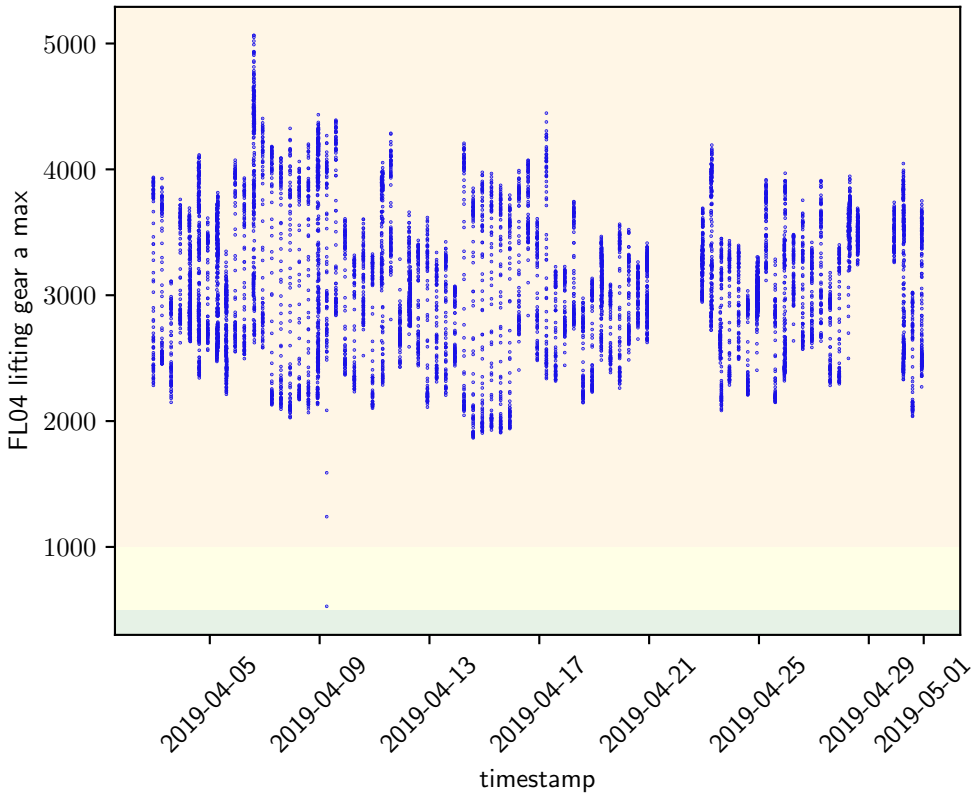
Satisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting gear a max

Good: $0/9304$
Satisfactory: $1/9304$
Unsatisfactory: $9303/9304$
Unacceptable: $0/9304$

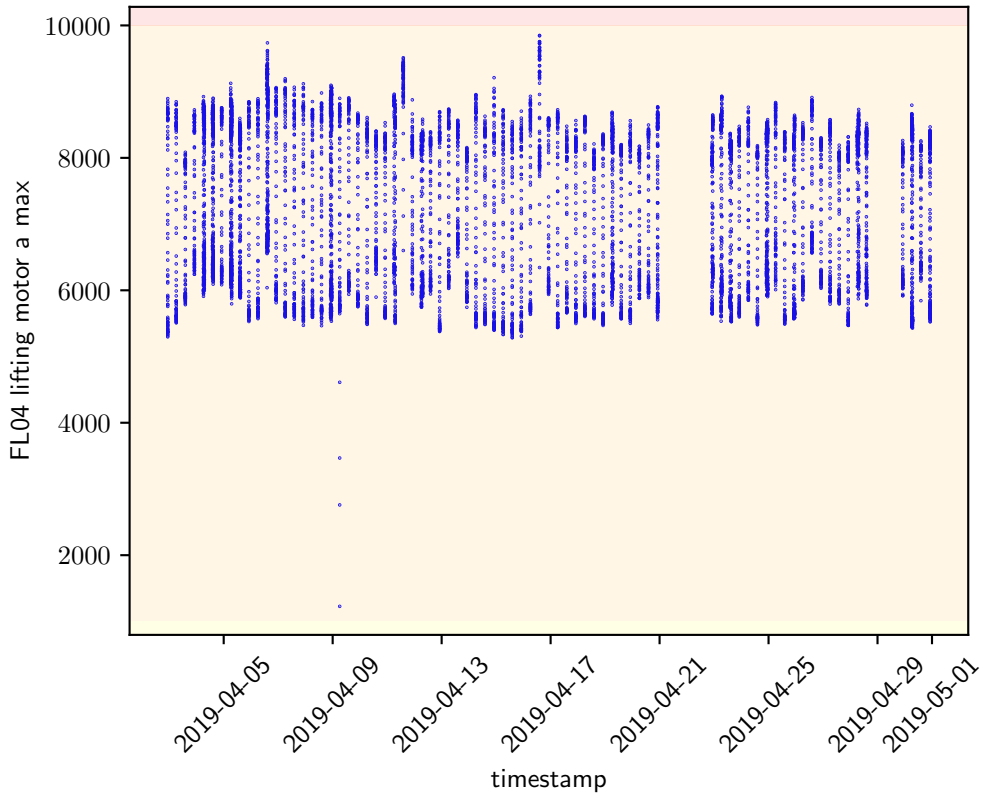
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting motor a max

Good: $0/9304$
Satisfactory: $0/9304$
Unsatisfactory: $9304/9304$
Unacceptable: $0/9304$

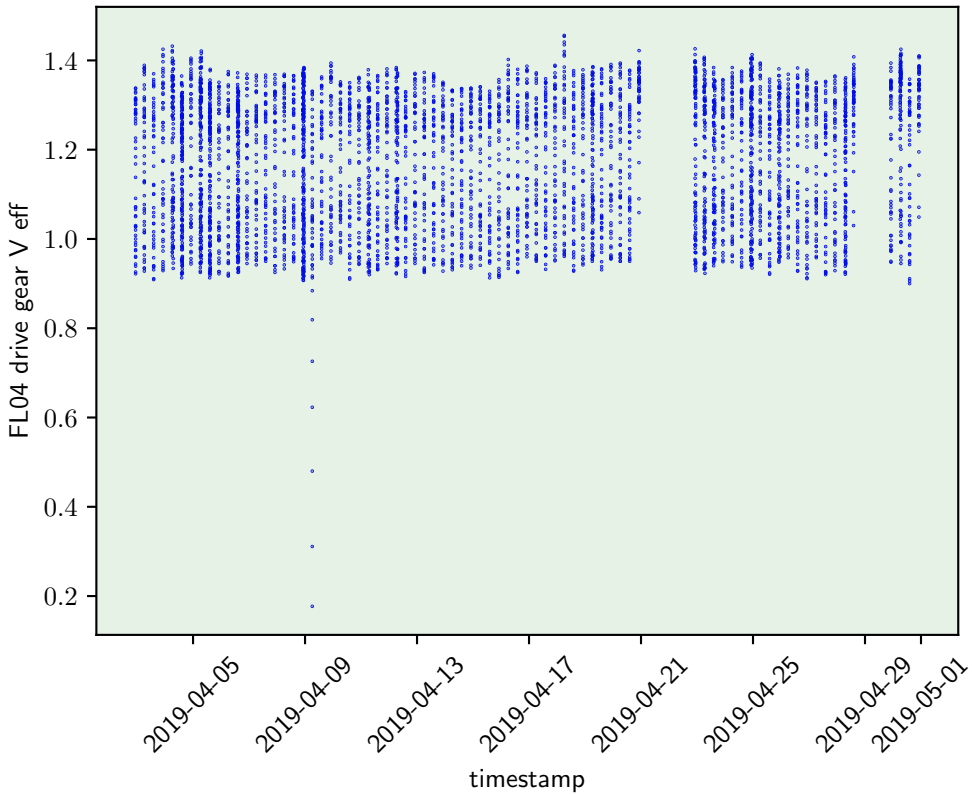
Unsatisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive gear V eff

Good: 20438/20438
Satisfactory: 0/20438
Unsatisfactory: 0/20438
Unacceptable: 0/20438

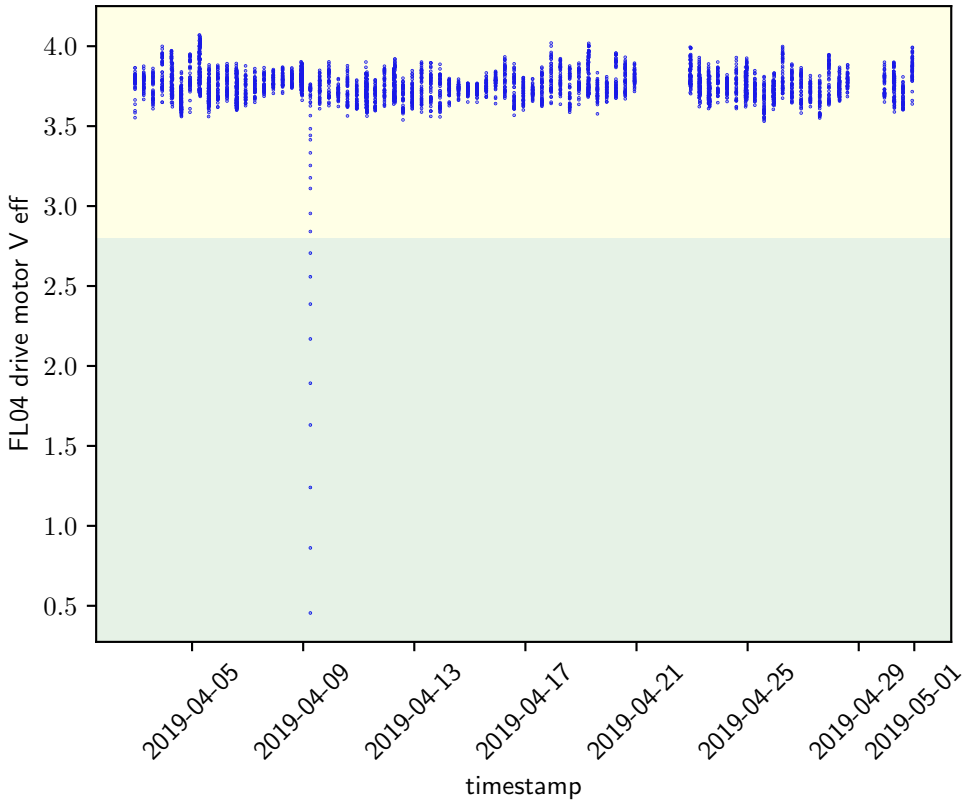
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive motor V eff

