

15. 状态反馈信息

15.1. 状态反馈信息对照表

在 Python 版本发生变更: SDK-v2.0.8-3.7.8

变量	含义
program_state	程序运行状态, 1-停止; 2-运行; 3-暂停
robot_state	机器人运动状态, 1-停止; 2-运行; 3-暂停; 4-拖动
main_code	主故障码
sub_code	子故障码”
robot_mode	机器人模式, 0-自动模式; 1-手动模式
jt_cur_pos[i]	关节当前位置,单位deg,i:0~5
tl_cur_pos[i]	工具当前位姿,单位deg&mm,i:0~5
flange_cur_pos[i]	末端法兰当前位姿,单位deg&mm,i:0~5
actual_qd[i]	机器人当前关节速度,单位deg/s^2,i:0~5
actual_qdd[i]	机器人当前关节加速度,单位mm/s,i:0~5
target_TCP_CmpSpeed[i]	机器人TCP合成指令速度,单位mm/s°/s,i:0~1
target_TCP_Speed[i]	机器人TCP指令速度,单位mm/s°/s,i:0~5
actual_TCP_CmpSpeed[i]	机器人TCP合成实际速度,单位mm/s°/s,i:0~1
actual_TCP_Speed[i]	机器人TCP实际速度,单位mm/s°/s,i:0~5
jt_cur_tor[i]	当前扭矩,单位N·m ,i:0~5
tool	应用的工具坐标系编号
user	应用的工件坐标系编号
cl_dgt_output_h	控制箱数字量IO输出15-8
cl_dgt_output_l	控制箱数字量IO输出7-0
tl_dgt_output_l	工具数字量IO输出7-0, 仅bit0-bit1有效
dgt_input_h	控制箱数字量IO输入15-8
cl_dgt_input_l	控制箱数字量IO输入7-0
tl_dgt_input_l	工具数字量IO输入7-0, 仅bit0-bit1有效



变量	含义
cl_analog_input[i]	控制箱模拟量输入,i:0~2
tl_anglog_input	工具模拟量输入
ft_sensor_raw_data	力矩传感器原始数据,单位N&Nm,i:0~5
ft_sensor_data	力矩传感器数据,单位N&Nm,i:0~5
ft_sensor_active	力矩传感器激活状态, 0–复位, 1–激活
EmergencyStop	急停标志,0–急停未按下,1–急停按下
motion_done	运动到位信号,1–到位, 0–未到位
gripper_motiondone	夹爪运动完成信号,1–完成, 0–未完成
mc_queue_len	运动指令队列长度
collisionState	碰撞检测,1–碰撞, 0–无碰撞
trajectory_pnum	轨迹点编号
safety_stop0_state	安全停止信号SI0
safety_stop1_state	安全停止信号SI1
gripper_fault_id	错误夹爪号
gripper_fault	夹爪故障
gripper_active	夹爪激活状态, 0–未激活, 1–激活
gripper_position	夹爪位置(百分比)
gripper_speed	夹爪速度(百分比)
gripper_current	夹爪电流(百分比)
gripper_tmp	夹爪温度,单位℃
gripper_voltage	夹爪电压,单位V
auxState.servold	485扩展轴,伺服驱动器ID号,i:0~3
auxState.servoErrCode	485扩展轴,伺服驱动器故障码,i:0~3
auxState.servoState	485扩展轴,伺服驱动器状态,i:0~3
auxState.servoPos	485扩展轴,伺服当前位置,i:0~3
auxState.servoVel	485扩展轴,伺服当前速度,i:0~3
auxState.servoTorque	485扩展轴,伺服当前转矩,i:0~3
extAxisStatus[i].pos	UDP扩展轴,位置,i:0~3
extAxisStatus[i].vel	UDP扩展轴,速度,i:0~3
extAxisStatus[i].errorCode	UDP扩展轴,故障码,i:0~3
extAxisStatus[i].ready	UDP扩展轴,伺服准备好,i:0~3



变量	含义
extAxisStatus[i].inPos	UDP扩展轴,伺服到位,i:0~3
extAxisStatus[i].alarm	UDP扩展轴,伺服报警,i:0~3
extAxisStatus[i].flerr	UDP扩展轴,跟随误差,i:0~3
extAxisStatus[i].nlimit	UDP扩展轴,到负限位,i:0~3
extAxisStatus[i].pLimit	UDP扩展轴,到正限位,i:0~3
extAxisStatus[i].mdbsOffLine	UDP扩展轴,驱动器485总线掉线
extAxisStatus[i].mdbsTimeout	UDP扩展轴,控制卡与控制箱485通信超时
extAxisStatus[i].homingStatus	UDP扩展轴,回零状态
extDIState	扩展数字输入状态
extDOState	扩展数字输出状态
extAIState	扩展模拟输入状态
extAOState	扩展模拟输出状态
rbtEnableState	机器人使能状态
jointDriverTorque	关节驱动器当前扭矩
jointDriverTemperature	关节驱动器当前温度
year	年
mouth	月
day	日
hour	小时
minute	分
second	秒
millisecond	毫秒
softwareUpgradeState	机器人软件升级状态
cl_analog_output[i]	控制箱模拟量输出,i:0~1
tl_analog_output	工具模拟量输出
gripperRotNum	旋转夹具当前旋转圈数
gripperRotSpeed	旋转夹具当前旋转速度百分比
gripperRotTorque	旋转夹具当前旋转力矩百分比
endLuaErrCode	末端LUA运行状态



