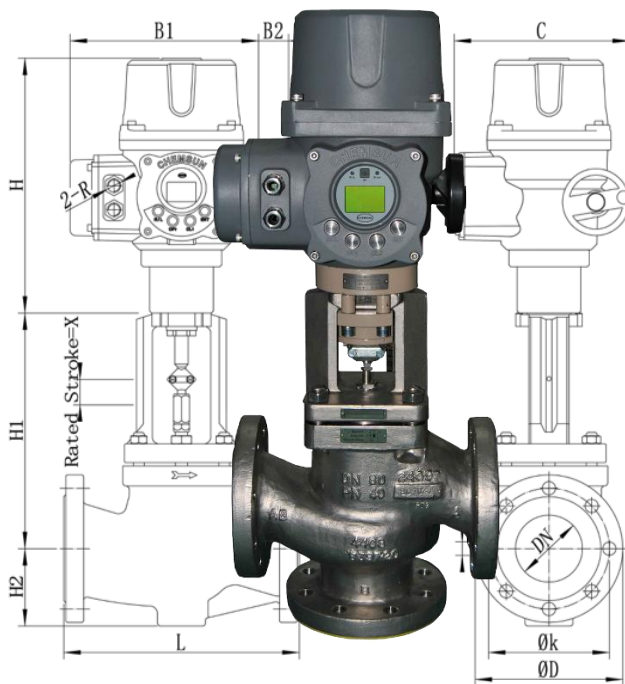


CSR/L-G01 系列 高精智能型电动执行机构

CSR/L-G01-series High-performance Smart Electric Actuator



调试和使用该设备前敬请仔细阅读本手册！

Read the instructions carefully before commissioning & operating this device, please

EB1001CH/EN

操作手册 Operating Instructions

Edition Mar. 2024 , Firmware version 4.0.5

本手册适用于 CHEMSUN CSR/L-G01 型智能电动执行机构的安装、调试、使用和维护指导。

The operation manual is applicable to the installation, commissioning, usage and maintenance instruction of the CSR/L-G01 series intelligent electric actuator of the CHEMSUN.



警告: 调试过程中进行全开/全关位置设置时, 在接近阀门的全开或全关位置时, 应该为手轮操作, 严禁使用点动按钮进行点动操作, 否则可能由于位置走过引起阀门或者执行机构的损坏, 由于此种原因造成执行机构损坏, CHEMSUN 概不负责。

Warning: During the commissioning process, please change to handwheel operation mode when it is near the open or closed position of the valve; it is forbidden to operate by inching button; otherwise, the valve or actuator may be damaged by passing the position. CHEMSUN will not bear any responsibilities for such damage.



警告: 在安装、调试、使用和维护 CHEMSUN G01 型智能电动执行机构前, 必须仔细阅读本手册, 严格按照安全操作规程操作, 以防造成人身安全事故。

Warning: Please carefully read the operation manual before installation, commissioning, usage and maintenance of CHEMSUN G01-type intelligent electric actuator; operate in strict accordance with the safe operation regulations to prevent personal safety accident.



警告: 在操作过程中, 必须小心高温、高压、易燃、易爆、有毒及腐蚀性介质和高电压、强大外力等危险情况。

Warning: In the normal operation, please pay special attention to such dangers: high-temperature and high-pressure, combustible, explosive, poisonous and corrosive medium, high voltage and strong external force, etc..