Good: $45/20612$
Satisfactory: $20567/20612$
Unsatisfactory: $0/20612$
Unacceptable: $0/20612$

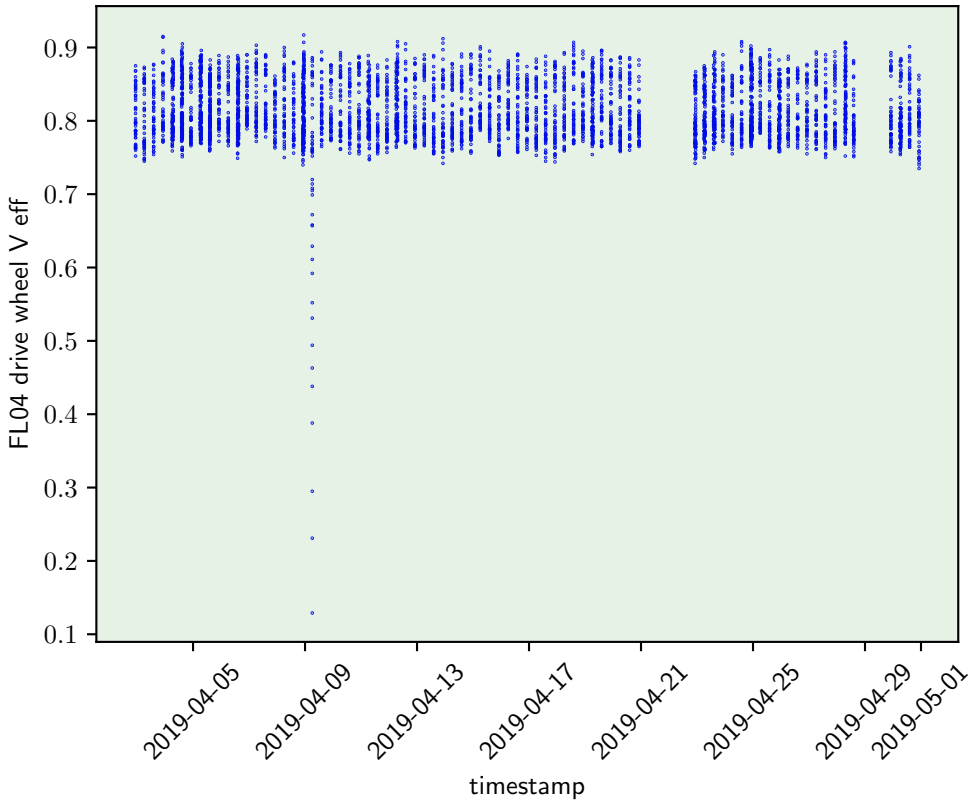
Satisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive wheel V eff

Good: $20407/20407$
Satisfactory: $0/20407$
Unsatisfactory: $0/20407$
Unacceptable: $0/20407$

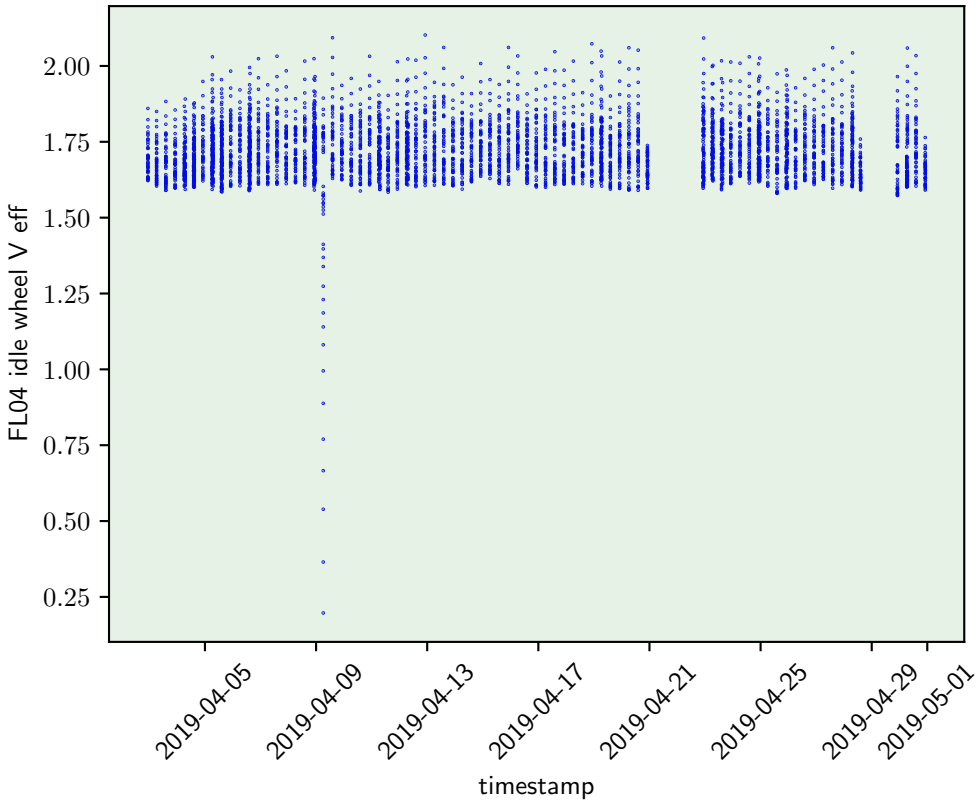
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - idle wheel V eff

Good: $20293/20293$
Satisfactory: $0/20293$
Unsatisfactory: $0/20293$
Unacceptable: $0/20293$

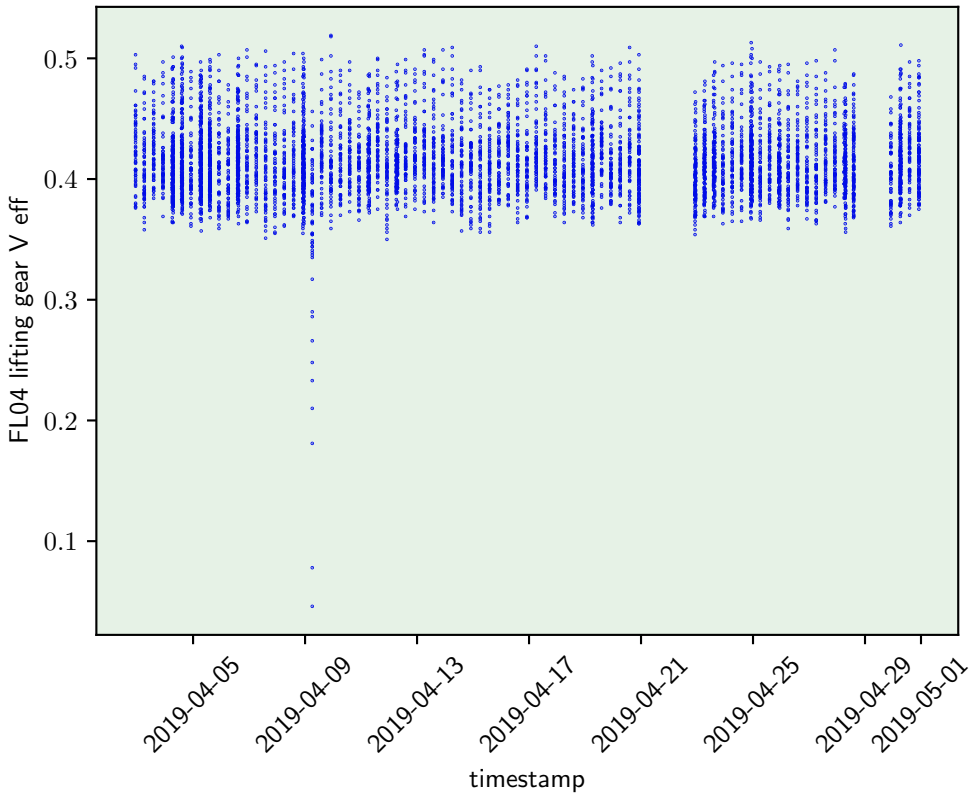
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting gear V eff

Good: $27183/27183$
Satisfactory: $0/27183$
Unsatisfactory: $0/27183$
Unacceptable: $0/27183$

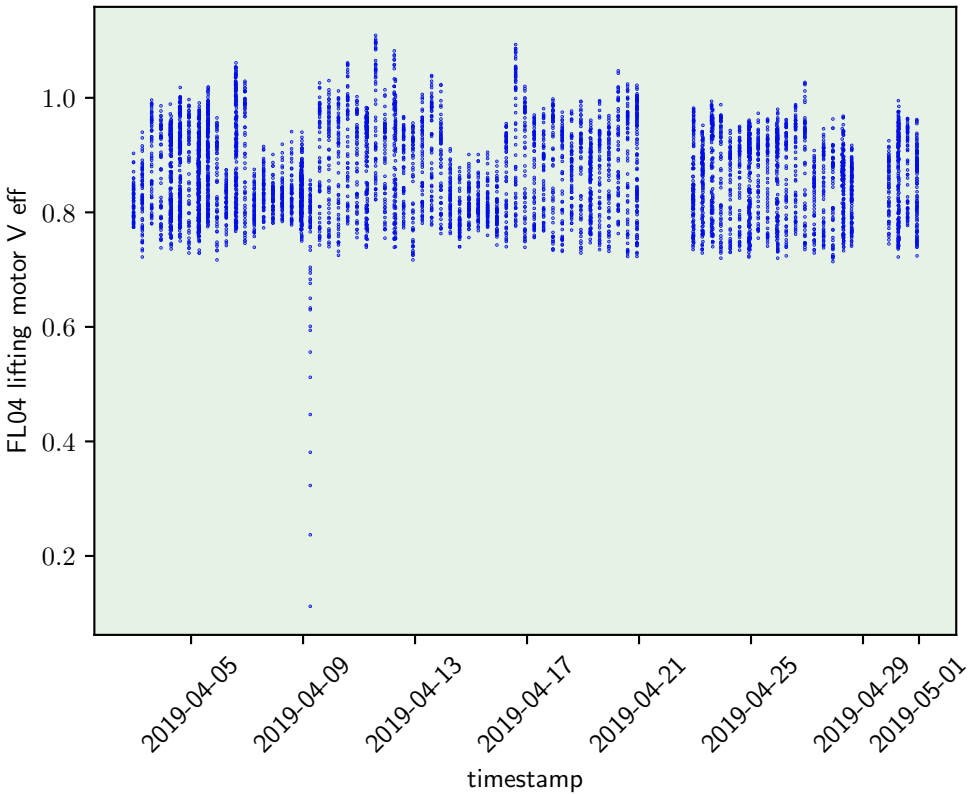
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting motor V eff

