**接口说明**

北京科斯奇石油科技有限公司

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# 一 概述

1、接口介绍

软件对外提供http接口服务，采用post请求模式，json数据格式。其他系统可通过接口进行数据交互。接口从功能方面分为用户登录接口、数据读取接口与数据写入接口。

2、接口概览

（1）用户登录接口概览

|  |  |  |
| --- | --- | --- |
| **序号** | **接口** | **URL** |
| 1 | 用户登录接口 | 平台访问地址/api/userLogin |

（2）数据访问接口概览

|  |  |  |
| --- | --- | --- |
| **序号** | **接口** | **URL** |
| 1 | 组织数据接口 | 平台访问地址/api/read/getOrganizationData |
| 2 | 设备类型数据接口 | 平台访问地址/api/read/getDeviceTypeData |
| 3 | 设备信息接口 | 平台访问地址/api/read/deviceInformation |
| 4 | 设备实时统计数据接口 | 平台访问地址/api/read/realtime/statisticsData |
| 5 | 设备实时数据接口 | 平台访问地址/api/read/getDeviceRealtimeData |
| 6 | 设备历史数据接口 | 平台访问地址/api/read/getDeviceHistoryData |
| 7 | 最新功图数据接口 | 平台访问地址/api/read/getLastestFESDiagramData |
| 8 | 历史功图数据接口 | 平台访问地址/api/read/getHistoryFESDiagramData |
| 9 | 历史曲线数据接口 | 平台访问地址/api/read/getHistoryCurveData |

（3）数据写入接口概览

|  |  |  |
| --- | --- | --- |
| **序号** | **接口** | **URL** |
| 1 | 设备控制接口 | 平台访问地址/api/write/deviceControl |

# 二 接口详情

## 2.1 用户登录接口

### 2.1.1 用户登录接口

#### 2.1.1.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 用户登录接口 | | | | |
| URL | 平台访问地址/api/userLogin | | | | |
| 请求参数 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 登录状态 | int | 1:登录成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| Msg | 信息 | string | 如：登录成功；用户名不能为空；用户密码不能为空；账号或密码错误等 | |

#### 2.1.1.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456"

}

2、响应数据实例

{

"ResultStatus": 1,

"Msg": "登录成功"

}

## 2.2 数据读取接口

### 2.2.1 组织数据

#### 2.2.1.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取当前登录用户下组织菜单数据 | | | | |
| URL | 平台访问地址/api/read/getOrganizationData | | | | |
| 请求参数 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| Org组织数据 | | | | |
| Text | 组织名称 | string |  | |
| OrgId | 组织编号 | string |  | |
| Children | 子节点 |  |  | |

#### 2.2.1.2 实例

1、请求参数实例

{

"User": "user01",

"Password ": "123456"

}

2、响应数据实例

{

"ResultStatus": 1,

"Org": {

"Text": "组织根节点",

"OrgId": "1",

"Children": [

{

"Text": "油田公司",

"OrgId": "2",

"Children": [

{

"OrgId": "3",

"Text": "采油一厂"

},

{

"OrgId": "4",

"Text": "采油二厂"

}

]

}

]

}

}

### 2.2.2 设备类型数据

#### 2.2.2.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取当前登录用户下组织菜单数据 | | | | |
| URL | 平台访问地址/api/read/getDeviceTypeData | | | | |
| 请求参数 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DeviceType设备类型数据 | | | | |
| Text | 设备类型名称 | string |  | |
| DeviceTypeId | 设备类型编号 | string |  | |
| Children | 子节点 |  |  | |

#### 2.2.2.2 实例

1、请求参数实例

{

"User": "user01",

"Password ": "123456"

}

2、响应数据实例

{

"ResultStatus": 1,

"DeviceType": {

"Text": "设备类型根节点",

"DeviceTypeId": "1",

"Children": [

{

"Text": "举升类型",

"DeviceTypeId": "2",

"Children": [

{

"Text": "抽油机",

"DeviceTypeId": "3"

},

{

"Text": "螺杆泵",

"DeviceTypeId": "4"

}

]

}

]

}

}

### 2.2.3 设备信息

#### 2.2.3.1 参数说明

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 描述 | 获取设备信息 | | | | | |
| URL | 平台访问地址/api/read/deviceInformation | | | | | |
| 请求数据 | **代码** | **名称** | | **类型** | **必填** | **备注** |
| User | 用户 | | string | \* |  |
| Password | 密码 | | string | \* |  |
| DeviceList | 设备列表 | | string[] |  | 获取列表中设备信息，为空时查询用户所属组织下所有设备 |
| 响应数据 | **代码** | | **名称** | **类型** | **备注** | |
| ResultStatus | | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList数据列表 | | | | | |
| DeviceName | | 设备名称 | string |  | |
| DeviceType | | 设备类型 | string |  | |
| ApplicationScenarios | | 应用场景 | string | 油井或煤层气井 | |
| CalculateType | | 计算类型 | string | 功图计算、转速记产、无 | |
| Instance | | 采控实例 | string |  | |
| DisplayInstance | | 显示实例 | string |  | |
| AlarmInstance | | 报警实例 | string |  | |
| ReportInstance | | 报表实例 | string |  | |
| TcpType | | 下位机TCP类型 | string | TCP Server或TCP Client | |
| SignInId | | 注册包ID | string |  | |
| IpPort | | IP端口 | string |  | |
| Slave | | 设备从地址 | string |  | |
| PeakDelay | | 错峰延时(s) | string |  | |
| Status | | 状态 | string | 使能或失效 | |
| AllPath | | 组织全路径 | string |  | |
| SortNum | | 排序编号 | string |  | |

#### 2.2.3.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"DeviceList":["SRP01","SRP02"]

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"DeviceId": "1",

"OrgName": "油田公司",

"DeviceName": "SRP01",

"DeviceType": "抽油机",

"ApplicationScenarios": "油井",

"CalculateType": "功图计算",

"Instance": "SRP Acquisition Instance",

"DisplayInstance": "SRP Display Instance",

"AlarmInstance": "SRP Alarm Instance",

"ReportInstance": "SRP Report Instance",

"TcpType": "TCP Client",

"SignInId": "1010001",

"IpPort": "",

"Slave": "01",

"PeakDelay": "",

"Status": "使能",

"AllPath": "组织根节点/油田公司",

"SortNum": "1"

},

{

"DeviceId": "3",

"OrgName": "油田公司",

"DeviceName": "SRP02",

"DeviceType": "抽油机",

"ApplicationScenarios": "煤层气井",

"CalculateType": "功图计算",

"Instance": "SRP Acquisition Instance",

"DisplayInstance": "SRP Display Instance",

"AlarmInstance": "SRP Alarm Instance",

"ReportInstance": "SRP Report Instance",

"TcpType": "TCP Client",

"SignInId": "1010002",

"IpPort": "",

"Slave": "01",

"PeakDelay": "",

"Status": "使能",

"AllPath": "组织根节点/油田公司",

"SortNum": "2"

}

]

}

### 2.2.4 设备实时统计数据

#### 2.2.4.1 参数说明

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 描述 | 获取油设备实时统计数据 | | | | | | |
| URL | 平台访问地址/api/read/getRealtimeStatisticsData | | | | | | |
| 请求数据 | **代码** | **名称** | | **类型** | | **必填** | **备注** |
| User | 账号 | | string | | \* |  |
| Password | 密码 | | string | | \* |  |
| StatType | 统计类型 | | int | |  | 1-通信状态统计  2-运行状态统计  3-功图工况统计  缺省：1 |
| DeviceList | 所统计设备列表 | | string[] | |  | 为空时统计用户所属组织下所有设备 |
| 响应数据 | **代码** | | **名称** | | **类型** | **备注** | |
| ResultStatus | | 状态 | | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList统计项数据列表 | | | | | | |
| Item | | 项 | | string |  | |
| Count | | 数量 | | int |  | |

#### 2.2.4.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"StatType":1,

"DeviceList":["SRP01","SRP02"]