目 录 Contents

使用安全/Safety of Usage	1
1 存放/Storage	4
2 执行机构的基本操作/Basic Operation of Actuator	5
2.1 手轮的操作/Handwheel Operation	5
2.2 电动操作/Electric Operation	6
2.2.1 组态按钮/ Function Button	7
2.2.2 自动/手动操作/ Local/Remote Operation	8
2.3 手动/自动显示/Local / Remote Display	8
2.4 实时状态显示/Display of Real-time Status	9
2.5 控制状态显示/Display of Control Status	9
2.6 报警显示/Display of Alarm	9
3 执行机构的安装/Installation of actuator	10
3.1 直行程联接/Linear Connection	11
3.2 角行程联接/Part-turn Connection	12
3.3 电气联接/Electric Connection	14
3.4 高度集成 CPU 控制模块/High-integrated CPU Control Module	15
3.5 接线端子排/Wiring Terminal Block	15
3.5.1 接线端子定义/ Definition of Wiring Terminal	16
3.5.1.1 标准型接线端子定义	17
3.5.1.2 电压扩展型接线端子定义	19
3.5.1.3 通讯扩展型接线定义	21
3.6 接线原理图/Wiring Schematic Diagram	23
4 调试/Commissioning	24
4.1 设置程序简介/Instruction of Setup Procedure	24
4.1.1 概述/Overview	24
4.1.2 设置程序的基本框图/Basic Block Diagram of Setup	26
4.2 进入执行机构的设置程序/Access Setup Procedure of Actuator	



.....	28
4.3 基本设置 (Basic setting).....	29
4.3.1 手动校准. (Menu Check).....	30
4.3.2 精度调整 (Accuracy Adjust)	31
4.3.3 磁滞调整 (Hysteresis Adjust)	32
4.3.4 信号故障 (Signal Fault)	32
4.3.5 最大转速/Maximum Speed	33
4.3.6 减速范围/ Deceleration range	33
4.4 初始设置(Original Setting)	34
4.4.1 工作模式/Work mode	35
4.4.2 输入校准/Input check.....	35
4.4.3 输出校准/Output check	36
4.4.4 断电故障/Power Failure Action.....	36
4.4.5 力矩保护/ Torque protect	37
4.4.6 作用方向 (POSI_NEG_Effct)	38
4.4.7 恢复初始/ Restore Default Setting	38
4.4.8 设置语言/Select Language	39
4.4.9 设置密码/Password Setting	39
4.4.10 版本信息/ Version info	39
4.4.11 信息查询/ Info inquiry.....	39
5 设备维护和保养/Maintenance and Servicing of Equipment	40
5.1 设备维护周期/ Equipment Maintenance Cycle	40
5.2 润滑/Lubrication	41
6 故障信息及处理一览表/List of Fault Information and Settlement	42
7 相关测试报告/ Related test reports:	46
7.1 EMC 测试报告 A/ EMC test report A.....	46
7.2 EMC 测试报告 B/ EMC test report B.....	47
7.3 安规测试报告/ Safety testing report:	48
7.4 防爆认证/IECEX Certificate of Conformity:	49
7.5 中国国家强制性产品认证证书/ CCC Certification.....	50



标准诊断功能可对控制系统、阀门和执行机构的状态进行诊断，并通过执行机构显示屏以文字形式来显示。

The standard diagnosis function is able to make diagnosis to the working status of control system, valve and actuator, and displayed in the actuator's screen in form of character.

设定、报警及状态菜单的文字说明可以是英语(默认)和中文。

The textual specification of setup, alarm and status menu includes English (default) and Chinese version.

本手册提供如下指导：

The operation manual provides the following instructions:

- ◆ 手动/电动[就地/远程]操作
- ◆ Manual/electric [Local/remote] operation
- ◆ 执行机构的准备和安装
- ◆ Preparation and installation of actuator
- ◆ 执行机构基本设定
- ◆ Basic setup of actuator
- ◆ 执行机构组态设定
- ◆ Configuration setup of actuator
- ◆ 维护及故障排除。
- ◆ Maintenance and fault settlement
- ◆ 销售服务
- ◆ Sales service

使用安全/Safety of Usage

本手册是为能胜任的用户安装、操作、调试及检查 CHEMSUN G01 型执行机构而出版的。只有经过培训的、有经验的人员才可以对 CHEMSUN 执行机构进行安装、维护及维修，并且必须按照本手册及其它相关资料来进行。用户及其设备操作人员应根据当地相关的安全与健康条例规定来熟悉他们的职责。

The operation manual is published to meet the competent user's installation, operation and commissioning demand of CHEMSUN G01-type actuator. Only well-trained and experienced personnel are able to execute installation, maintenance and repair of CHEMSUN actuator; it must strictly adhere to this operation manual and related specifications herein. The user and its equipment operator shall become familiar with their responsibilities according to local safety and health stipulations.