Good: $27678/27678$
Satisfactory: $0/27678$
Unsatisfactory: $0/27678$
Unacceptable: $0/27678$

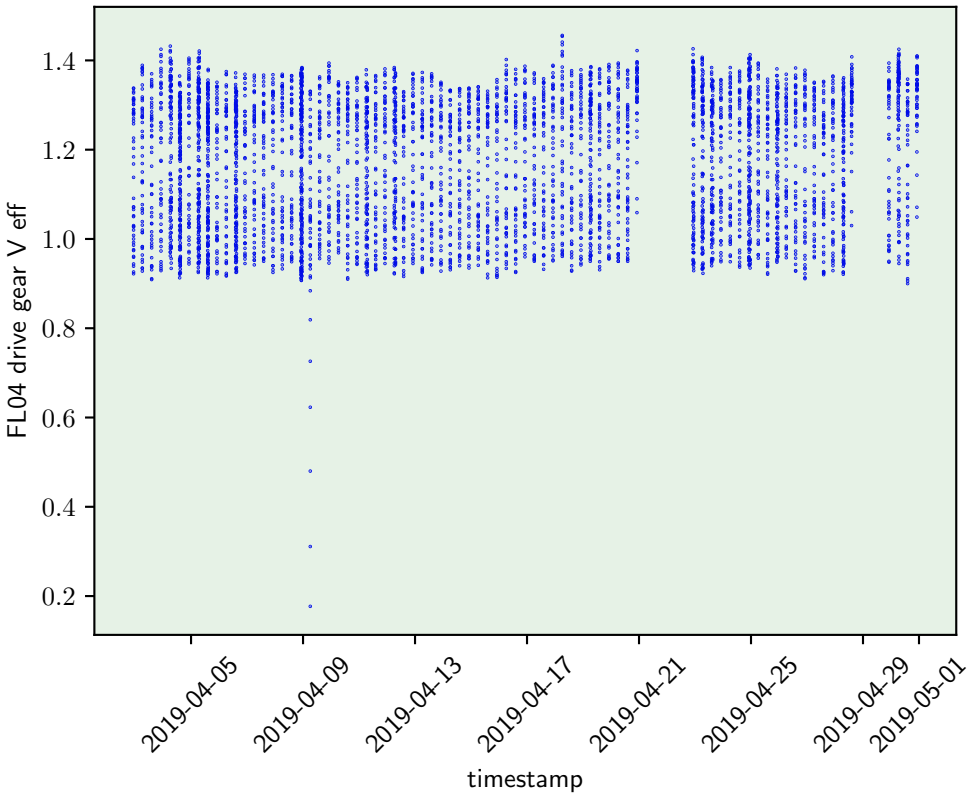
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive gear V eff

Good: $4925/4925$
Satisfactory: $0/4925$
Unsatisfactory: $0/4925$
Unacceptable: $0/4925$

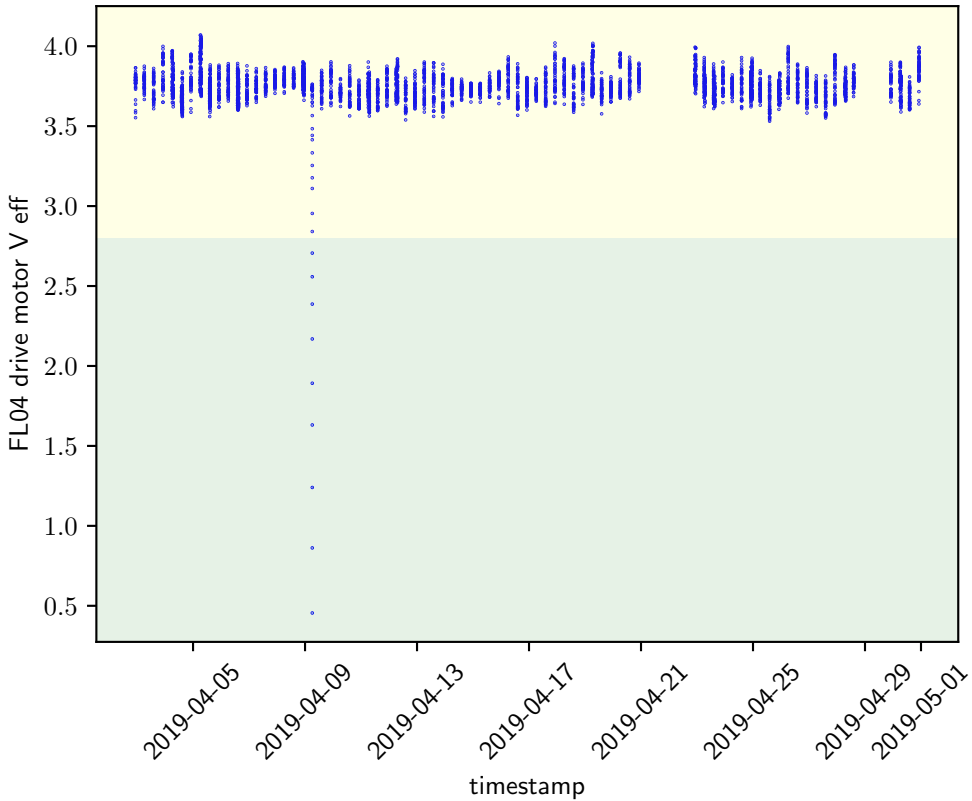
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive motor V eff

Good: $9/4936$
Satisfactory: $4927/4936$
Unsatisfactory: $0/4936$
Unacceptable: $0/4936$

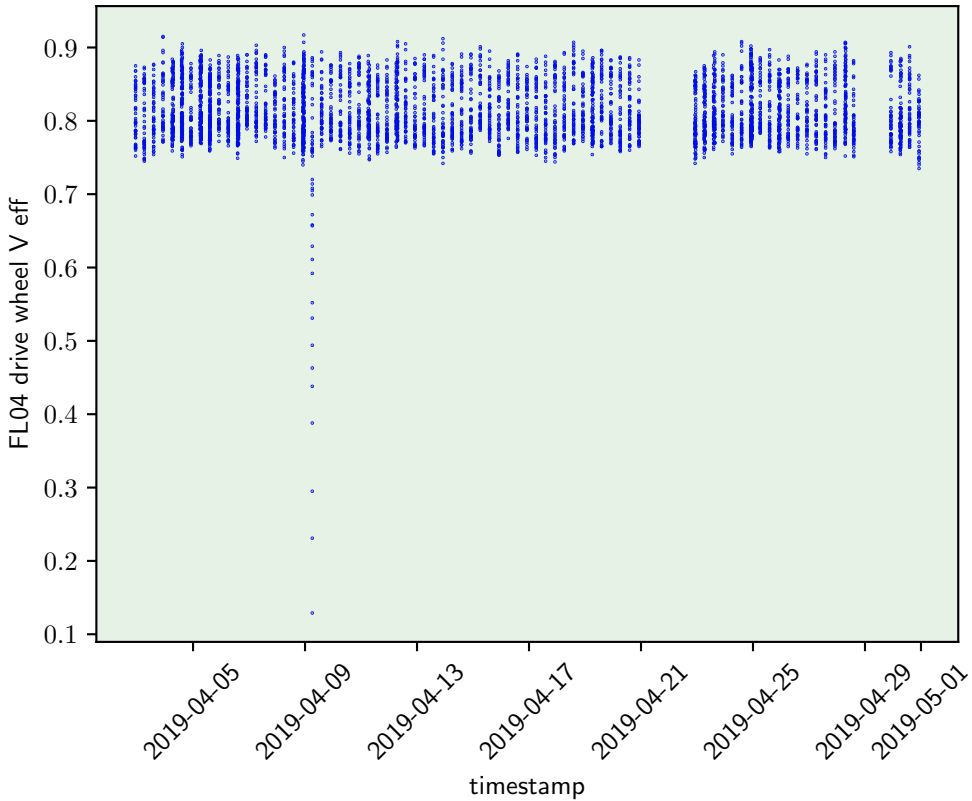
Satisfactory



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - drive wheel V eff

Good: $4914/4914$
Satisfactory: $0/4914$
Unsatisfactory: $0/4914$
Unacceptable: $0/4914$

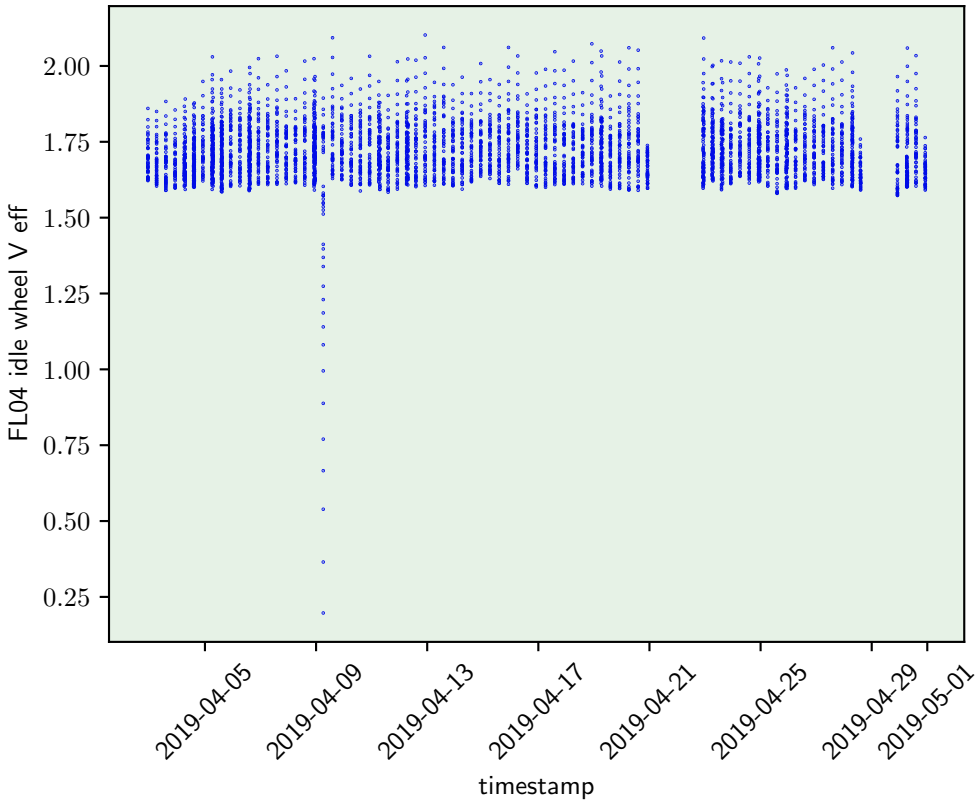
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - idle wheel V eff