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"Item":'在线',

"Count": 2

},

{

"Item":'上线',

"Count": 0

},

{

"Item":'离线',

"Count": 0

}

]

}

### 2.2.5 设备实时数据

#### 2.2.5.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取某种状态或者某种工况下设备实时的数据 | | | | |
| URL | 平台访问地址/api/read/getDeviceRealtimeData | | | | |
| 请求数据 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| StatType | 统计类型 | int |  | 1-通信状态统计  2-运行状态统计  3-功图工况统计  缺省：1 |
| StatValue | 统计变量 | string |  | 为空，不按照统计类型筛选 |
| DeviceList | 查询设备列表 | string[] |  | 为空时筛选用户所属组织下所有设备 |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList数据列表 | | | | |
| DeviceName | 设备名称 | string |  | |
| DeviceType | 设备类型 | string |  | |
| AcqTime | 数据采集时间 | string |  | |
| CommStatus | 通信状态 | string | 在线、离线 | |
| CommTime | 在线时间 | float |  | |
| CommTimeEfficiency | 在线时率 | float | 小数 | |
| CommRange | 在线区间 | string |  | |
| RunStatusName | 运行状态 | string | 运行、停抽、离线 | |
| RunTime | 运行时间 | float |  | |
| RunTimeEfficiency | 运行时率 | float | 小数 | |
| RunRange | 运行区间 | string |  | |
| CommAlarmLevel | 通信报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |
| RunAlarmLevel | 运行报警级别 | int |
|  | AcquisitionDataList采集数据列表 | | | | |
|  | ItemName | 名称 | string |  | |
|  | ItemValue | 变量 | string |  | |
|  | ItemCode | 编码 | string | 预留 | |
|  | AlarmLevel | 报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |
|  | CalculateDataList计算数据列表 | | | | |
|  | ItemName | 名称 | string |  | |
|  | ItemValue | 变量 | string |  | |
|  | ItemCode | 编码 | string |  | |
|  | AlarmLevel | 报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |
|  | InputDataList录入数据列表 | | | | |
|  | ItemName | 名称 | string |  | |
|  | ItemValue | 变量 | string |  | |
|  | ItemCode | 编码 | string |  | |
|  | AlarmLevel | 报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |

#### 2.2.5.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"StatType": 1,

"StatValue":"",

"DeviceList": ["SRP01"]

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"Id": 1,

"DeviceName": "SRP01",

"DeviceType": "抽油机",

"AcqTime": "2025-02-27 14:44:52",

"CommStatus": "在线",

"CommTime": "12",

"CommTimeEfficiency": "1",

"CommRange": "00:00-12:00",

"RunStatus": "运行",

"RunTime": "12",

"RunTimeEfficiency": "1",

"RunRange": "00:00-12:00",

"CommAlarmLevel": 0,

"RunAlarmLevel": 0,

"AcquisitionDataList": [

{

"ItemName": "运行状态",

"ItemValue": "Running",

"ItemCode": "C\_CLOUMN5",

"AlarmLevel": 0

},

{

"ItemName": "有功功耗(kW·h)",

"ItemValue": "46.7",

"ItemCode": "C\_CLOUMN14",

"AlarmLevel": 0

},

{

"ItemName": "运行频率(Hz)",

"ItemValue": "60.5",

"ItemCode": "C\_CLOUMN20",

"AlarmLevel": 0

},

{

"ItemName": "功图实测点数",

"ItemValue": "200.0",

"ItemCode": "C\_CLOUMN26",

"AlarmLevel": 0

},

{

"ItemName": "冲次(1/min)",

"ItemValue": "4.16",

"ItemCode": "C\_CLOUMN28",

"AlarmLevel": 0

},

{

"ItemName": "冲程(m)",

"ItemValue": "4.21",

"ItemCode": "C\_CLOUMN29",

"AlarmLevel": 0

}

],

"CalculateDataList": [

{

"ItemName": "在线时间(h)",

"ItemValue": "0.33",

"ItemCode": "CommTime",

"AlarmLevel": 0

},

{

"ItemName": "在线时率(小数)",

"ItemValue": "0.33",

"ItemCode": "CommTimeEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "在线区间",

"ItemValue": "0.33",

"ItemCode": "CommRange",

"AlarmLevel": 0

},

{

"ItemName": "运行时间(h)",

"ItemValue": "0.33",

"ItemCode": "RunTime",

"AlarmLevel": 0

},

{

"ItemName": "运行时率(小数)",

"ItemValue": "0.33",

"ItemCode": "RunTimeEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "运行区间",

"ItemValue": "0.33",

"ItemCode": "RunRange",

"AlarmLevel": 0

},

{

"ItemName": "工况",

"ItemValue": "0.33",

"ItemCode": "ResultName",

"AlarmLevel": 0

},

{

"ItemName": "最大载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "FMax",

"AlarmLevel": 0

},

{

"ItemName": "最小载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "FMin",

"AlarmLevel": 0

},

{

"ItemName": "柱塞冲程(m)",

"ItemValue": "0.33",

"ItemCode": "PlungerStroke",

"AlarmLevel": 0

},

{

"ItemName": "柱塞有效冲程(m)",

"ItemValue": "0.33",

"ItemCode": "AvailablePlungerStroke",

"AlarmLevel": 0

},

{

"ItemName": "抽空柱塞有效冲程(m)",

"ItemValue": "0.33",

"ItemCode": "NoLiquidAvailablePlungerStroke",

"AlarmLevel": 0

},

{

"ItemName": "充满系数",

"ItemValue": "0.33",

"ItemCode": "FullnessCoefficient",

"AlarmLevel": 0

},

{

"ItemName": "抽空充满系数",

"ItemValue": "0.33",

"ItemCode": "NoLiquidFullnessCoefficient",

"AlarmLevel": 0

},

{

"ItemName": "理论上载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "UpperLoadLine",

"AlarmLevel": 0

},

{

"ItemName": "理论下载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "LowerLoadLine",

"AlarmLevel": 0

},

{

"ItemName": "理论排量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "TheoreticalProduction",

"AlarmLevel": 0

},

{

"ItemName": "瞬时产液量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "LiquidVolumetricProduction",

"AlarmLevel": 0

},

{

"ItemName": "瞬时产油量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "OilVolumetricProduction",

"AlarmLevel": 0

},

{

"ItemName": "瞬时产水量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "WaterVolumetricProduction",

"AlarmLevel": 0

},

{

"ItemName": "柱塞有效冲程计算产量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "AvailablePlungerStrokeProd\_v",

"AlarmLevel": 0

},

{

"ItemName": "泵间隙漏失量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "PumpClearanceleakProd\_v",

"AlarmLevel": 0

},

{

"ItemName": "日累计产液量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "LiquidVolumetricProduction\_l",

"AlarmLevel": 0

},

{

"ItemName": "有功功率(kW)",

"ItemValue": "0.33",

"ItemCode": "AverageWatt",

"AlarmLevel": 0

},

{

"ItemName": "光杆功率(kW)",

"ItemValue": "0.33",

"ItemCode": "PolishRodPower",

"AlarmLevel": 0

},

{

"ItemName": "水功率(kW)",

"ItemValue": "0.33",

"ItemCode": "WaterPower",

"AlarmLevel": 0

},

{

"ItemName": "地面效率",

"ItemValue": "0.33",

"ItemCode": "SurfaceSystemEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "井下效率",

"ItemValue": "0.33",

"ItemCode": "WellDownSystemEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "系统效率",