15.1.1. 代码示例

```
1  from fairino import Robot
2  # 与机器人控制器建立连接, 连接成功返回一个机器人对象
3  robot = Robot.RPC('192.168.58.2')
4  print("program_state:", robot.robot_state_pkg.program_state)
5  print("robot_state:", robot.robot_state_pkg.robot_state)
6  print("main_code:", robot.robot_state_pkg.main_code)
7  print("sub_code:", robot.robot_state_pkg.sub_code)
8  print("robot_mode:", robot.robot_state_pkg.robot_mode)
9  print("jt_cur_pos0:", robot.robot_state_pkg.jt_cur_pos[0])
10 print("jt_cur_pos1:", robot.robot_state_pkg.jt_cur_pos[1])
11 print("jt_cur_pos2:", robot.robot_state_pkg.jt_cur_pos[2])
12 print("jt_cur_pos3:", robot.robot_state_pkg.jt_cur_pos[3])
13 print("jt_cur_pos4:", robot.robot_state_pkg.jt_cur_pos[4])
14 print("jt_cur_pos5:", robot.robot_state_pkg.jt_cur_pos[5])
15 print("tl_cur_pos0:", robot.robot_state_pkg.tl_cur_pos[0])
16 print("tl_cur_pos1:", robot.robot_state_pkg.tl_cur_pos[1])
17 print("tl_cur_pos2:", robot.robot_state_pkg.tl_cur_pos[2])
18 print("tl_cur_pos3:", robot.robot_state_pkg.tl_cur_pos[3])
19 print("tl_cur_pos4:", robot.robot_state_pkg.tl_cur_pos[4])
20 print("tl_cur_pos5:", robot.robot_state_pkg.tl_cur_pos[5])
21 print("flange_cur_pos0:", robot.robot_state_pkg.flange_cur_pos[0])
22 print("flange_cur_pos1:", robot.robot_state_pkg.flange_cur_pos[1])
23 print("flange_cur_pos2:", robot.robot_state_pkg.flange_cur_pos[2])
24 print("flange_cur_pos3:", robot.robot_state_pkg.flange_cur_pos[3])
25 print("flange_cur_pos4:", robot.robot_state_pkg.flange_cur_pos[4])
26 print("flange_cur_pos5:", robot.robot_state_pkg.flange_cur_pos[5])
27 print("actual_qd0:", robot.robot_state_pkg.actual_qd[0])
28 print("actual_qd1:", robot.robot_state_pkg.actual_qd[1])
29 print("actual_qd2:", robot.robot_state_pkg.actual_qd[2])
30 print("actual_qd3:", robot.robot_state_pkg.actual_qd[3])
31 print("actual_qd4:", robot.robot_state_pkg.actual_qd[4])
32 print("actual_qd5:", robot.robot_state_pkg.actual_qd[5])
33 print("actual_qdd0:", robot.robot_state_pkg.actual_qdd[0])
34 print("actual_qdd1:", robot.robot_state_pkg.actual_qdd[1])
35 print("actual_qdd2:", robot.robot_state_pkg.actual_qdd[2])
36 print("actual_qdd3:", robot.robot_state_pkg.actual_qdd[3])
37 print("actual_qdd4:", robot.robot_state_pkg.actual_qdd[4])
38 print("actual_qdd5:", robot.robot_state_pkg.actual_qdd[5])
39 print("target_TCP_CmpSpeed0:", robot.robot_state_pkg.target_TCP_CmpSpeed[0])
40 print("target_TCP_CmpSpeed1:", robot.robot_state_pkg.target_TCP_CmpSpeed[1])
41 print("target_TCP_Speed0:", robot.robot_state_pkg.target_TCP_Speed[0])
42 print("target_TCP_Speed1:", robot.robot_state_pkg.target_TCP_Speed[1])
43 print("target_TCP_Speed2:", robot.robot_state_pkg.target_TCP_Speed[2])