Good: $4908/4908$
Satisfactory: $0/4908$
Unsatisfactory: $0/4908$
Unacceptable: $0/4908$

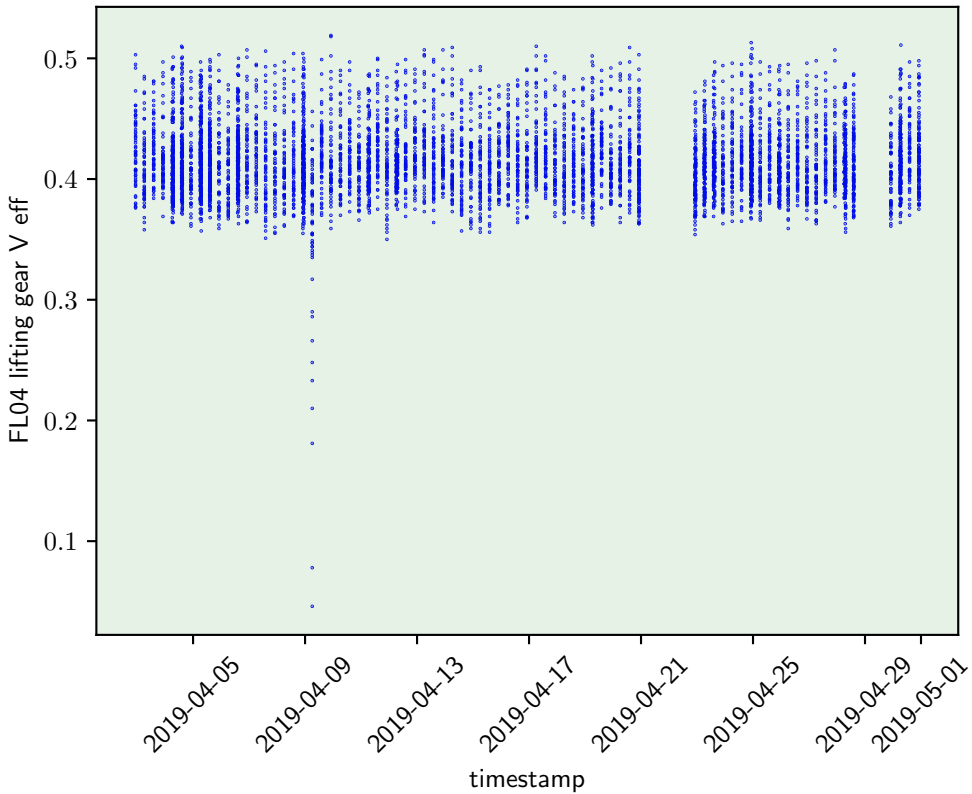
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting gear V eff

Good: $6430/6430$
Satisfactory: $0/6430$
Unsatisfactory: $0/6430$
Unacceptable: $0/6430$

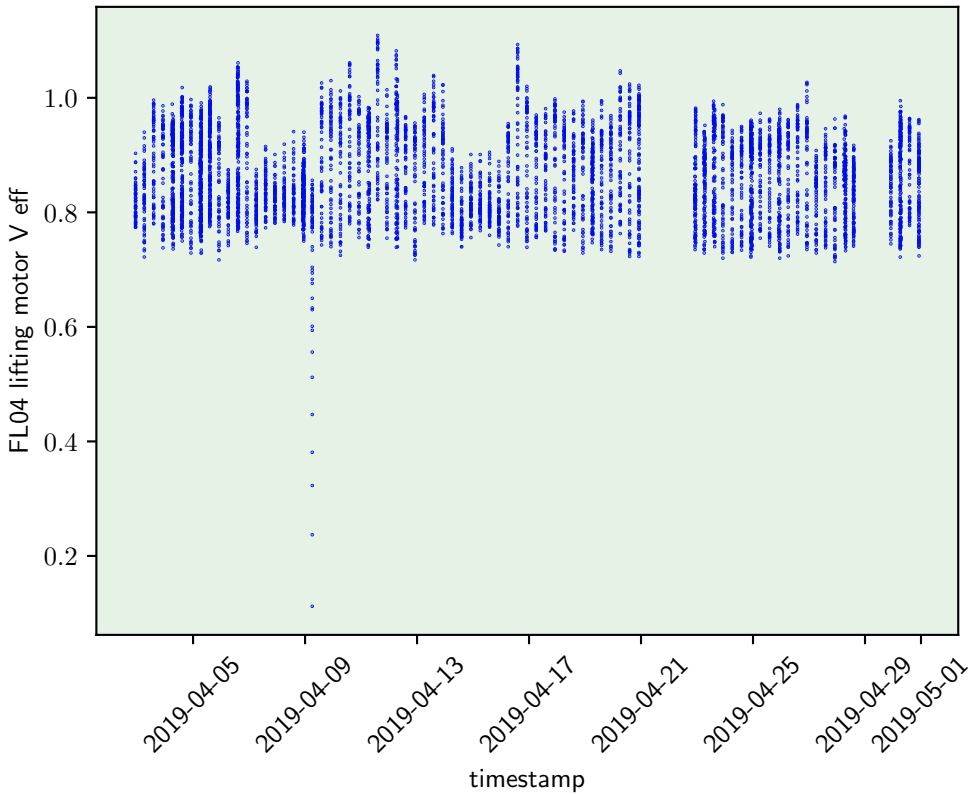
Good



Categorization check
start: 2019-04-01, end: 2019-05-01
FL04 - lifting motor V eff

Good: $6550/6550$
Satisfactory: $0/6550$
Unsatisfactory: $0/6550$
Unacceptable: $0/6550$

Good



Compatibility check for velocity sensors

New data:from 2019-04-01 until 2019-05-01

Referent data: last week

Velocity sensors

drive gear

$\mu_{ref} = 1.16$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 1.17$
$\sigma_{new} = 0.15$
$\sigma^2_{new} = 0.02$

$good_{cnt}/all_{cnt}$
4921 / 4925 = 99%

GOOD FIT

drive motor

$\mu_{ref} = 3.76$
$\sigma_{ref} = 0.09$
$\sigma^2_{ref} = 0.01$

$\mu_{new} = 3.75$
$\sigma_{new} = 0.12$
$\sigma^2_{new} = 0.02$

$good_{cnt}/all_{cnt}$
4900 / 4936 = 99%

GOOD FIT

drive wheel

$\mu_{ref} = 0.81$
$\sigma_{ref} = 0.04$
$\sigma^2_{ref} = 0.0$

$\mu_{new} = 0.81$
$\sigma_{new} = 0.04$
$\sigma^2_{new} = 0.0$

$good_{cnt}/all_{cnt}$
4896 / 4914 = 99%

GOOD FIT

idle wheel

$\mu_{ref} = 1.69$
$\sigma_{ref} = 0.06$
$\sigma^2_{ref} = 0.0$

$\mu_{new} = 1.72$
$\sigma_{new} = 0.1$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
4623 / 4908 = 94%