"ItemValue": "0.33",

"ItemCode": "SystemEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "功图面积",

"ItemValue": "0.33",

"ItemCode": "Area",

"AlarmLevel": 0

},

{

"ItemName": "吨液百米耗电量(kW· h/100m· t)",

"ItemValue": "0.33",

"ItemCode": "EnergyPer100mLift",

"AlarmLevel": 0

},

{

"ItemName": "抽油杆伸长量(m)",

"ItemValue": "0.33",

"ItemCode": "RodFlexLength",

"AlarmLevel": 0

},

{

"ItemName": "油管伸缩量(m)",

"ItemValue": "0.33",

"ItemCode": "TubingFlexLength",

"AlarmLevel": 0

},

{

"ItemName": "惯性载荷增量(m)",

"ItemValue": "0.33",

"ItemCode": "InertiaLength",

"AlarmLevel": 0

},

{

"ItemName": "冲程损失系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff1",

"AlarmLevel": 0

},

{

"ItemName": "充满系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff2",

"AlarmLevel": 0

},

{

"ItemName": "间隙漏失系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff3",

"AlarmLevel": 0

},

{

"ItemName": "液体收缩系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff4",

"AlarmLevel": 0

},

{

"ItemName": "总泵效",

"ItemValue": "0.33",

"ItemCode": "PumpEff",

"AlarmLevel": 0

},

{

"ItemName": "泵入口压力(MPa)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeP",

"AlarmLevel": 0

},

{

"ItemName": "泵入口温度(℃)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeT",

"AlarmLevel": 0

},

{

"ItemName": "泵入口就地气液比(m^3/m^3)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeGOL",

"AlarmLevel": 0

},

{

"ItemName": "泵入口粘度(mPa·s)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeVisl",

"AlarmLevel": 0

},

{

"ItemName": "泵入口原油体积系数",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeBo",

"AlarmLevel": 0

},

{

"ItemName": "泵出口压力(MPa)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletP",

"AlarmLevel": 0

},

{

"ItemName": "泵出口温度(℃)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletT",

"AlarmLevel": 0

},

{

"ItemName": "泵出口就地气液比(m^3/m^3)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletGOL",

"AlarmLevel": 0

},

{

"ItemName": "泵出口粘度(mPa·s)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletVisl",

"AlarmLevel": 0

},

{

"ItemName": "泵出口原油体积系数",

"ItemValue": "0.33",

"ItemCode": "PumpOutletBo",

"AlarmLevel": 0

},

{

"ItemName": "上冲程最大电流(A)",

"ItemValue": "0.33",

"ItemCode": "UpStrokeIMax",

"AlarmLevel": 0

},

{

"ItemName": "下冲程最大电流(A)",

"ItemValue": "0.33",

"ItemCode": "DownStrokeIMax",

"AlarmLevel": 0

},

{

"ItemName": "上冲程最大功率(kW)",

"ItemValue": "0.33",

"ItemCode": "UpStrokeWattMax",

"AlarmLevel": 0

},

{

"ItemName": "下冲程最大功率(kW)",

"ItemValue": "0.33",

"ItemCode": "DownStrokeWattMax",

"AlarmLevel": 0

},

{

"ItemName": "电流平衡度(%)",

"ItemValue": "0.33",

"ItemCode": "IDegreeBalance",

"AlarmLevel": 0

},

{

"ItemName": "功率平衡度(%)",

"ItemValue": "0.33",

"ItemCode": "WattDegreeBalance",

"AlarmLevel": 0

},

{

"ItemName": "移动距离(m)",

"ItemValue": "0.33",

"ItemCode": "DeltaRadius",

"AlarmLevel": 0

},

{

"ItemName": "液面校正差值(MPa)",

"ItemValue": "0.33",

"ItemCode": "LevelDifferenceValue",

"AlarmLevel": 0

},

{

"ItemName": "反演动液面(m)",

"ItemValue": "0.33",

"ItemCode": "CalcProducingfluidLevel",

"AlarmLevel": 0

},

{

"ItemName": "Today KWattH(kW·h)",

"ItemValue": "0",

"ItemCode": "C\_CLOUMN14\_TOTAL",

"AlarmLevel": 0

}

],

"InputDataList": [

{

"ItemName": "原油密度(g/cm^3)",

"ItemValue": "0.87",

"ItemCode": "CrudeOilDensity",

"AlarmLevel": 0

},

{

"ItemName": "水密度(g/cm^3)",

"ItemValue": "1.0",

"ItemCode": "WaterDensity",

"AlarmLevel": 0

},

{

"ItemName": "天然气相对密度",

"ItemValue": "0.63",

"ItemCode": "NaturalGasRelativeDensity",

"AlarmLevel": 0

},

{

"ItemName": "饱和压力(MPa)",

"ItemValue": "9.7",

"ItemCode": "SaturationPressure",

"AlarmLevel": 0

},

{

"ItemName": "油层中部深度(m)",

"ItemValue": "1657.0",

"ItemCode": "ReservoirDepth",

"AlarmLevel": 0

},

{

"ItemName": "油层中部温度(℃)",

"ItemValue": "69.0",

"ItemCode": "ReservoirTemperature",

"AlarmLevel": 0

},

{

"ItemName": "油压(MPa)",

"ItemValue": "0.64",

"ItemCode": "TubingPressure",

"AlarmLevel": 0

},

{

"ItemName": "套压(MPa)",

"ItemValue": "0.7",

"ItemCode": "CasingPressure",

"AlarmLevel": 0

},

{

"ItemName": "井口温度(℃)",

"ItemValue": "26.0",

"ItemCode": "WellHeadTemperature",

"AlarmLevel": 0

},

{

"ItemName": "含水率(%)",

"ItemValue": "97.02",

"ItemCode": "WaterCut",

"AlarmLevel": 0

},

{

"ItemName": "生产气油比(m^3/t)",

"ItemValue": "75.0",

"ItemCode": "ProductionGasOilRatio",

"AlarmLevel": 0

},

{

"ItemName": "动液面(m)",

"ItemValue": "190.0",

"ItemCode": "ProducingfluidLevel",

"AlarmLevel": 0

},

{

"ItemName": "泵挂(m)",

"ItemValue": "1113.72",

"ItemCode": "PumpSettingDepth",

"AlarmLevel": 0

},

{

"ItemName": "泵径(mm)",

"ItemValue": "57.0",

"ItemCode": "PumpBoreDiameter",

"AlarmLevel": 0

},

{

"ItemName": "反演液面校正值(MPa)",

"ItemValue": "0.0",

"ItemCode": "LevelCorrectValue",

"AlarmLevel": 0

}

]

}

]

}

### 2.2.6 设备历史数据

#### 2.2.6.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取某种状态或者某种工况下设备历史数据 | | | | |
| URL | 平台访问地址/api/read/getDeviceHistoryData | | | | |
| 请求数据 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| DeviceName | 设备名称 | string | \* |  |
|  | Limit | 记录数 | int |  | 获取最新历史记录数，查询以此参数为准，为0时，以起始时间和结束时间为准 |
|  | StartDate | 起始时间 | string |  | Limit为0时生效  格式：yyyy-MM-dd HH:mm:ss |
|  | EndDate | 结束时间 | string |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList数据列表 | | | | |
| DeviceName | 设备名称 | string |  | |
| AcqTime | 数据采集时间 | string | 格式：yyyy-MM-dd HH:mm:ss | |
| CommStatus | 通信状态 | string | 在线、离线 | |
| CommTime | 在线时间 | float |  | |
| CommTimeEfficiency | 在线时率 | float | 小数 | |
| CommRange | 在线区间 | string |  | |
| RunStatusName | 运行状态 | string | 运行、停抽、离线、无数据 | |
| RunTime | 运行时间 | float |  | |
| RunTimeEfficiency | 运行时率 | float | 小数 | |
| RunRange | 运行区间 | string |  | |
| CommAlarmLevel | 通信报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |
| RunAlarmLevel | 运行报警级别 | int |
|  | AcquisitionDataList采集数据列表 | | | | |
|  | ItemName | 名称 | string |  | |
|  | ItemValue | 变量 | string |  | |
|  | ItemCode | 编码 | string | 预留 | |
|  | AlarmLevel | 报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |
|  | CalculateDataList计算数据列表 | | | | |
|  | ItemName | 名称 | string |  | |
|  | ItemValue | 变量 | string |  | |
|  | ItemCode | 编码 | string |  | |
|  | AlarmLevel | 报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |
|  | InputDataList录入数据列表 | | | | |
|  | ItemName | 名称 | string |  | |
|  | ItemValue | 变量 | string |  | |
|  | ItemCode | 编码 | string |  | |
|  | AlarmLevel | 报警级别 | int | 0-正常；100-一级报警；  200-二级报警；300-三级报警 | |