44 print("target_TCP_Speed3:", robot.robot_state_pkg.target_TCP_Speed[3])
45 print("target_TCP_Speed4:", robot.robot_state_pkg.target_TCP_Speed[4])
46 print("target_TCP_Speed5:", robot.robot_state_pkg.target_TCP_Speed[5])
47 print("actual_TCP_CmpSpeed0:", robot.robot_state_pkg.actual_TCP_CmpSpeed[0])
48 print("actual_TCP_CmpSpeed1:", robot.robot_state_pkg.actual_TCP_CmpSpeed[1])
49 print("actual_TCP_Speed0:", robot.robot_state_pkg.actual_TCP_Speed[0])
50 print("actual_TCP_Speed1:", robot.robot_state_pkg.actual_TCP_Speed[1])
51 print("actual_TCP_Speed2:", robot.robot_state_pkg.actual_TCP_Speed[2])
52 print("actual_TCP_Speed3:", robot.robot_state_pkg.actual_TCP_Speed[3])
53 print("actual_TCP_Speed4:", robot.robot_state_pkg.actual_TCP_Speed[4])
54 print("actual_TCP_Speed5:", robot.robot_state_pkg.actual_TCP_Speed[5])
55 print("jt_cur_tor0:", robot.robot_state_pkg.jt_cur_tor[0])
56 print("jt_cur_tor1:", robot.robot_state_pkg.jt_cur_tor[1])
57 print("jt_cur_tor2:", robot.robot_state_pkg.jt_cur_tor[2])
58 print("jt_cur_tor3:", robot.robot_state_pkg.jt_cur_tor[3])
59 print("jt_cur_tor4:", robot.robot_state_pkg.jt_cur_tor[4])
60 print("jt_cur_tor5:", robot.robot_state_pkg.jt_cur_tor[5])
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61 print("tool:", robot.robot_state_pkg.tool)
62 print("user:", robot.robot_state_pkg.user)
63 print("cl_dgt_output_h:", robot.robot_state_pkg.cl_dgt_output_h)
64 print("cl_dgt_output_l:", robot.robot_state_pkg.cl_dgt_output_l)
65 print("tl_dgt_output_l:", robot.robot_state_pkg.tl_dgt_output_l)
66 print("cl_dgt_input_h:", robot.robot_state_pkg.cl_dgt_input_h)
67 print("cl_dgt_input_l:", robot.robot_state_pkg.cl_dgt_input_l)
68 print("tl_dgt_input_l:", robot.robot_state_pkg.tl_dgt_input_l)
69 print("cl_analog_input0:", robot.robot_state_pkg.cl_analog_input[0])
70 print("cl_analog_input1:", robot.robot_state_pkg.cl_analog_input[1])
71 print("tl_anglog_input:", robot.robot_state_pkg.tl_anglog_input)
72 print("ft_sensor_raw_data0:", robot.robot_state_pkg.ft_sensor_raw_data[0])
73 print("ft_sensor_raw_data1:", robot.robot_state_pkg.ft_sensor_raw_data[1])
74 print("ft_sensor_raw_data2:", robot.robot_state_pkg.ft_sensor_raw_data[2])
75 print("ft_sensor_raw_data3:", robot.robot_state_pkg.ft_sensor_raw_data[3])
76 print("ft_sensor_raw_data4:", robot.robot_state_pkg.ft_sensor_raw_data[4])
77 print("ft_sensor_raw_data5:", robot.robot_state_pkg.ft_sensor_raw_data[5])
78 print("ft_sensor_data0:", robot.robot_state_pkg.ft_sensor_data[0])
79 print("ft_sensor_data1:", robot.robot_state_pkg.ft_sensor_data[1])
80 print("ft_sensor_data2:", robot.robot_state_pkg.ft_sensor_data[2])