GOOD FIT

lifting gear

$\mu_{ref} = 0.42$
$\sigma_{ref} = 0.03$
$\sigma^2_{ref} = 0.0$

$\mu_{new} = 0.42$
$\sigma_{new} = 0.03$
$\sigma^2_{new} = 0.0$

$good_{cnt}/all_{cnt}$
6410 / 6430 = 99%

GOOD FIT

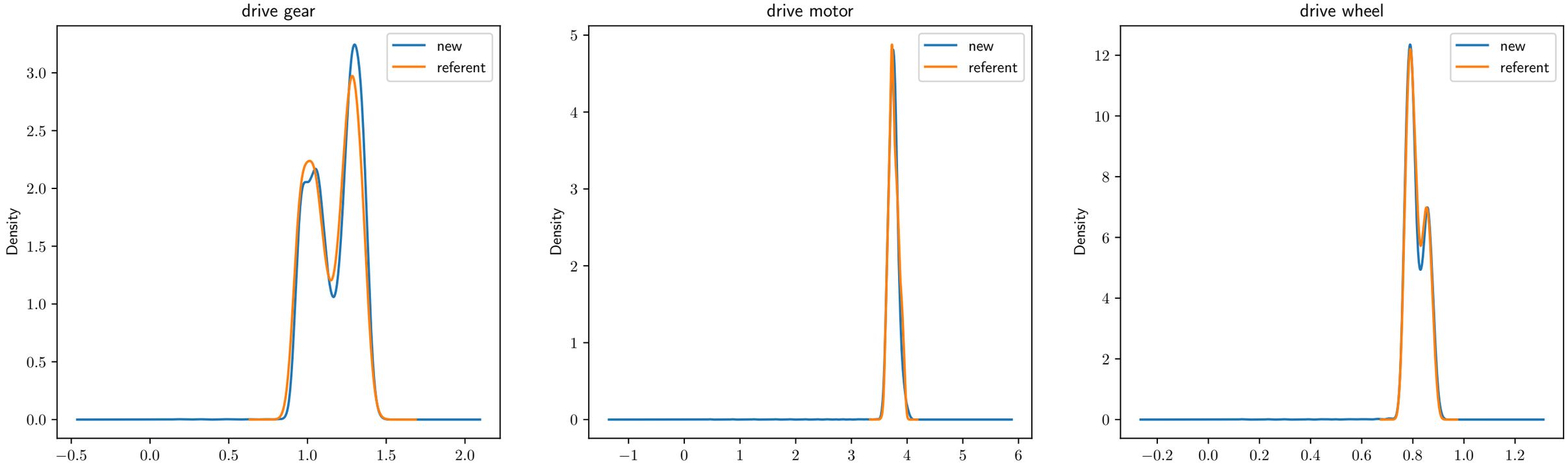
lifting motor

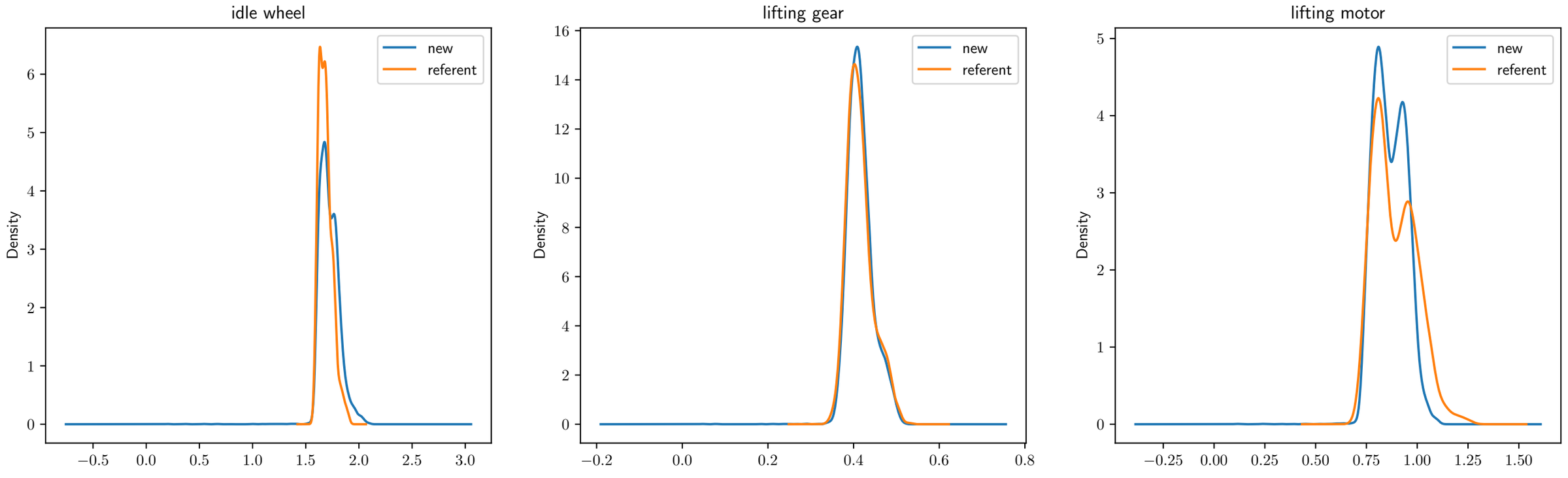
$\mu_{ref} = 0.89$
$\sigma_{ref} = 0.1$
$\sigma^2_{ref} = 0.01$

$\mu_{new} = 0.87$
$\sigma_{new} = 0.08$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
6543 / 6550 = 99%

GOOD FIT


Distribution for drive sensors (velocity)
drive gear
drive motor
drive wheel
new
referent
Density
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−0.5
0.0
0.5
1.0
1.5
2.0
0
1
2
3
4
5
6
−1
0
1
2
3
4
5
6
0
2
4
6
8
10
12
−0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2


Distribution for other sensors (velocity)
idle wheel
lifting gear
lifting motor
new
referent
Density
0
1
2
3
4
5
6
8
10
12
14
16
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−0.2
0.2
0.4
0.6
0.8
−0.25
0.00
0.25
0.50
0.75
1.00
1.25
1.50

Compatibility check for acceleration sensors

New data: from 2019-04-01 until 2019-05-01

Referent data: last week

Acceleration sensors

drive gear

$\mu_{ref} = 2611.43$
$\sigma_{ref} = 631.58$
$\sigma^2_{ref} = 398889.62$

$\mu_{new} = 2681.12$
$\sigma_{new} = 621.58$
$\sigma^2_{new} = 386356.34$

$good_{cnt}/all_{cnt}$
7031 / 7033 = 99%

GOOD FIT

drive motor

$\mu_{ref} = 3922.31$
$\sigma_{ref} = 314.32$
$\sigma^2_{ref} = 98794.73$

$\mu_{new} = 3753.2$
$\sigma_{new} = 361.14$
$\sigma^2_{new} = 130422.11$

$good_{cnt}/all_{cnt}$
7026 / 7033 = 99%

GOOD FIT

drive wheel

$\mu_{ref} = 466.96$
$\sigma_{ref} = 89.93$
$\sigma^2_{ref} = 8087.73$

$\mu_{new} = 440.53$
$\sigma_{new} = 63.02$
$\sigma^2_{new} = 3971.23$

$good_{cnt}/all_{cnt}$
7016 / 7028 = 99%

GOOD FIT

idle wheel

$\mu_{ref} = 521.01$
$\sigma_{ref} = 75.96$
$\sigma^2_{ref} = 5769.39$

$\mu_{new} = 518.41$
$\sigma_{new} = 70.45$
$\sigma^2_{new} = 4962.7$

$good_{cnt}/all_{cnt}$
7025 / 7029 = 99%

GOOD FIT

lifting gear

$\mu_{ref} = 3185.39$
$\sigma_{ref} = 563.81$
$\sigma^2_{ref} = 317884.87$

$\mu_{new} = 3098.26$
$\sigma_{new} = 565.5$
$\sigma^2_{new} = 319786.27$

$good_{cnt}/all_{cnt}$
9292 / 9304 = 99%

GOOD FIT

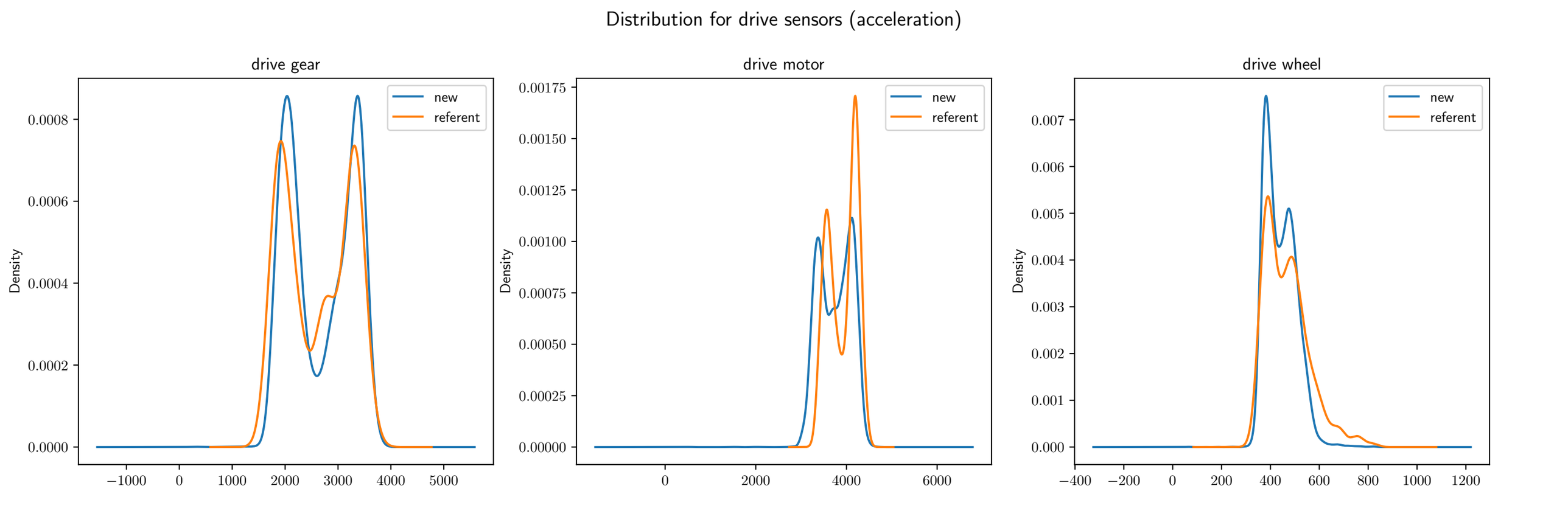
lifting motor

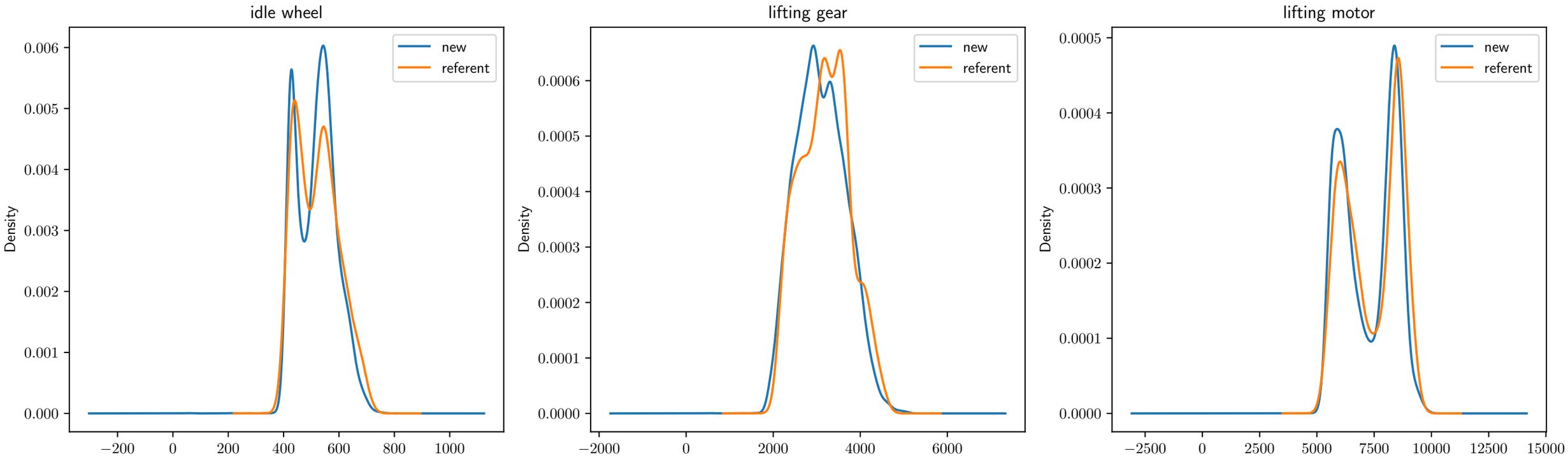
$\mu_{ref} = 7411.52$
$\sigma_{ref} = 1200.84$
$\sigma^2_{ref} = 1442012.18$

$\mu_{new} = 7255.44$
$\sigma_{new} = 1194.29$
$\sigma^2_{new} = 1426335.69$

$good_{cnt}/all_{cnt}$
9301 / 9304 = 99%

GOOD FIT


Distribution for drive sensors (acceleration)
drive gear
drive motor
drive wheel
new
referent
Density
0.0000
0.0002
0.0004
0.0006
0.0008
−1000
0
1000
2000
3000
4000
5000
0.00000
0.00025
0.00050
0.00075
0.00100
0.00125
0.00150
0.00175
0
2000
4000
6000
0.000
0.001
0.002
0.003
0.004
0.005
0.006
0.007
−400
−200
0
200
400
600
800
1000
1200