#### 2.2.6.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"DeviceName": "SRP01",

"Limit":100,

"StartDate": "2025-02-27 00:00:00",

"EndDate": "2025-02-28 00:00:00"

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"Id": 1,

"DeviceName": "SRP01",

"DeviceType": "抽油机",

"AcqTime": "2025-02-27 14:44:52",

"CommStatus": "在线",

"CommTime": "12",

"CommTimeEfficiency": "1",

"CommRange": "00:00-12:00",

"RunStatus": "运行",

"RunTime": "12",

"RunTimeEfficiency": "1",

"RunRange": "00:00-12:00",

"CommAlarmLevel": 0,

"RunAlarmLevel": 0,

"AcquisitionDataList": [

{

"ItemName": "运行状态",

"ItemValue": "Running",

"ItemCode": "C\_CLOUMN5",

"AlarmLevel": 0

},

{

"ItemName": "有功功耗(kW·h)",

"ItemValue": "46.7",

"ItemCode": "C\_CLOUMN14",

"AlarmLevel": 0

},

{

"ItemName": "运行频率(Hz)",

"ItemValue": "60.5",

"ItemCode": "C\_CLOUMN20",

"AlarmLevel": 0

},

{

"ItemName": "功图实测点数",

"ItemValue": "200.0",

"ItemCode": "C\_CLOUMN26",

"AlarmLevel": 0

},

{

"ItemName": "冲次(1/min)",

"ItemValue": "4.16",

"ItemCode": "C\_CLOUMN28",

"AlarmLevel": 0

},

{

"ItemName": "冲程(m)",

"ItemValue": "4.21",

"ItemCode": "C\_CLOUMN29",

"AlarmLevel": 0

}

],

"CalculateDataList": [

{

"ItemName": "在线时间(h)",

"ItemValue": "0.33",

"ItemCode": "CommTime",

"AlarmLevel": 0

},

{

"ItemName": "在线时率(小数)",

"ItemValue": "0.33",

"ItemCode": "CommTimeEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "在线区间",

"ItemValue": "0.33",

"ItemCode": "CommRange",

"AlarmLevel": 0

},

{

"ItemName": "运行时间(h)",

"ItemValue": "0.33",

"ItemCode": "RunTime",

"AlarmLevel": 0

},

{

"ItemName": "运行时率(小数)",

"ItemValue": "0.33",

"ItemCode": "RunTimeEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "运行区间",

"ItemValue": "0.33",

"ItemCode": "RunRange",

"AlarmLevel": 0

},

{

"ItemName": "工况",

"ItemValue": "0.33",

"ItemCode": "ResultName",

"AlarmLevel": 0

},

{

"ItemName": "最大载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "FMax",

"AlarmLevel": 0

},

{

"ItemName": "最小载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "FMin",

"AlarmLevel": 0

},

{

"ItemName": "柱塞冲程(m)",

"ItemValue": "0.33",

"ItemCode": "PlungerStroke",

"AlarmLevel": 0

},

{

"ItemName": "柱塞有效冲程(m)",

"ItemValue": "0.33",

"ItemCode": "AvailablePlungerStroke",

"AlarmLevel": 0

},

{

"ItemName": "抽空柱塞有效冲程(m)",

"ItemValue": "0.33",

"ItemCode": "NoLiquidAvailablePlungerStroke",

"AlarmLevel": 0

},

{

"ItemName": "充满系数",

"ItemValue": "0.33",

"ItemCode": "FullnessCoefficient",

"AlarmLevel": 0

},

{

"ItemName": "抽空充满系数",

"ItemValue": "0.33",

"ItemCode": "NoLiquidFullnessCoefficient",

"AlarmLevel": 0

},

{

"ItemName": "理论上载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "UpperLoadLine",

"AlarmLevel": 0

},

{

"ItemName": "理论下载荷(kN)",

"ItemValue": "0.33",

"ItemCode": "LowerLoadLine",

"AlarmLevel": 0

},

{

"ItemName": "理论排量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "TheoreticalProduction",

"AlarmLevel": 0

},

{

"ItemName": "瞬时产液量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "LiquidVolumetricProduction",

"AlarmLevel": 0

},

{

"ItemName": "瞬时产油量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "OilVolumetricProduction",

"AlarmLevel": 0

},

{

"ItemName": "瞬时产水量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "WaterVolumetricProduction",

"AlarmLevel": 0

},

{

"ItemName": "柱塞有效冲程计算产量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "AvailablePlungerStrokeProd\_v",

"AlarmLevel": 0

},

{

"ItemName": "泵间隙漏失量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "PumpClearanceleakProd\_v",

"AlarmLevel": 0

},

{

"ItemName": "日累计产液量(m^3/d)",

"ItemValue": "0.33",

"ItemCode": "LiquidVolumetricProduction\_l",

"AlarmLevel": 0

},

{

"ItemName": "有功功率(kW)",

"ItemValue": "0.33",

"ItemCode": "AverageWatt",

"AlarmLevel": 0

},

{

"ItemName": "光杆功率(kW)",

"ItemValue": "0.33",

"ItemCode": "PolishRodPower",

"AlarmLevel": 0

},

{

"ItemName": "水功率(kW)",

"ItemValue": "0.33",

"ItemCode": "WaterPower",

"AlarmLevel": 0

},

{

"ItemName": "地面效率",

"ItemValue": "0.33",

"ItemCode": "SurfaceSystemEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "井下效率",

"ItemValue": "0.33",

"ItemCode": "WellDownSystemEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "系统效率",

"ItemValue": "0.33",

"ItemCode": "SystemEfficiency",

"AlarmLevel": 0

},

{

"ItemName": "功图面积",

"ItemValue": "0.33",

"ItemCode": "Area",

"AlarmLevel": 0

},

{

"ItemName": "吨液百米耗电量(kW· h/100m· t)",

"ItemValue": "0.33",

"ItemCode": "EnergyPer100mLift",

"AlarmLevel": 0

},

{

"ItemName": "抽油杆伸长量(m)",

"ItemValue": "0.33",

"ItemCode": "RodFlexLength",

"AlarmLevel": 0

},

{

"ItemName": "油管伸缩量(m)",

"ItemValue": "0.33",

"ItemCode": "TubingFlexLength",

"AlarmLevel": 0

},

{

"ItemName": "惯性载荷增量(m)",

"ItemValue": "0.33",

"ItemCode": "InertiaLength",

"AlarmLevel": 0

},

{

"ItemName": "冲程损失系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff1",

"AlarmLevel": 0

},

{

"ItemName": "充满系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff2",

"AlarmLevel": 0

},

{

"ItemName": "间隙漏失系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff3",

"AlarmLevel": 0

},

{

"ItemName": "液体收缩系数",

"ItemValue": "0.33",

"ItemCode": "PumpEff4",

"AlarmLevel": 0

},

{

"ItemName": "总泵效",

"ItemValue": "0.33",

"ItemCode": "PumpEff",

"AlarmLevel": 0

},

{

"ItemName": "泵入口压力(MPa)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeP",

"AlarmLevel": 0

},

{

"ItemName": "泵入口温度(℃)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeT",

"AlarmLevel": 0

},

{

"ItemName": "泵入口就地气液比(m^3/m^3)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeGOL",

"AlarmLevel": 0

},

{

"ItemName": "泵入口粘度(mPa·s)",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeVisl",

"AlarmLevel": 0

},

{

"ItemName": "泵入口原油体积系数",

"ItemValue": "0.33",

"ItemCode": "PumpIntakeBo",

"AlarmLevel": 0

},

{

"ItemName": "泵出口压力(MPa)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletP",

"AlarmLevel": 0

},

{

"ItemName": "泵出口温度(℃)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletT",

"AlarmLevel": 0

},

{

"ItemName": "泵出口就地气液比(m^3/m^3)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletGOL",