81 print("ft_sensor_data3:", robot.robot_state_pkg.ft_sensor_data[3])
82 print("ft_sensor_data4:", robot.robot_state_pkg.ft_sensor_data[4])
83 print("ft_sensor_data5:", robot.robot_state_pkg.ft_sensor_data[5])
84 print("ft_sensor_active:", robot.robot_state_pkg.ft_sensor_active)
85 print("EmergencyStop:", robot.robot_state_pkg.EmergencyStop)
86 print("motion_done:", robot.robot_state_pkg.motion_done)
87 print("gripper_motiondone:", robot.robot_state_pkg.gripper_motiondone)
88 print("mc_queue_len:", robot.robot_state_pkg.mc_queue_len)
89 print("collisionState:", robot.robot_state_pkg.collisionState)
90 print("trajectory_pnum:", robot.robot_state_pkg.trajectory_pnum)
91 print("safety_stop0_state:", robot.robot_state_pkg.safety_stop0_state)
92 print("safety_stop1_state:", robot.robot_state_pkg.safety_stop1_state)
93 print("gripper_fault_id:", robot.robot_state_pkg.gripper_fault_id)
94 print("gripper_fault:", robot.robot_state_pkg.gripper_fault)
95 print("gripper_active:", robot.robot_state_pkg.gripper_active)
96 print("gripper_position:", robot.robot_state_pkg.gripper_position)
97 print("gripper_speed:", robot.robot_state_pkg.gripper_speed)
98 print("gripper_current:", robot.robot_state_pkg.gripper_current)
99 print("gripper_tmp:", robot.robot_state_pkg.gripper_tmp)
100 print("gripper_voltage:", robot.robot_state_pkg.gripper_voltage)
101 print("auxState.servoId:", robot.robot_state_pkg.auxState.servoId)
102 print("auxState.servoErrCode:", robot.robot_state_pkg.auxState.servoErrCode)
103 print("auxState.servoState:", robot.robot_state_pkg.auxState.servoState)
104 print("auxState.servoPos:", robot.robot_state_pkg.auxState.servoPos)
105 print("auxState.servoVel:", robot.robot_state_pkg.auxState.servoVel)
106 print("auxState.servoTorque:", robot.robot_state_pkg.auxState.servoTorque)
107 for i in range(4):
108     print("extAxisStatus.pos:", i, robot.robot_state_pkg.extAxisStatus[i].pos)
109     print("extAxisStatus.vel:", i, robot.robot_state_pkg.extAxisStatus[i].vel)
110     print("extAxisStatus.errorCode:",
i, robot.robot_state_pkg.extAxisStatus[i].errorCode)
111     print("extAxisStatus.ready:",
i, robot.robot_state_pkg.extAxisStatus[i].ready)
112     print("extAxisStatus.inPos:",
i, robot.robot_state_pkg.extAxisStatus[i].inPos)
113     print("extAxisStatus.alarm:",
i, robot.robot_state_pkg.extAxisStatus[i].alarm)
114     print("extAxisStatus.flerr:",
i, robot.robot_state_pkg.extAxisStatus[i].flerr)
115     print("extAxisStatus.nlimit:",
i, robot.robot_state_pkg.extAxisStatus[i].nlimit)
116     print("extAxisStatus.pLimit:",
i, robot.robot_state_pkg.extAxisStatus[i].pLimit)
117     print("extAxisStatus.mdbsoffLine:",

