**Supplementary Table 2:** Alarm events lasting for more than 10 minutes

|  |  |  |  |
| --- | --- | --- | --- |
| **Rank** | **Recording** | **Alarm** | **Duration (seconds)** |
| **1** | DG037 | Check neonatal flow sensor | 48496 |
| **2** | DG007 | Check neonatal flow sensor | 43266 |
| **3** | DG010 | Check neonatal flow sensor | 34963 |
| **4** | DG037 | Check neonatal flow sensor | 28918 |
| **5** | DG033 | Check neonatal flow sensor | 26796 |
| **6** | DG017 | Check neonatal flow sensor | 23123 |
| **7** | DG032\_2 | Minute volume > high limit | 15579 |
| **8** | DG015 | Check neonatal flow sensor | 12101 |
| **9** | DG026 | Check neonatal flow sensor | 10472 |
| **10** | DG042 | Check neonatal flow sensor | 6873 |
| **11** | DG026 | Check neonatal flow sensor | 6486 |
| **12** | DG022 | Volume not constant | 6408 |
| **13** | DG050 | Minute volume > high limit | 6148 |
| **14** | DG045 | Check neonatal flow sensor | 4926 |
| **15** | DG040\_1 | Minute volume > high limit | 4516 |
| **16** | DG038\_1 | Volume not constant | 4474 |
| **17** | DG005\_1 | Volume not constant | 4076 |
| **18** | DG022 | Check neonatal flow sensor | 3458 |
| **19** | DG022 | Minute volume > high limit | 3200 |
| **20** | DG022 | Volume not constant | 3186 |
| **21** | DG032\_2 | Check neonatal flow sensor | 2889 |
| **22** | DG030 | Check neonatal flow sensor | 2880 |
| **23** | DG043 | Check neonatal flow sensor | 2714 |
| **24** | DG022 | Volume not constant | 2626 |
| **25** | DG005\_1 | Volume not constant | 2426 |
| **26** | DG005\_1 | Check neonatal flow sensor | 2316 |
| **27** | DG009 | Check neonatal flow sensor | 2262 |
| **28** | DG038\_1 | Volume not constant | 2222 |
| **29** | DG005\_1 | Volume not constant | 2121 |
| **30** | DG030 | Check neonatal flow sensor | 2104 |
| **31** | DG038\_1 | Minute volume < low limit | 2087 |
| **32** | DG038\_1 | Volume not constant | 2040 |
| **33** | DG005\_1 | Volume not constant | 2038 |
| **34** | DG022 | Check neonatal flow sensor | 2021 |
| **35** | DG030 | Check neonatal flow sensor | 2010 |
| **36** | DG045 | Check neonatal flow sensor | 1945 |
| **37** | DG022 | Minute volume > high limit | 1890 |
| **38** | DG021 | Pressure measurement inoperable | 1856 |
| **39** | DG021 | Pressure measurement inoperable | 1824 |
| **40** | DG032\_2 | Minute volume > high limit | 1634 |
| **41** | DG050 | Communication error RS232 port | 1621 |
| **42** | DG007 | Check neonatal flow sensor | 1483 |
| **43** | DG038\_1 | Volume not constant | 1426 |
| **44** | DG043 | Minute volume < low limit | 1422 |
| **45** | DG043 | Tidal volume < low Limit | 1409 |
| **46** | DG032\_2 | Respiratory rate > high limit | 1377 |
| **47** | DG032\_2 | Disconnection ventilator | 1352 |
| **48** | DG032\_2 | Minute volume < low limit | 1352 |
| **49** | DG049 | A setting, alarm limit or ventilation mode\* | 1349 |
| **50** | DG032\_2 | Minute volume < low limit | 1294 |
| **51** | DG048 | Tidal volume < low Limit | 1251 |
| **52** | DG005\_1 | Volume not constant | 1243 |
| **53** | DG026 | Minute volume < low limit | 1155 |
| **54** | DG030 | Check neonatal flow sensor | 1146 |
| **55** | DG021 | Pressure measurement inoperable | 1130 |
| **56** | DG037 | Communication error RS232 port | 1125 |
| **57** | DG022 | Minute volume > high limit | 1116 |
| **58** | DG038\_1 | Volume not constant | 1098 |
| **59** | DG022 | Volume not constant | 1089 |
| **60** | DG009 | Disconnection ventilator | 1083 |
| **61** | DG038\_1 | Volume not constant | 1075 |
| **62** | DG009 | Minute volume < low limit | 1030 |
| **63** | DG041 | Check neonatal flow sensor | 1010 |
| **64** | DG040\_1 | Check neonatal flow sensor | 983 |
| **65** | DG050 | A setting, alarm limit or ventilation mode\* | 943 |
| **66** | DG022 | Volume not constant | 923 |
| **67** | DG005\_1 | Volume not constant | 872 |
| **68** | DG005\_1 | Volume not constant | 845 |
| **69** | DG022 | Minute volume > high limit | 838 |
| **70** | DG028 | Check neonatal flow sensor | 769 |
| **71** | DG006\_2 | Respiratory rate > high limit | 736 |
| **72** | DG014 | Volume not constant | 733 |
| **73** | DG022 | Volume not constant | 719 |
| **74** | DG014 | Volume not constant | 707 |
| **75** | DG005\_1 | Minute volume > high limit | 704 |
| **76** | DG038\_1 | Volume not constant | 685 |
| **77** | DG004 | Tidal volume < low Limit | 684 |
| **78** | DG050 | Minute volume < low limit | 663 |
| **79** | DG038\_1 | Volume not constant | 658 |
| **80** | DG038\_1 | Minute volume < low limit | 656 |
| **81** | DG021 | Pressure measurement inoperable | 640 |
| **82** | DG032\_2 | Pressure measurement inoperable | 639 |
| **83** | DG038\_1 | Check neonatal flow sensor | 637 |
| **84** | DG005\_1 | Volume not constant | 624 |
| **85** | DG005\_1 | Volume not constant | 621 |
| **86** | DG048 | Tidal volume < low Limit | 616 |

\* Full name: A setting, alarm limit or ventilation mode was changed, but the change was not confirmed. If necessary, the user can adjust and confirm the setting again with the rotary knob.