"AlarmLevel": 0

},

{

"ItemName": "泵出口粘度(mPa·s)",

"ItemValue": "0.33",

"ItemCode": "PumpOutletVisl",

"AlarmLevel": 0

},

{

"ItemName": "泵出口原油体积系数",

"ItemValue": "0.33",

"ItemCode": "PumpOutletBo",

"AlarmLevel": 0

},

{

"ItemName": "上冲程最大电流(A)",

"ItemValue": "0.33",

"ItemCode": "UpStrokeIMax",

"AlarmLevel": 0

},

{

"ItemName": "下冲程最大电流(A)",

"ItemValue": "0.33",

"ItemCode": "DownStrokeIMax",

"AlarmLevel": 0

},

{

"ItemName": "上冲程最大功率(kW)",

"ItemValue": "0.33",

"ItemCode": "UpStrokeWattMax",

"AlarmLevel": 0

},

{

"ItemName": "下冲程最大功率(kW)",

"ItemValue": "0.33",

"ItemCode": "DownStrokeWattMax",

"AlarmLevel": 0

},

{

"ItemName": "电流平衡度(%)",

"ItemValue": "0.33",

"ItemCode": "IDegreeBalance",

"AlarmLevel": 0

},

{

"ItemName": "功率平衡度(%)",

"ItemValue": "0.33",

"ItemCode": "WattDegreeBalance",

"AlarmLevel": 0

},

{

"ItemName": "移动距离(m)",

"ItemValue": "0.33",

"ItemCode": "DeltaRadius",

"AlarmLevel": 0

},

{

"ItemName": "液面校正差值(MPa)",

"ItemValue": "0.33",

"ItemCode": "LevelDifferenceValue",

"AlarmLevel": 0

},

{

"ItemName": "反演动液面(m)",

"ItemValue": "0.33",

"ItemCode": "CalcProducingfluidLevel",

"AlarmLevel": 0

},

{

"ItemName": "Today KWattH(kW·h)",

"ItemValue": "0",

"ItemCode": "C\_CLOUMN14\_TOTAL",

"AlarmLevel": 0

}

],

"InputDataList": [

{

"ItemName": "原油密度(g/cm^3)",

"ItemValue": "0.87",

"ItemCode": "CrudeOilDensity",

"AlarmLevel": 0

},

{

"ItemName": "水密度(g/cm^3)",

"ItemValue": "1.0",

"ItemCode": "WaterDensity",

"AlarmLevel": 0

},

{

"ItemName": "天然气相对密度",

"ItemValue": "0.63",

"ItemCode": "NaturalGasRelativeDensity",

"AlarmLevel": 0

},

{

"ItemName": "饱和压力(MPa)",

"ItemValue": "9.7",

"ItemCode": "SaturationPressure",

"AlarmLevel": 0

},

{

"ItemName": "油层中部深度(m)",

"ItemValue": "1657.0",

"ItemCode": "ReservoirDepth",

"AlarmLevel": 0

},

{

"ItemName": "油层中部温度(℃)",

"ItemValue": "69.0",

"ItemCode": "ReservoirTemperature",

"AlarmLevel": 0

},

{

"ItemName": "油压(MPa)",

"ItemValue": "0.64",

"ItemCode": "TubingPressure",

"AlarmLevel": 0

},

{

"ItemName": "套压(MPa)",

"ItemValue": "0.7",

"ItemCode": "CasingPressure",

"AlarmLevel": 0

},

{

"ItemName": "井口温度(℃)",

"ItemValue": "26.0",

"ItemCode": "WellHeadTemperature",

"AlarmLevel": 0

},

{

"ItemName": "含水率(%)",

"ItemValue": "97.02",

"ItemCode": "WaterCut",

"AlarmLevel": 0

},

{

"ItemName": "生产气油比(m^3/t)",

"ItemValue": "75.0",

"ItemCode": "ProductionGasOilRatio",

"AlarmLevel": 0

},

{

"ItemName": "动液面(m)",

"ItemValue": "190.0",

"ItemCode": "ProducingfluidLevel",

"AlarmLevel": 0

},

{

"ItemName": "泵挂(m)",

"ItemValue": "1113.72",

"ItemCode": "PumpSettingDepth",

"AlarmLevel": 0

},

{

"ItemName": "泵径(mm)",

"ItemValue": "57.0",

"ItemCode": "PumpBoreDiameter",

"AlarmLevel": 0

},

{

"ItemName": "反演液面校正值(MPa)",

"ItemValue": "0.0",

"ItemCode": "LevelCorrectValue",

"AlarmLevel": 0

}

]

}

]

}

### 2.2.7 最新功图数据

#### 2.2.7.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取某设备最新功图数据 | | | | |
| URL | 平台访问地址/api/read/getLastestFESDiagramData | | | | |
| 请求数据 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| DeviceName | 设备名称 | string | \* |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList数据列表 | | | | |
| Id | 记录编号 | int |  | |
| DeviceName | 设备名称 | string |  | |
| AcqTime | 功图采集时间 | string |  | |
| UpperLoadLine | 理论上载荷 | float |  | |
| LowerLoadLine | 理论下载荷 | float |  | |
| Fmax | 最大载荷 | float |  | |
| Fmin | 最小载荷 | float |  | |
| Stroke | 冲程 | float |  | |
| SPM | 冲次 | float |  | |
| FullnessCoefficient | 充满系数 | 小数 |  | |
| NoLiquidFullnessCoefficient | 抽空充满系数 | 小数 |  | |
| LiquidVolumetricProduction | 产液量 | m^3/d |  | |
| OilVolumetricProduction | 产油量 | m^3/d |  | |
| WaterVolumetricProduction | 产水量 | m^3/d |  | |
| LiquidWeightProduction | 产液量 | t/d |  | |
| OilWeightProduction | 产油量 | t/d |  | |
| WaterWeightProduction | 产水量 | t/d |  | |
| TheoreticalProduction | 理论排列 | m^3/d |  | |
| PumpEff | 泵小 | 小数 |  | |
| ResultCode | 工况代码 | string |  | |
| ResultName | 工况名称 | string |  | |
| OptimizationSuggestion | 优化建议 | string |  | |
| Submergence | 沉没度 | m |  | |
| DownStrokeIMax | 上冲程最大电流 | A |  | |
| UpStrokeIMax | 下冲程最大电流 | A |  | |
| IDegreeBalance | 电流平衡度 | % |  | |
| DownStrokeWattMax | 上冲程最大功率 | kW |  | |
| UpStrokeWattMax | 下冲程最大功率 | kW |  | |
| WattDegreeBalance | 电流平衡度 | % |  | |
| DeltaRadius | 移动距离 | m |  | |
| WellDownSystemEfficiency | 井下系统效率 | 小数 |  | |
| SurfaceSystemEfficiency | 地面系统效率 | 小数 |  | |
| SystemEfficiency | 系统效率 | 小数 |  | |
| EnergyPer100mLift | 吨液百米耗电量 | kW·h/100m·t |  | |
| PointCount | 功图点数 | int |  | |
|  | S | 位移 | float[] | 功图数据-位移值 | |
|  | F | 载荷 | float[] | 位移对应载荷值 | |
|  | Watt | 有功功率 | float[] | 位移对应功率值 | |
|  | A | 电流 | float[] | 位移对应电流值 | |