Distribution for other sensors (acceleration)
idle wheel
lifting gear
lifting motor
new
referent
Density
0.006
0.005
0.004
0.003
0.002
0.001
0.000
−200
0
200
400
600
800
1000
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0.0000
−2000
2000
4000
6000
−2500
2500
5000
7500
10000
12500
15000

Compatibility check for velocity sensors

New data:from 2019-04-01 until 2019-05-01

Referent data: last 100 days

Velocity sensors

drive gear

$\mu_{ref} = 1.16$
$\sigma_{ref} = 0.15$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 1.17$
$\sigma_{new} = 0.15$
$\sigma^2_{new} = 0.02$

$good_{cnt}/all_{cnt}$
4921 / 4925 = 99%

GOOD FIT

drive motor

$\mu_{ref} = 3.74$
$\sigma_{ref} = 0.17$
$\sigma^2_{ref} = 0.03$

$\mu_{new} = 3.75$
$\sigma_{new} = 0.12$
$\sigma^2_{new} = 0.02$

$good_{cnt}/all_{cnt}$
4923 / 4936 = 99%

GOOD FIT

drive wheel

$\mu_{ref} = 0.81$
$\sigma_{ref} = 0.05$
$\sigma^2_{ref} = 0.0$

$\mu_{new} = 0.81$
$\sigma_{new} = 0.04$
$\sigma^2_{new} = 0.0$

$good_{cnt}/all_{cnt}$
4900 / 4914 = 99%

GOOD FIT

idle wheel

$\mu_{ref} = 1.68$
$\sigma_{ref} = 0.1$
$\sigma^2_{ref} = 0.01$

$\mu_{new} = 1.72$
$\sigma_{new} = 0.1$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
4819 / 4908 = 98%

GOOD FIT

lifting gear

$\mu_{ref} = 0.41$
$\sigma_{ref} = 0.03$
$\sigma^2_{ref} = 0.0$

$\mu_{new} = 0.42$
$\sigma_{new} = 0.03$
$\sigma^2_{new} = 0.0$

$good_{cnt}/all_{cnt}$
6419 / 6430 = 99%

GOOD FIT

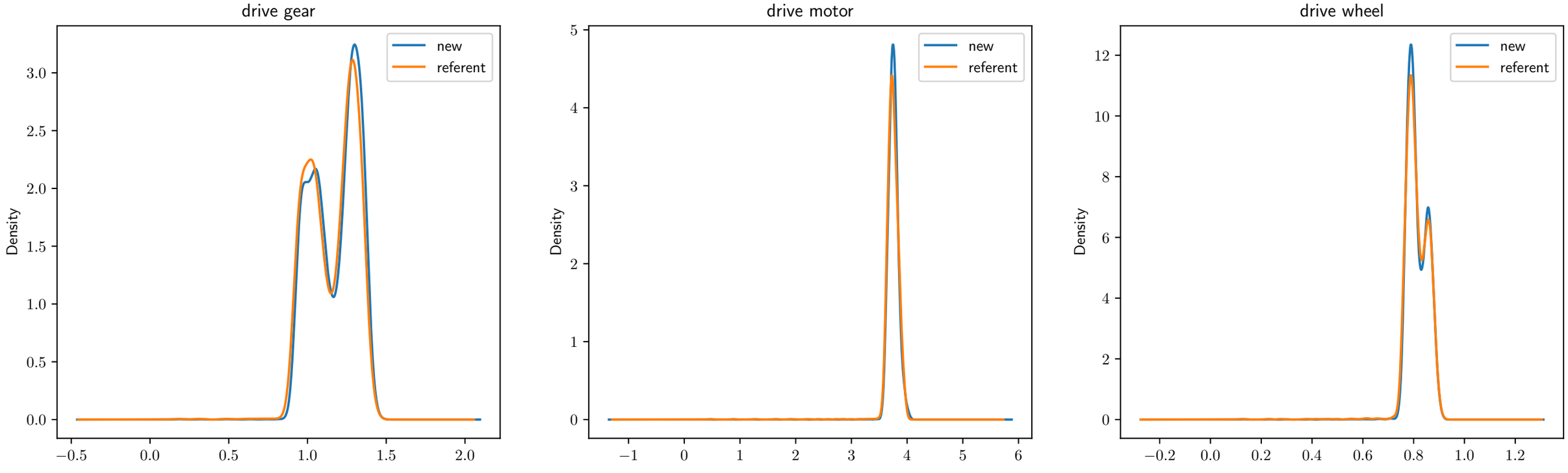
lifting motor

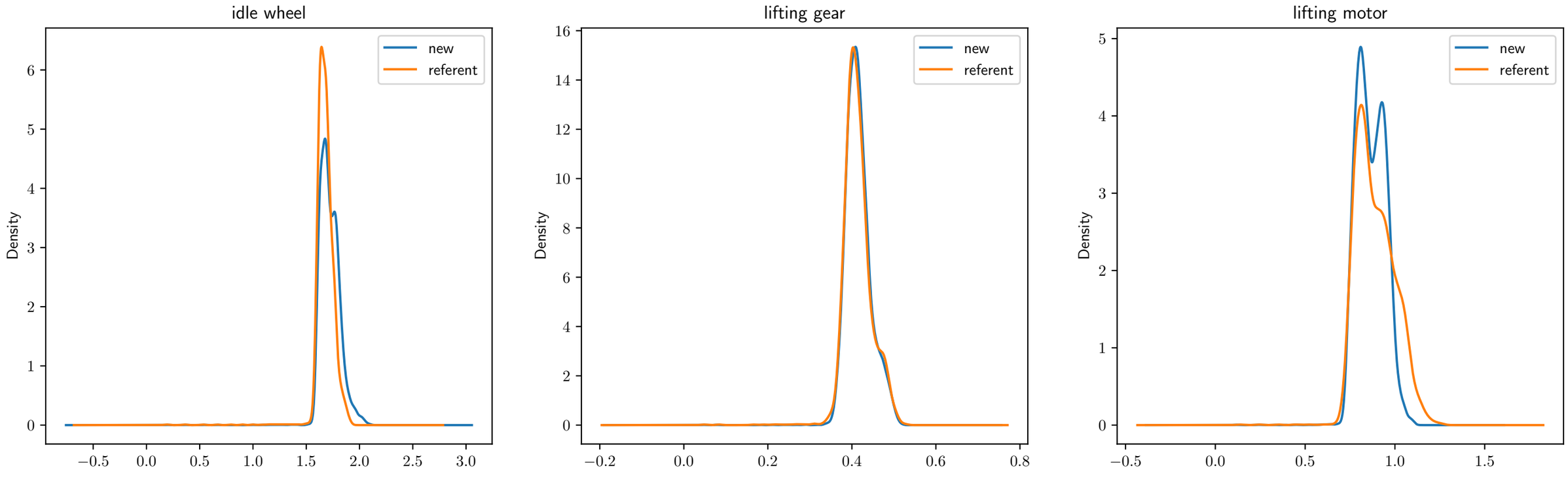
$\mu_{ref} = 0.89$
$\sigma_{ref} = 0.11$
$\sigma^2_{ref} = 0.01$

$\mu_{new} = 0.87$
$\sigma_{new} = 0.08$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
6543 / 6550 = 99%

GOOD FIT


Distribution for drive sensors (velocity)
drive gear
drive motor
drive wheel
new
referent
Density
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−0.5
0.0
0.5
1.0
1.5
2.0
0
1
2
3
4
5
−1
0
1
2
3
4
5
6
0
2
4
6
8
10
12
−0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2


Distribution for other sensors (velocity)
idle wheel
lifting gear
lifting motor
new
referent
Density