当 G01 型执行机构与其它设备共同使用时，应充分考虑有可能发生的情况。如需要 CHEMSUN G01 型执行机构安全使用的更多资料及相关指导，可根据需要提供。

When G01-type actuating mechanism is applied together with other equipment, adequate considerations shall be made to possible conditions; more documents and related instructions are provided if required for safe usage of CHEMSUN G01-type actuator.

这些执行机构的电气安装、维护及使用应按照本国相关的、适合现场安装以及设备安全使用的法律、法规来进行。

The electric installation, maintenance and usage of actuator are in accordance with the national related laws and stipulations applicable to on-site installation conditions and safe usage of the equipment.

机械安装应按照本手册中的概述，并依照相关标准来进行。如果执行机构铭牌上标称为防爆型，则该执行机构只可安装到分类的 1 区和 21 区、2 区和 22 区(或 1 组、2 组的 1 级或 2 级)防爆区域。除非铭牌上标称可用于更低的燃点，否则执行机构不能安装到燃点低于



135° C 的防爆区域中, 执行机构只可安装到与铭牌标称的可燃气体分组相符的防爆区域。

The mechanical installation should be in accordance with the overview clearly specified in the operation manual and in reference to relevant standards; if the nominal in the nameplate is explosion-proof mode, the actuator can be only installed in classified Zone 1 and Zone 21, Zone 2 and Zone 22 (or Level I or Level II of Group 1, Group 2); except that nominal in the nameplate is applicable to lower combustion point, it is forbidden to install actuator in the explosion-proof area with a combustion point of lower than 135°C; the actuator can only be installed in the explosion-proof area compatible with the combustible gas grouping clearly specified in the nominal in the nameplate.

执行机构的电气安装、维护和使用也应依照特殊防爆认证相关的实施规程来进行。

The electric installation, maintenance and usage of actuator should be in accordance with the execution regulations clearly specified in the special explosion-proof accreditation.

如果执行机构符合防爆区域认证的要求, 则无需对其进行检查和维修。无论在任何情况下, 都不得对执行机构进行任意改造, 因为这将使已经获得的防爆认证无效。

If the actuator meets the accreditation requirements of explosion-proof area, there is no need to make inspection or maintenance; under any circumstance, it is forbidden to modify the actuator since it will make obtained explosion-proof accreditation become invalid.

在防爆区域内, 禁止用任何带电导体接触执行机构, 除非进行经特殊允许的工作, 否则应切断电源, 将执行机构卸下并移到非防爆区域进行维修或保养。

In the explosion-proof area, it is forbidden to contact the actuator with any charged conductor except for special permission; otherwise, the user shall cut off the power supply, dismantle the actuator and displace to the



non-explosion-proof area for maintenance or servicing.



警告：电机温度在常规操作时，执行机构电机外壳表面温度可能超过60°C。如果执行机构设定为电机温度保护旁路，则其防爆认证无效，使用此设定有可能发生电气危险，用户应考虑使用必要的安全措施加以保证。

Warning: In the normal operation, the surface temperature of motor shell of actuator may exceed 60°C; if protective bypass is collocated for the motor temperature, the explosion-proof accreditation is invalid. The setup may lead to electric danger; the user shall consider necessary safety measures.



警告：G01 型执行机构用于海拔 2500m 以下。

Warning: G01- type actuator is available below an altitude of 2500m.

1 存放/Storage

如果执行机构不能立即安装到现场，则应将其保存在一个干燥的场所，直到准备接线。

If the actuator fails to be immediately installed to the fixed position, it shall be stored in a dry till ready for connection.



警告：禁止露天、潮湿、雨水和淹没的环境中存放，由此造成的后果，CHEMSUN 公司将不承担任何责任。

Warning: It is forbidden to store the actuator in open air, humid, rainy and sunken environment; CHEMSUN does not bear any responsibilities for such consequences.