#### 2.2.7.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"DeviceName": "SRP01"

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"Id": "1",

"DeviceName": "SRP01",

"AcqTime": "2025-02-27 10:32:34",

"UpperLoadLine": "57.89",

"LowerLoadLine": "27.29",

"Fmax": "58.17",

"Fmin": "20.35",

"Stroke": "4.21",

"SPM": "4.16",

"FullnessCoefficient": "1",

"NoLiquidFullnessCoefficient": "0.0176",

"LiquidVolumetricProduction": "55.78",

"OilVolumetricProduction": "1.66",

"WaterVolumetricProduction": "54.12",

"LiquidWeightProduction": "55.56",

"OilWeightProduction": "1.45",

"WaterWeightProduction": "54.12",

"TheoreticalProduction": "64.35",

"PumpEff": "0.867",

"ResultCode": "1202",

"ResultName": "正常",

"OptimizationSuggestion": "",

"Submergence": "923.72",

"DownStrokeIMax": "4.17",

"UpStrokeIMax": "4.57",

"IDegreeBalance": "91.25",

"DownStrokeWattMax": "11.34",

"UpStrokeWattMax": "11.46",

"WattDegreeBalance": "98.95",

"DeltaRadius": "0.01",

"WellDownSystemEfficiency": "0.165",

"SurfaceSystemEfficiency": "0.647",

"SystemEfficiency": "0.107",

"EnergyPer100mLift": "2.56",

"PointCount": "200",

"S": [0.0,0.0,0.0,0.01,0.01,0.03,0.04,0.05,0.07,0.09,0.12,0.14,0.17,0.2,0.23,0.27,0.31,0.34,0.39,0.43,0.47,0.52,0.56,0.61,0.66,0.71,0.77,0.83,0.88,0.94,1.0,1.06,1.12,1.18,1.24,1.3,1.36,1.43,1.49,1.55,1.62,1.68,1.75,1.81,1.87,1.94,2.0,2.06,2.12,2.18,2.24,2.3,2.36,2.42,2.48,2.54,2.6,2.65,2.71,2.76,2.81,2.87,2.92,2.97,3.02,3.07,3.11,3.16,3.21,3.25,3.3,3.34,3.38,3.43,3.47,3.51,3.54,3.58,3.62,3.66,3.69,3.73,3.76,3.79,3.83,3.86,3.89,3.91,3.94,3.97,3.99,4.02,4.04,4.06,4.09,4.1,4.12,4.14,4.15,4.17,4.18,4.19,4.2,4.2,4.21,4.21,4.21,4.21,4.21,4.2,4.19,4.18,4.17,4.15,4.13,4.11,4.09,4.06,4.03,4.0,3.97,3.93,3.9,3.86,3.81,3.77,3.73,3.68,3.63,3.58,3.53,3.47,3.41,3.35,3.29,3.23,3.17,3.11,3.05,2.98,2.92,2.86,2.8,2.73,2.66,2.6,2.53,2.46,2.34,2.33,2.26,2.2,2.13,2.06,2.0,1.93,1.86,1.8,1.73,1.67,1.6,1.54,1.47,1.41,1.35,1.29,1.22,1.16,1.1,1.04,0.99,0.93,0.87,0.82,0.77,0.71,0.66,0.61,0.56,0.52,0.47,0.43,0.39,0.35,0.31,0.27,0.24,0.21,0.18,0.15,0.12,0.1,0.08,0.06,0.04,0.03,0.02,0.01,0.0,0.0],

"F": [29.13,29.46,30.58,31.46,31.92,32.48,33.06,33.68,34.41,36.11,37.45,38.52,39.99,40.93,42.37,44.56,46.7,48.82,51.0,53.32,55.17,56.93,58.17,57.69,56.52,55.21,54.0,52.62,51.81,51.61,51.95,52.61,53.22,53.7,54.29,54.47,54.32,53.99,53.43,52.65,51.84,51.27,51.03,50.96,50.96,51.02,51.18,51.39,51.59,51.65,51.64,51.57,51.44,51.25,51.01,50.75,50.67,50.59,50.55,50.63,50.9,51.16,51.3,51.38,51.52,51.61,51.5,51.38,51.28,51.18,51.03,50.94,50.91,50.94,50.95,50.98,51.07,51.24,51.28,51.26,51.21,51.17,51.11,50.97,50.69,50.64,50.64,50.64,50.66,50.72,50.8,50.86,50.86,50.84,50.81,50.76,50.63,50.55,50.52,50.51,50.51,50.53,50.57,50.67,50.77,50.78,50.71,49.79,48.52,47.32,46.96,46.28,45.34,44.26,43.67,43.16,42.46,41.21,39.92,38.239998,36.12,34.45,32.7,30.65,28.09,25.36,22.66,20.58,20.35,21.53,23.36,25.35,27.12,28.52,29.24,28.77,27.5,26.01,24.64,23.48,22.83,22.8,23.48,24.28,25.08,25.79,26.3,26.36,26.03,25.43,24.98,24.59,24.33,24.37,24.4,24.59,24.92,25.14,25.4,25.64,25.78,25.74,25.69,25.65,25.65,25.59,25.55,25.57,25.65,25.79,25.96,26.14,26.3,26.4,26.45,26.53,26.6,26.65,26.72,26.75,26.84,27.0,27.22,27.35,27.56,27.85,27.97,28.1,28.23,28.31,28.39,28.43,28.47,28.58,28.66,28.76,28.89,29.03,29.19,29.37],

"Watt": [10.6,10.52,10.52,10.66,10.51,10.51,10.7,10.7,10.75,10.7,10.75,10.76,11.0,11.01,11.0,11.02,11.19,11.24,11.26,11.22,11.25,11.25,11.45,11.44,11.37,11.37,11.29,11.29,11.46,11.46,11.35,11.35,11.35,11.42,11.42,11.42,11.28,11.21,11.23,11.23,11.09,11.09,11.09,11.09,11.08,11.08,10.94,10.94,10.96,10.96,10.96,10.84,10.84,10.73,10.77,10.86,10.74,10.74,10.74,10.67,10.67,10.67,10.71,10.71,10.59,10.59,10.75,10.75,10.75,10.62,10.62,10.62,10.72,10.61,10.61,10.61,10.77,10.77,10.64,10.64,10.71,10.71,10.71,10.71,10.69,10.77,10.82,10.82,10.79,10.79,10.79,10.79,10.86,10.86,10.77,10.77,10.81,10.88,10.88,10.88,10.72,10.72,10.72,10.85,10.85,10.65,10.65,10.77,10.77,10.77,10.58,10.59,10.73,10.73,10.73,10.73,10.54,10.54,10.67,10.67,10.67,10.51,10.51,10.63,10.59,10.55,10.51,10.58,10.72,10.77,10.77,10.79,10.92,11.04,11.21,11.24,11.06,11.04,11.13,11.13,11.16,11.16,11.14,11.14,11.27,11.27,11.27,11.07,11.07,11.34,11.34,11.34,11.17,11.17,11.25,11.25,11.15,11.15,11.15,11.08,11.14,11.14,11.14,11.03,11.0,11.0,11.0,10.9,10.9,10.9,10.89,10.89,10.85,10.85,10.85,10.8,10.8,10.8,10.8,10.63,10.63,10.75,10.75,10.75,10.57,10.57,10.57,10.66,10.66,10.66,10.47,10.55,10.63,10.63,10.53,10.53,10.53,10.53,10.53,10.6],

"A": [1.16,1.06,1.06,1.28,1.76,1.76,2.07,2.07,2.62,2.76,2.86,2.92,3.19,3.38,3.51,3.64,3.85,3.88,4.03,4.12,4.25,4.28,4.34,4.41,4.45,4.45,4.53,4.53,4.53,4.53,4.57,4.57,4.57,4.43,4.43,4.43,4.38,4.27,4.18,4.18,3.91,3.91,3.91,3.91,3.78,3.78,3.47,3.47,3.36,3.36,3.36,3.11,3.11,2.89,2.88,2.91,2.72,2.72,2.72,2.52,2.52,2.52,2.53,2.53,2.35,2.35,2.35,2.35,2.35,2.34,2.32,2.32,2.35,2.38,2.38,2.38,2.41,2.41,2.51,2.51,2.64,2.64,2.64,2.64,2.7,2.8,2.81,2.81,2.86,2.86,2.86,2.86,2.98,2.98,3.0,3.0,3.05,3.04,3.04,3.04,2.99,2.99,2.99,2.86,2.86,2.7,2.7,2.57,2.57,2.57,2.35,2.31,2.3,2.3,2.3,2.3,2.09,2.09,1.89,1.89,1.89,1.64,1.57,1.49,1.53,1.57,1.69,1.81,2.13,2.28,2.28,2.65,3.13,3.32,3.63,3.79,3.95,3.94,3.9,3.9,3.95,3.95,4.01,4.01,4.14,4.14,4.14,4.06,4.06,4.14,4.14,4.14,4.17,4.17,4.07,4.07,4.1,4.1,4.1,3.91,3.87,3.87,3.87,3.78,3.58,3.58,3.58,3.44,3.44,3.44,3.33,3.33,3.1,3.1,3.1,2.84,2.77,2.77,2.77,2.49,2.49,2.32,2.32,2.32,2.12,2.12,2.12,1.92,1.92,1.92,1.7,1.65,1.58,1.58,1.42,1.42,1.33,1.33,1.33,1.16]