Compatibility check for acceleration sensors

New data: from 2019-04-01 until 2019-05-01

Referent data: last 100 days

Acceleration sensors

drive gear

$\mu_{ref} = 2635.92$
$\sigma_{ref} = 647.26$
$\sigma^2_{ref} = 418948.84$

$\mu_{new} = 2681.12$
$\sigma_{new} = 621.58$
$\sigma^2_{new} = 386356.34$

$good_{cnt}/all_{cnt}$
7031 / 7033 = 99%

GOOD FIT

drive motor

$\mu_{ref} = 3937.2$
$\sigma_{ref} = 332.63$
$\sigma^2_{ref} = 110641.14$

$\mu_{new} = 3753.2$
$\sigma_{new} = 361.14$
$\sigma^2_{new} = 130422.11$

$good_{cnt}/all_{cnt}$
7026 / 7033 = 99%

GOOD FIT

drive wheel

$\mu_{ref} = 463.71$
$\sigma_{ref} = 88.91$
$\sigma^2_{ref} = 7905.06$

$\mu_{new} = 440.53$
$\sigma_{new} = 63.02$
$\sigma^2_{new} = 3971.23$

$good_{cnt}/all_{cnt}$
7016 / 7028 = 99%

GOOD FIT

idle wheel

$\mu_{ref} = 522.97$
$\sigma_{ref} = 78.76$
$\sigma^2_{ref} = 6203.53$

$\mu_{new} = 518.41$
$\sigma_{new} = 70.45$
$\sigma^2_{new} = 4962.7$

$good_{cnt}/all_{cnt}$
7025 / 7029 = 99%

GOOD FIT

lifting gear

$\mu_{ref} = 3199.39$
$\sigma_{ref} = 556.91$
$\sigma^2_{ref} = 310146.41$

$\mu_{new} = 3098.26$
$\sigma_{new} = 565.5$
$\sigma^2_{new} = 319786.27$

$good_{cnt}/all_{cnt}$
9292 / 9304 = 99%

GOOD FIT

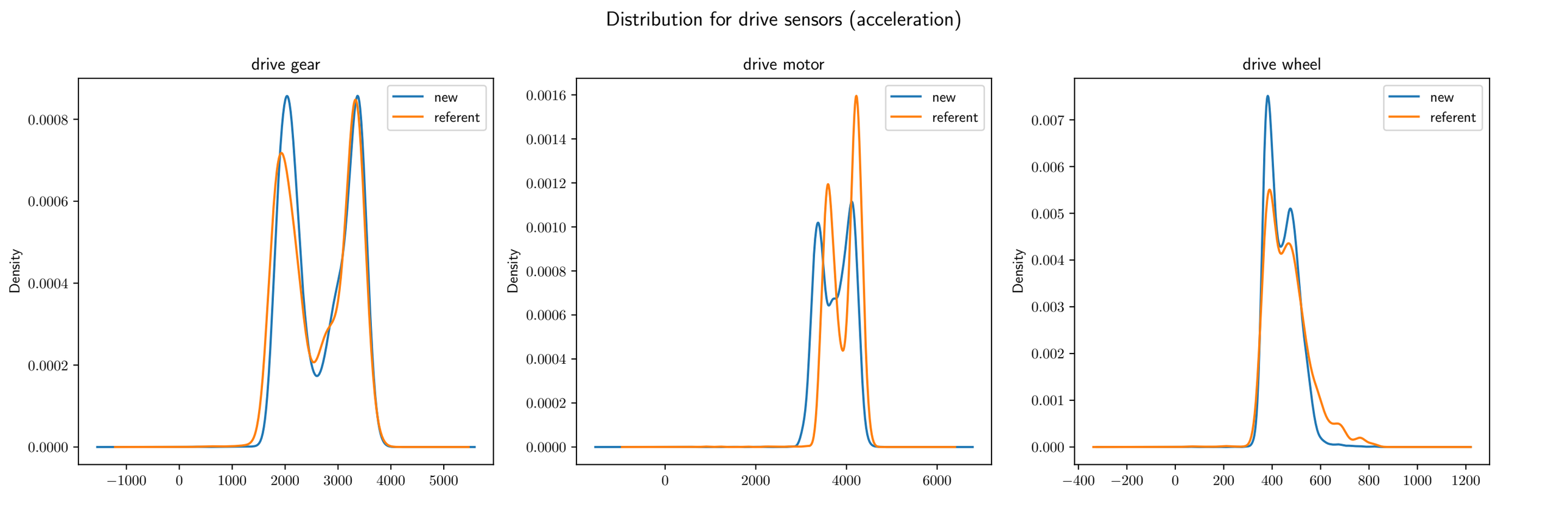
lifting motor

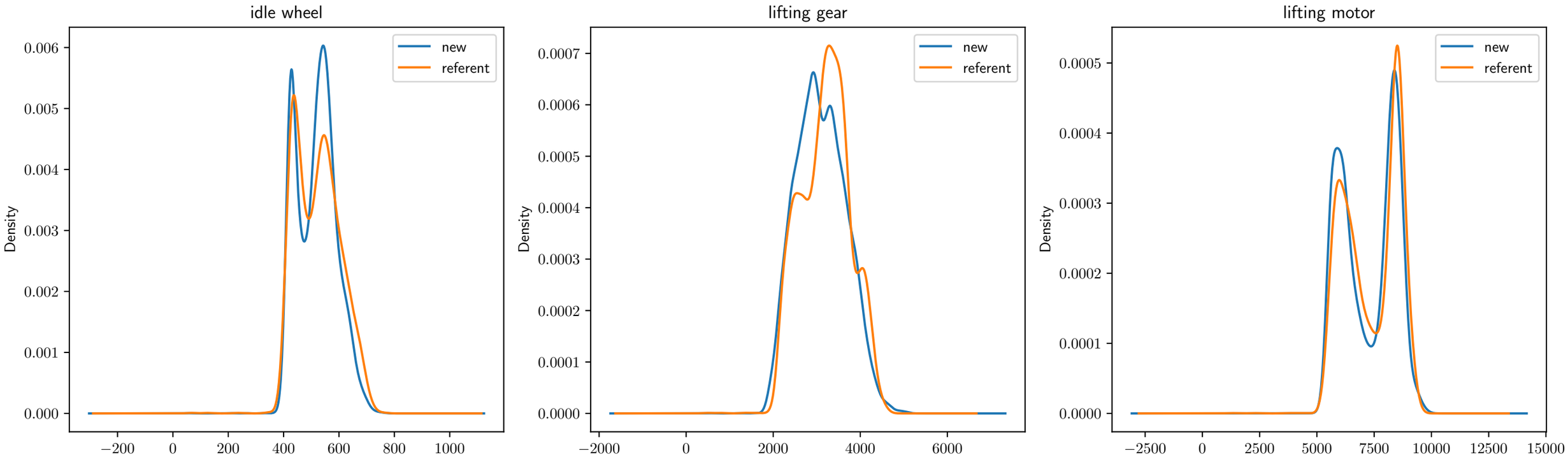
$\mu_{ref} = 7382.98$
$\sigma_{ref} = 1179.88$
$\sigma^2_{ref} = 1392112.63$

$\mu_{new} = 7255.44$
$\sigma_{new} = 1194.29$
$\sigma^2_{new} = 1426335.69$

$good_{cnt}/all_{cnt}$
9301 / 9304 = 99%

GOOD FIT


Distribution for drive sensors (acceleration)
drive gear
drive motor
drive wheel
new
referent
Density
0.0000
0.0002
0.0004
0.0006
0.0008
0.0010
0.0012
0.0014
0.0016
0.000
0.001
0.002
0.003
0.004
0.005
0.006
0.007
−1000
0
1000
2000
3000
4000
5000
6000
−400
−200
200
400
600
800
1000
1200

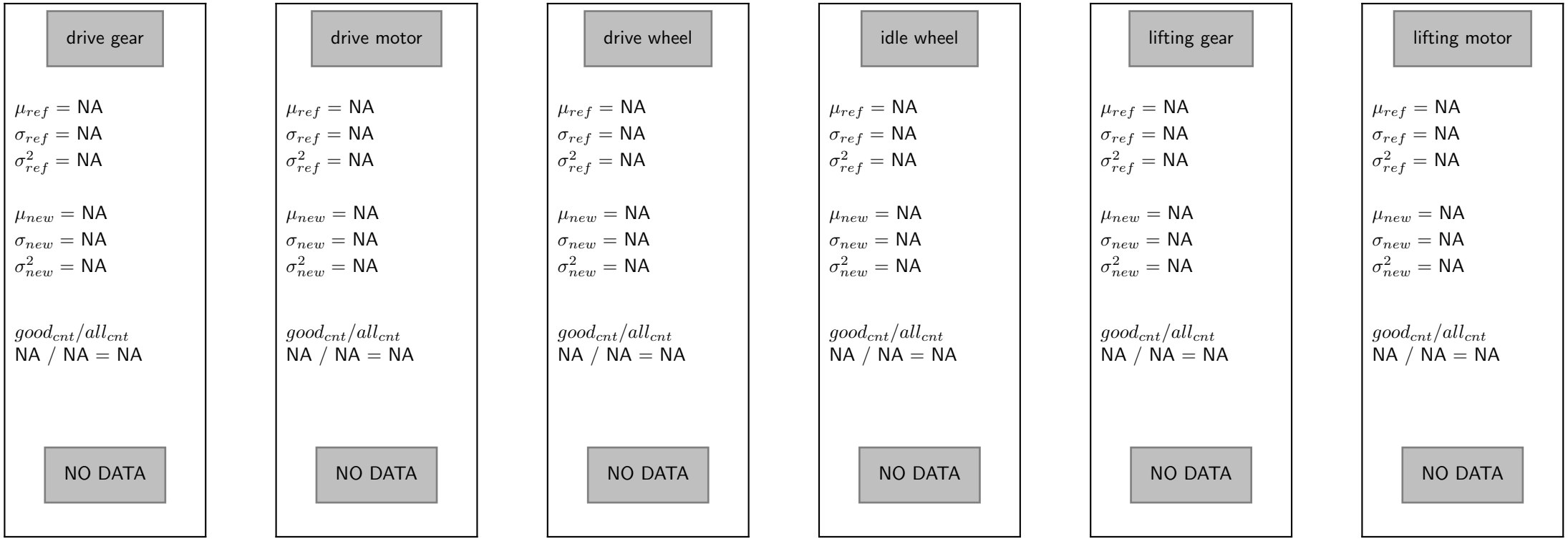

Distribution for other sensors (acceleration)
idle wheel
lifting gear
lifting motor
new
referent
Density
0.006
0.005
0.004
0.003
0.002
0.001
0.000
−200
0
200
400
600
800
1000
0.0007
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0.0000
−2000
2000
4000
6000
−2500
2500
5000
7500
10000
12500
15000

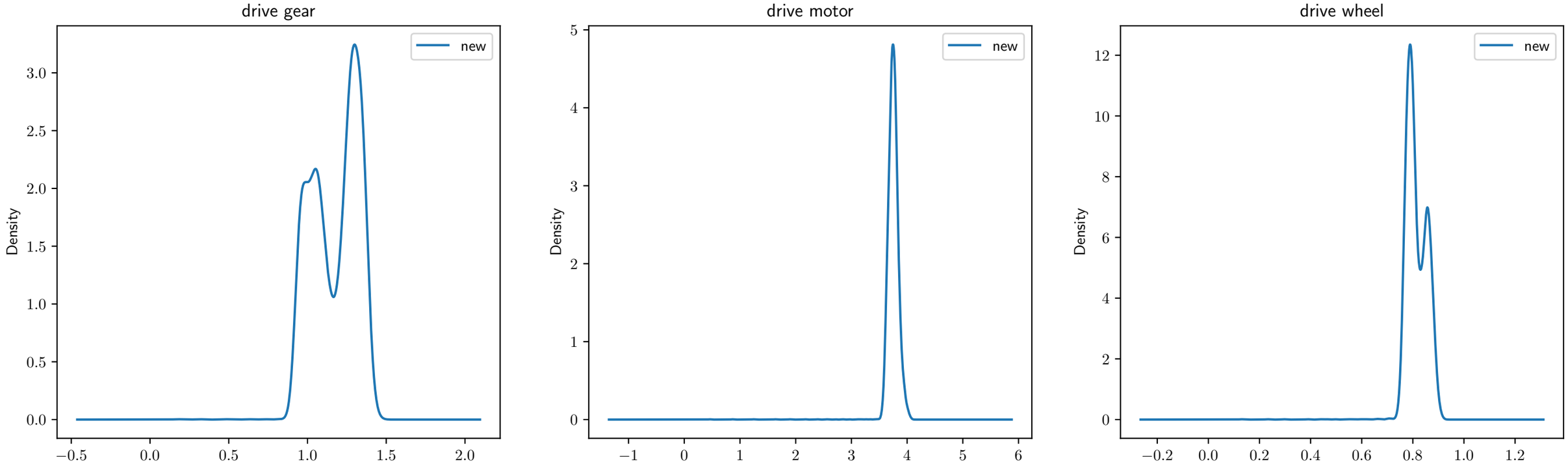
Compatibility check for velocity sensors