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i,robot.robot_state_pkg.extAxisStatus[i].mdbsOffLine)
118     print("extAxisStatus.mdbstimeout:",
i,robot.robot_state_pkg.extAxisStatus[i].mdbsTimeout)
119     print("extAxisStatus.homingStatus:",
i,robot.robot_state_pkg.extAxisStatus[i].homingStatus)
120     for i in range(8):
121         print("extDIState:",i, robot.robot_state_pkg.extDIState[i])
122         print("extDOState:", i,robot.robot_state_pkg.extDOState[i])
123     for i in range(4):
124         print("extAIState:", i,robot.robot_state_pkg.extAIState[i])
125         print("extAOState:", robot.robot_state_pkg.extAOState[i])
126     print("rbtEnableState:", robot.robot_state_pkg.rbtEnableState)
127     print("jointDriverTorque0:", robot.robot_state_pkg.jointDriverTorque[0])
128     print("jointDriverTorque1:", robot.robot_state_pkg.jointDriverTorque[1])
129     print("jointDriverTorque2:", robot.robot_state_pkg.jointDriverTorque[2])
130     print("jointDriverTorque3:", robot.robot_state_pkg.jointDriverTorque[3])
131     print("jointDriverTorque4:", robot.robot_state_pkg.jointDriverTorque[4])
132     print("jointDriverTorque5:", robot.robot_state_pkg.jointDriverTorque[5])
133     print("jointDriverTemperature:",
robot.robot_state_pkg.jointDriverTemperature[0])
134     print("jointDriverTemperature:",
robot.robot_state_pkg.jointDriverTemperature[1])
135     print("jointDriverTemperature:",
robot.robot_state_pkg.jointDriverTemperature[2])
136     print("jointDriverTemperature:",
robot.robot_state_pkg.jointDriverTemperature[3])
137     print("jointDriverTemperature:",
robot.robot_state_pkg.jointDriverTemperature[4])
138     print("jointDriverTemperature:",
robot.robot_state_pkg.jointDriverTemperature[5])
139     print("year:", robot.robot_state_pkg.year)
140     print("mouth:", robot.robot_state_pkg.mouth)
141     print("day:", robot.robot_state_pkg.day)
142     print("hour:", robot.robot_state_pkg.hour)
143     print("minute:", robot.robot_state_pkg.minute)
144     print("second:", robot.robot_state_pkg.second)
145     print("millisecond:", robot.robot_state_pkg.millisecond)
146     print("softwareUpgradeState:", robot.robot_state_pkg.softwareUpgradeState)
147     print("cl_analog_output[0]:",robot.robot_state_pkg.cl_analog_output[0])
148     print("cl_analog_output[1]:",robot.robot_state_pkg.cl_analog_output[1])
149     print("tl_analog_output:",robot.robot_state_pkg.tl_analog_output)
150     print("gripperRotNum:",robot.robot_state_pkg.gripperRotNum)
151     print("gripperRotSpeed:",robot.robot_state_pkg.gripperRotSpeed)
152     print("gripperRotTorque:",robot.robot_state_pkg.gripperRotTorque)
153     print("endLuaErrCode:", robot.robot_state_pkg.endLuaErrCode)

```