}

]

}

### 2.2.8 历史功图数据

#### 2.2.8.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取某设备最新功图数据 | | | | |
| URL | 平台访问地址/api/read/getHistoryFESDiagramData | | | | |
| 请求数据 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| DeviceName | 设备名称 | string | \* |  |
| Limit | 记录数 | int |  | 获取最新历史记录数，查询以此参数为准，为0时，以起始时间和结束时间为准 |
| StartDate | 起始时间 | string |  | Limit为0时生效  格式：yyyy-MM-dd HH:mm:ss |
| EndDate | 结束时间 | string |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList数据列表 | | | | |
| Id | 记录编号 | int |  | |
| DeviceName | 设备名称 | string |  | |
| AcqTime | 功图采集时间 | string |  | |
| UpperLoadLine | 理论上载荷 | float |  | |
| LowerLoadLine | 理论下载荷 | float |  | |
| Fmax | 最大载荷 | float |  | |
| Fmin | 最小载荷 | float |  | |
| Stroke | 冲程 | float |  | |
| SPM | 冲次 | float |  | |
| FullnessCoefficient | 充满系数 | 小数 |  | |
| NoLiquidFullnessCoefficient | 抽空充满系数 | 小数 |  | |
| LiquidVolumetricProduction | 产液量 | m^3/d |  | |
| OilVolumetricProduction | 产油量 | m^3/d |  | |
| WaterVolumetricProduction | 产水量 | m^3/d |  | |
| LiquidWeightProduction | 产液量 | t/d |  | |
| OilWeightProduction | 产油量 | t/d |  | |
| WaterWeightProduction | 产水量 | t/d |  | |
| TheoreticalProduction | 理论排列 | m^3/d |  | |
| PumpEff | 泵小 | 小数 |  | |
| ResultCode | 工况代码 | string |  | |
| ResultName | 工况名称 | string |  | |
| OptimizationSuggestion | 优化建议 | string |  | |
| Submergence | 沉没度 | m |  | |
| DownStrokeIMax | 上冲程最大电流 | A |  | |
| UpStrokeIMax | 下冲程最大电流 | A |  | |
| IDegreeBalance | 电流平衡度 | % |  | |
| DownStrokeWattMax | 上冲程最大功率 | kW |  | |
| UpStrokeWattMax | 下冲程最大功率 | kW |  | |
| WattDegreeBalance | 电流平衡度 | % |  | |
| DeltaRadius | 移动距离 | m |  | |
| WellDownSystemEfficiency | 井下系统效率 | 小数 |  | |
| SurfaceSystemEfficiency | 地面系统效率 | 小数 |  | |
| SystemEfficiency | 系统效率 | 小数 |  | |
| EnergyPer100mLift | 吨液百米耗电量 | kW·h/100m·t |  | |
| PointCount | 功图点数 | int |  | |
|  | S | 位移 | float[] | 功图数据-位移值 | |
|  | F | 载荷 | float[] | 位移对应载荷值 | |
|  | Watt | 有功功率 | float[] | 位移对应功率值 | |
|  | A | 电流 | float[] | 位移对应电流值 | |

#### 2.2.8.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"DeviceName": "SRP01",

"Limit":100,

"StartDate": "2025-02-27 00:00:00",

"EndDate": "2025-02-28 00:00:00"

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"Id": "4230",

"DeviceName": "SRP01",

"AcqTime": "2025-02-27 10:59:34",

"UpperLoadLine": "57.89",

"LowerLoadLine": "27.29",

"Fmax": "58.17",

"Fmin": "20.35",

"Stroke": "4.21",

"SPM": "4.16",

"FullnessCoefficient": "1",

"NoLiquidFullnessCoefficient": "0.0176",

"LiquidVolumetricProduction": "55.78",

"OilVolumetricProduction": "1.66",

"WaterVolumetricProduction": "54.12",

"LiquidWeightProduction": "55.56",

"OilWeightProduction": "1.45",

"WaterWeightProduction": "54.12",

"TheoreticalProduction": "64.35",

"PumpEff": "0.867",

"ResultCode": "1202",

"ResultName": "正常",

"OptimizationSuggestion": "",

"Submergence": "923.72",

"DownStrokeIMax": "4.17",

"UpStrokeIMax": "4.57",

"IDegreeBalance": "91.25",

"DownStrokeWattMax": "11.34",

"UpStrokeWattMax": "11.46",

"WattDegreeBalance": "98.95",

"DeltaRadius": "0.01",

"WellDownSystemEfficiency": "0.165",

"SurfaceSystemEfficiency": "0.647",

"SystemEfficiency": "0.107",

"EnergyPer100mLift": "2.56",

"PointCount": "200",

"S": [0.0,0.0,0.0,0.01,0.01,0.03,0.04,0.05,0.07,0.09,0.12,0.14,0.17,0.2,0.23,0.27,0.31,0.34,0.39,0.43,0.47,0.52,0.56,0.61,0.66,0.71,0.77,0.83,0.88,0.94,1.0,1.06,1.12,1.18,1.24,1.3,1.36,1.43,1.49,1.55,1.62,1.68,1.75,1.81,1.87,1.94,2.0,2.06,2.12,2.18,2.24,2.3,2.36,2.42,2.48,2.54,2.6,2.65,2.71,2.76,2.81,2.87,2.92,2.97,3.02,3.07,3.11,3.16,3.21,3.25,3.3,3.34,3.38,3.43,3.47,3.51,3.54,3.58,3.62,3.66,3.69,3.73,3.76,3.79,3.83,3.86,3.89,3.91,3.94,3.97,3.99,4.02,4.04,4.06,4.09,4.1,4.12,4.14,4.15,4.17,4.18,4.19,4.2,4.2,4.21,4.21,4.21,4.21,4.21,4.2,4.19,4.18,4.17,4.15,4.13,4.11,4.09,4.06,4.03,4.0,3.97,3.93,3.9,3.86,3.81,3.77,3.73,3.68,3.63,3.58,3.53,3.47,3.41,3.35,3.29,3.23,3.17,3.11,3.05,2.98,2.92,2.86,2.8,2.73,2.66,2.6,2.53,2.46,2.34,2.33,2.26,2.2,2.13,2.06,2.0,1.93,1.86,1.8,1.73,1.67,1.6,1.54,1.47,1.41,1.35,1.29,1.22,1.16,1.1,1.04,0.99,0.93,0.87,0.82,0.77,0.71,0.66,0.61,0.56,0.52,0.47,0.43,0.39,0.35,0.31,0.27,0.24,0.21,0.18,0.15,0.12,0.1,0.08,0.06,0.04,0.03,0.02,0.01,0.0,0.0],