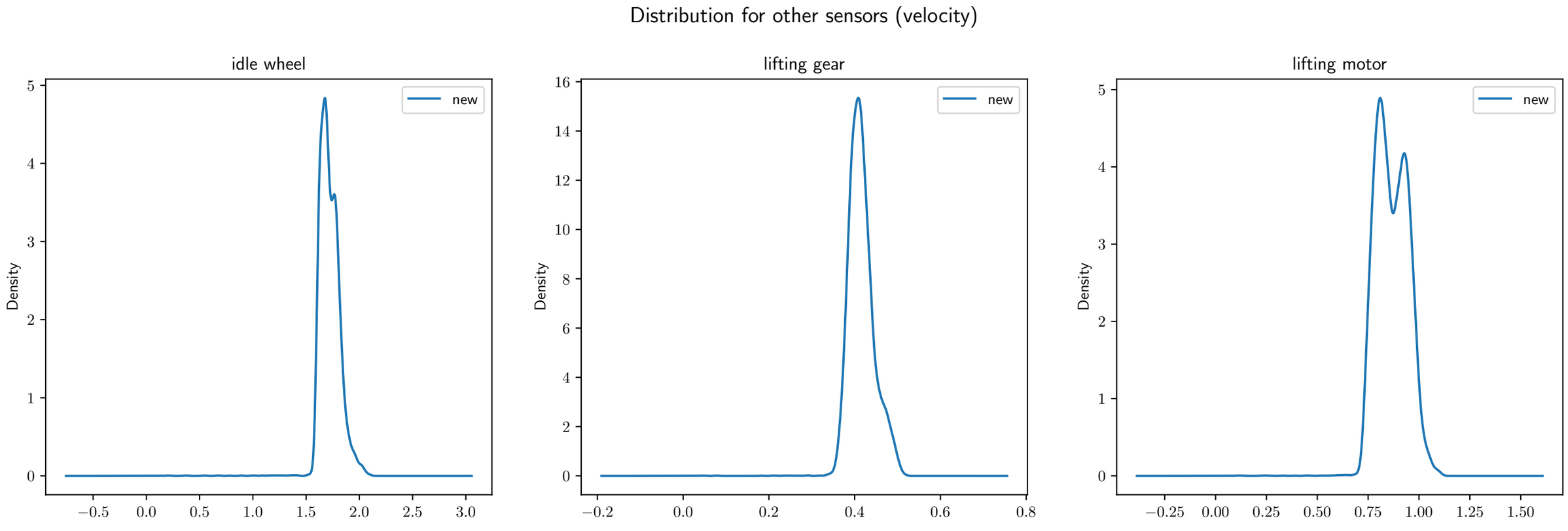
New data:from 2019-04-01 until 2019-05-01

Referent data: recommended distribution (from .config)

Velocity sensors




Distribution for drive sensors (velocity)
drive gear
drive motor
drive wheel
new
Density
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−0.5
0.0
0.5
1.0
1.5
2.0
0
1
2
3
4
5
6
−1
0
1
2
3
4
5
6
0
2
4
6
8
10
12
−0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2


Distribution for other sensors (velocity)
idle wheel
lifting gear
lifting motor
new
Density
−0.5 0.0 0.5 1.0 1.5 2.0 2.5 3.0
−0.2 0.0 0.2 0.4 0.6 0.8
−0.25 0.00 0.25 0.50 0.75 1.00 1.25 1.50

Compatibility check for acceleration sensors

New data: from 2019-04-01 until 2019-05-01

Referent data: recommended distribution (from .config)

Acceleration sensors

drive gear

μ_{ref} = NA
σ_{ref} = NA
σ^2_{ref} = NA

μ_{new} = NA
σ_{new} = NA
σ^2_{new} = NA

$good_{cnt}/all_{cnt}$
NA / NA = NA

NO DATA

drive motor

μ_{ref} = NA
σ_{ref} = NA
σ^2_{ref} = NA

μ_{new} = NA
σ_{new} = NA
σ^2_{new} = NA

$good_{cnt}/all_{cnt}$
NA / NA = NA

NO DATA

drive wheel

μ_{ref} = NA
σ_{ref} = NA
σ^2_{ref} = NA

μ_{new} = NA
σ_{new} = NA
σ^2_{new} = NA

$good_{cnt}/all_{cnt}$
NA / NA = NA

NO DATA

idle wheel

μ_{ref} = NA
σ_{ref} = NA
σ^2_{ref} = NA

μ_{new} = NA
σ_{new} = NA
σ^2_{new} = NA

$good_{cnt}/all_{cnt}$
NA / NA = NA

NO DATA

lifting gear

μ_{ref} = NA
σ_{ref} = NA
σ^2_{ref} = NA

μ_{new} = NA
σ_{new} = NA
σ^2_{new} = NA

$good_{cnt}/all_{cnt}$
NA / NA = NA

NO DATA

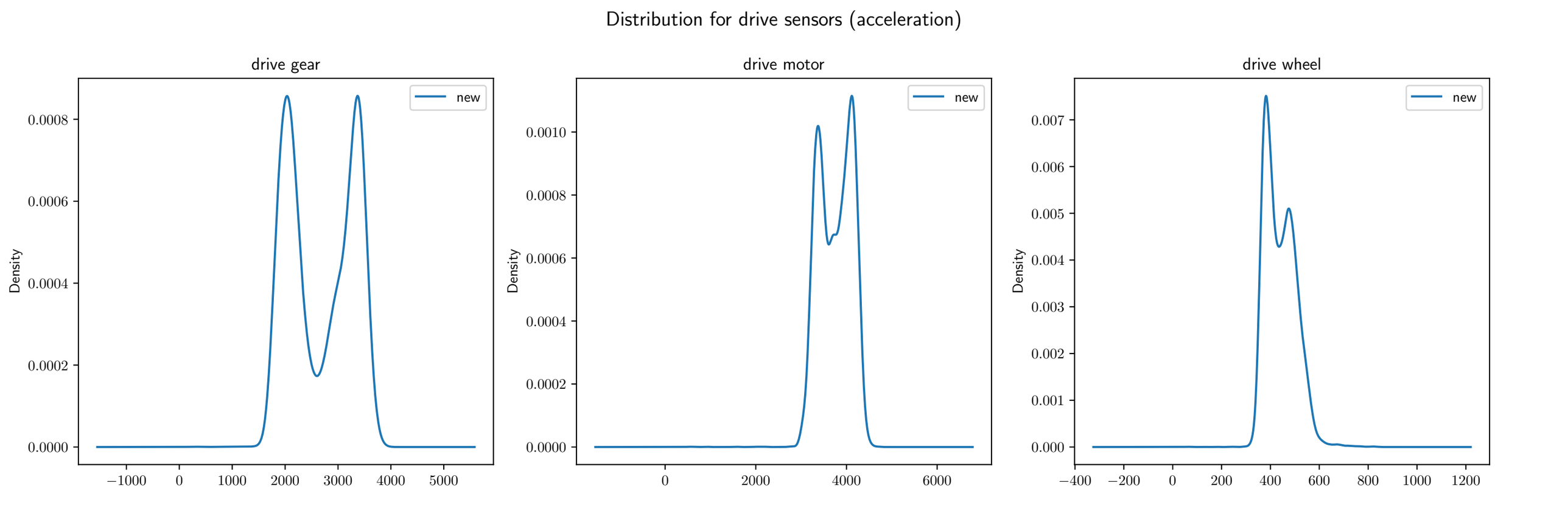
lifting motor

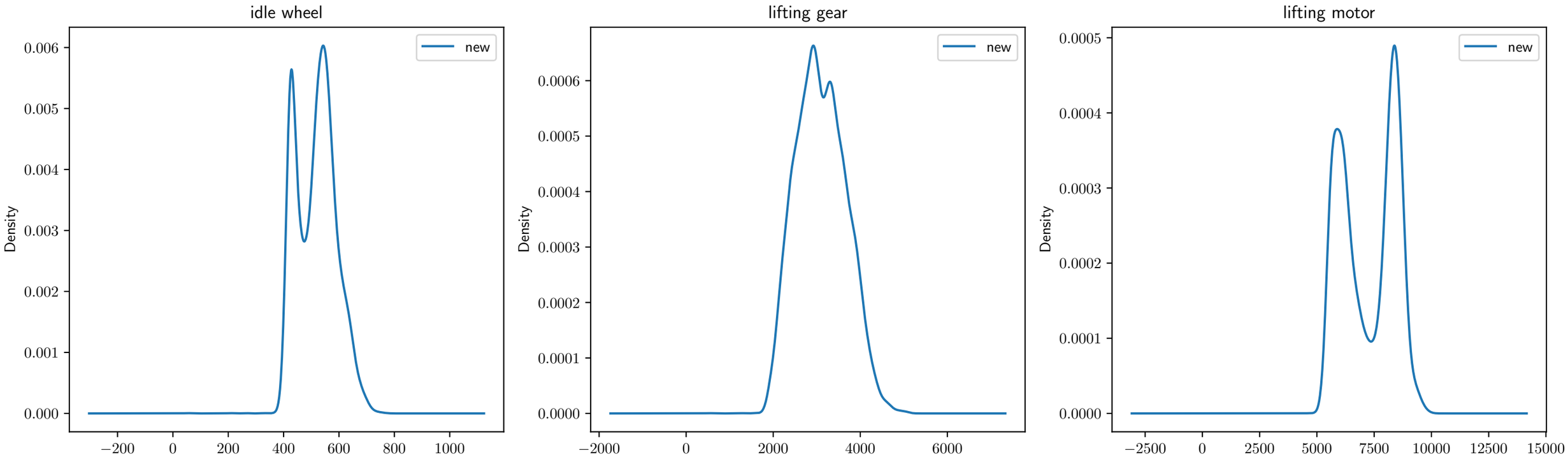
μ_{ref} = 100.4
σ_{ref} = 1139.61
σ^2_{ref} = 1298708.67

μ_{new} = 7255.44
σ_{new} = 1194.29
σ^2_{new} = 1426335.69

$good_{cnt}/all_{cnt}$
3 / 9304 = 0%

BAD FIT


Distribution for drive sensors (acceleration)
drive gear
drive motor
drive wheel
new
Density
0.0000
0.0002
0.0004
0.0006
0.0008
0.0010
0.000
0.001
0.002
0.003
0.004
0.005
0.006
0.007
−1000
0
1000
2000
3000
4000
5000
6000
−400
−200
200
400
600
800
1000
1200


Distribution for other sensors (acceleration)
idle wheel
lifting gear
lifting motor
new
Density
0.006
0.005
0.004
0.003
0.002
0.001
0.000
−200
0
200
400
600
800
1000
0.0006
0.0005
0.0004
0.0003
0.0002
0.0001
0.0000
−2000
2000
4000
6000
0.0003
0.0002
0.0001
−2500
2500
5000
7500
10000
12500
15000