"F": [29.13,29.46,30.58,31.46,31.92,32.48,33.06,33.68,34.41,36.11,37.45,38.52,39.99,40.93,42.37,44.56,46.7,48.82,51.0,53.32,55.17,56.93,58.17,57.69,56.52,55.21,54.0,52.62,51.81,51.61,51.95,52.61,53.22,53.7,54.29,54.47,54.32,53.99,53.43,52.65,51.84,51.27,51.03,50.96,50.96,51.02,51.18,51.39,51.59,51.65,51.64,51.57,51.44,51.25,51.01,50.75,50.67,50.59,50.55,50.63,50.9,51.16,51.3,51.38,51.52,51.61,51.5,51.38,51.28,51.18,51.03,50.94,50.91,50.94,50.95,50.98,51.07,51.24,51.28,51.26,51.21,51.17,51.11,50.97,50.69,50.64,50.64,50.64,50.66,50.72,50.8,50.86,50.86,50.84,50.81,50.76,50.63,50.55,50.52,50.51,50.51,50.53,50.57,50.67,50.77,50.78,50.71,49.79,48.52,47.32,46.96,46.28,45.34,44.26,43.67,43.16,42.46,41.21,39.92,38.239998,36.12,34.45,32.7,30.65,28.09,25.36,22.66,20.58,20.35,21.53,23.36,25.35,27.12,28.52,29.24,28.77,27.5,26.01,24.64,23.48,22.83,22.8,23.48,24.28,25.08,25.79,26.3,26.36,26.03,25.43,24.98,24.59,24.33,24.37,24.4,24.59,24.92,25.14,25.4,25.64,25.78,25.74,25.69,25.65,25.65,25.59,25.55,25.57,25.65,25.79,25.96,26.14,26.3,26.4,26.45,26.53,26.6,26.65,26.72,26.75,26.84,27.0,27.22,27.35,27.56,27.85,27.97,28.1,28.23,28.31,28.39,28.43,28.47,28.58,28.66,28.76,28.89,29.03,29.19,29.37],

"Watt": [10.6,10.52,10.52,10.66,10.51,10.51,10.7,10.7,10.75,10.7,10.75,10.76,11.0,11.01,11.0,11.02,11.19,11.24,11.26,11.22,11.25,11.25,11.45,11.44,11.37,11.37,11.29,11.29,11.46,11.46,11.35,11.35,11.35,11.42,11.42,11.42,11.28,11.21,11.23,11.23,11.09,11.09,11.09,11.09,11.08,11.08,10.94,10.94,10.96,10.96,10.96,10.84,10.84,10.73,10.77,10.86,10.74,10.74,10.74,10.67,10.67,10.67,10.71,10.71,10.59,10.59,10.75,10.75,10.75,10.62,10.62,10.62,10.72,10.61,10.61,10.61,10.77,10.77,10.64,10.64,10.71,10.71,10.71,10.71,10.69,10.77,10.82,10.82,10.79,10.79,10.79,10.79,10.86,10.86,10.77,10.77,10.81,10.88,10.88,10.88,10.72,10.72,10.72,10.85,10.85,10.65,10.65,10.77,10.77,10.77,10.58,10.59,10.73,10.73,10.73,10.73,10.54,10.54,10.67,10.67,10.67,10.51,10.51,10.63,10.59,10.55,10.51,10.58,10.72,10.77,10.77,10.79,10.92,11.04,11.21,11.24,11.06,11.04,11.13,11.13,11.16,11.16,11.14,11.14,11.27,11.27,11.27,11.07,11.07,11.34,11.34,11.34,11.17,11.17,11.25,11.25,11.15,11.15,11.15,11.08,11.14,11.14,11.14,11.03,11.0,11.0,11.0,10.9,10.9,10.9,10.89,10.89,10.85,10.85,10.85,10.8,10.8,10.8,10.8,10.63,10.63,10.75,10.75,10.75,10.57,10.57,10.57,10.66,10.66,10.66,10.47,10.55,10.63,10.63,10.53,10.53,10.53,10.53,10.53,10.6],

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},

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"Stroke": "4.21",

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"Watt": [10.6,10.52,10.52,10.66,10.51,10.51,10.7,10.7,10.75,10.7,10.75,10.76,11.0,11.01,11.0,11.02,11.19,11.24,11.26,11.22,11.25,11.25,11.45,11.44,11.37,11.37,11.29,11.29,11.46,11.46,11.35,11.35,11.35,11.42,11.42,11.42,11.28,11.21,11.23,11.23,11.09,11.09,11.09,11.09,11.08,11.08,10.94,10.94,10.96,10.96,10.96,10.84,10.84,10.73,10.77,10.86,10.74,10.74,10.74,10.67,10.67,10.67,10.71,10.71,10.59,10.59,10.75,10.75,10.75,10.62,10.62,10.62,10.72,10.61,10.61,10.61,10.77,10.77,10.64,10.64,10.71,10.71,10.71,10.71,10.69,10.77,10.82,10.82,10.79,10.79,10.79,10.79,10.86,10.86,10.77,10.77,10.81,10.88,10.88,10.88,10.72,10.72,10.72,10.85,10.85,10.65,10.65,10.77,10.77,10.77,10.58,10.59,10.73,10.73,10.73,10.73,10.54,10.54,10.67,10.67,10.67,10.51,10.51,10.63,10.59,10.55,10.51,10.58,10.72,10.77,10.77,10.79,10.92,11.04,11.21,11.24,11.06,11.04,11.13,11.13,11.16,11.16,11.14,11.14,11.27,11.27,11.27,11.07,11.07,11.34,11.34,11.34,11.17,11.17,11.25,11.25,11.15,11.15,11.15,11.08,11.14,11.14,11.14,11.03,11.0,11.0,11.0,10.9,10.9,10.9,10.89,10.89,10.85,10.85,10.85,10.8,10.8,10.8,10.8,10.63,10.63,10.75,10.75,10.75,10.57,10.57,10.57,10.66,10.66,10.66,10.47,10.55,10.63,10.63,10.53,10.53,10.53,10.53,10.53,10.6],

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}

]

}

### 2.2.9 历史曲线数据

#### 2.2.9.1 参数说明

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 描述 | 获取某设备某一项的历史曲线数据 | | | | |
| URL | 平台访问地址/api/read/getHistoryCurveData | | | | |
| 请求数据 | **代码** | **名称** | **类型** | **必填** | **备注** |
| User | 账号 | string | \* |  |
| Password | 密码 | string | \* |  |
| DeviceName | 设备名称 | string | \* |  |
| ItemName | 数据项名称 | string | \* |  |
| Limit | 记录数 | int |  | 获取最新历史记录数，查询以此参数为准，为0时，以起始时间和结束时间为准 |
| StartDate | 起始时间 | string |  | Limit为0时生效  格式：yyyy-MM-dd HH:mm:ss |
| EndDate | 结束时间 | string |  |
| 响应数据 | **代码** | **名称** | **类型** | **备注** | |
| ResultStatus | 状态 | int | 1:请求成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效 | |
| DataList数据列表 | | | | |
| AcqTime | 采集时间 | string | 格式：yyyy-MM-dd HH:mm:ss | |
| Value | 变量 | string |  | |

#### 2.2.8.2 实例

1、请求参数实例

{

"User": "user01",

"Password": "123456",

"DeviceName": "SRP01",

"ItemName": "运行频率",

"Limit":100,

"StartDate": "2025-02-27 00:00:00",

"EndDate": "2025-02-28 00:00:00"

}

2、响应数据实例

{

"ResultStatus": 1,

"DataList": [

{

"AcqTime": "2025-02-27 09:20:00",

"Value": "60.5"

},

{

"AcqTime": "2025-02-27 09:30:00",

"Value": "60.5"

}

]

}

## 2.3 数据写入接口

预留

### 2.3.1 设备控制

#### 2.3.1.1 参数说明

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 描述 | 设备控制接口（预留） | | | | | |
| URL | 平台访问地址/api/write/deviceControl | | | | | |
| 请求参数 | **代码** | **名称** | **单位** | **类型** | **必填** | **备注** |
| User | 账号 |  | string | \* |  |
| Password | 密码 |  | string | \* |  |
| DeviceName | 设备名称 |  | string | \* |  |
| ItemName | 控制项名称 |  | string |  |  |
| Value | 控制变量 |  | string[] |  |  |
| 响应数据 | **代码** | **名称** |  | string | **备注** | |
| ResultStatus | 状态 |  | int | 1:写入成功，-1:用户名为空，-2:密码为空，  -3:账号或密码错误，-4:用户无效，  -6：用户权限不足 | |

#### 2.3.1.2 实例

1、请求数据

{

"User": "user01",

"Password ": "123456",

"DeviceName": "rpc01",

" ItemName ": "运行频率",

" Value ": "60"

}

2、响应数据

{

"ResultStatus": 1

}