如果执行机构已经安装到现场，但还没有接线，那么建议您将电缆入口的塑料塞子换成缠有聚四氟乙烯带的密封金属塞。

If the actuator is installed into a fixed position without electric connection, it is recommended to replace plastic plug at the cable inlet into sealed metal plug enwrapped with teflon tape.

在使用过程中，执行机构主体部分需与腐蚀性介质、高压电缆、高强度磁场隔离。

In the normal usage, the main part of actuator must be isolated from the influential environment such as corrosive medium, high-voltage cable and high-strength magnetic field.

如无意外，CHEMSUN 执行机构的密封结构将会很好地保护内部的电气部件。

The sealing structure of CHEMSUN actuator is able to protect the internal electric components except for accidental conditions.

每一台 CHEMSUN 执行机构在出厂前均已经过全面检测，如果正确安装、调试和密封，则可提供多年的无故障运行。

Each CHEMSUN actuator has received integrated inspection before

leaving the factory; correct installation, commissioning and usage will assure non-fault operation for years.



警告: 由于执行机构外壳为铝制品结构, 禁止外力冲击以免变形造成外部结构损伤和漏油进水。

Warning: Since the shell of actuator is made of aluminum structure, it is forbidden to impact by strong external force; otherwise, the external structure is deformed and results in oil leakage and water ingress.

2 执行机构的基本操作/Basic Operation of Actuator

2.1 手轮的操作/Handwheel Operation

手轮可提供除电动之外的就地手动操作及紧急事态下的特殊操作。CHEMSUN 电动执行机构采用的是行星齿轮传动结构, 所以, 无离合装置, 无论处于就地/远程, 手动/电动状态下皆可转动手轮, 不会造成事故。

The handwheel is able to provide local manual operation beyond electric operation and other special operation under emergency. CHEMSUN electric actuator adopts the planetary gear transmission structure, which has no clutch device, so it is safe to rotate the handwheel regardless of the local/remote, or manual/electric state.

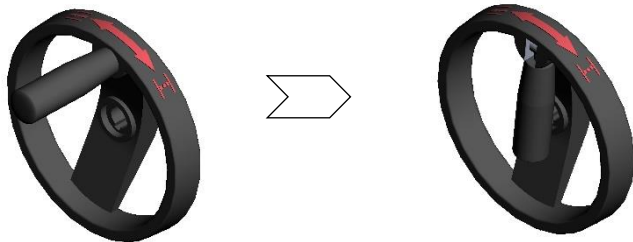


图 2-1 手柄的折叠

Grawing 2-1 Handle Folding



警告: 关于电动执行机构的操作, 任何情况下不允许用扳手之类的附加工具旋转手轮来打开或关闭阀门, 这样可能会导致阀门或者电动执行机构损坏。

Warning: Under any circumstance, it is forbidden to rotate the handwheel by other additional tools to open or close the valve, such as the wrench; otherwise, the valve or electric actuator may be damaged.

2.2 电动操作/Electric Operation

在电动操作之前, 请检查电源电压, 应与执行机构铭牌上的电压要求相符。

Before electric operation, please inspect and confirm the power voltage corresponding with voltage requirements clearly specified in the nameplate of actuator.



警告: 如果没有进行初步检查, 不要进行电动操作。

Warning: Do not perform electrical operations without initial inspection.



警告: 电气连接一定保证在断电状态下进行, 连接之前一定要检查电源形式(电压和频率等)和电机参数是否与要求一致。

Warning: The electric connection must be executed in the power-off state; before connection the user must check the consistency of power form (voltage and frequency, etc.) with motor parameters.



警告: 电气设备的安装和连接只能由具备相应资质的受过专业培训的电气工程师和他指导并授权的人员完成, 并严格按照相应规范进行操作。

Warning: The qualified and well-trained electric engineer or authorized personnel are designated for the equipment installation and connection in strict accordance with the operation manual.

2.2.1 组态按钮/ Function Button



图 2-2 组态操作面板

Drawing 2-2 Configuration Operation Panel

“R/L”按钮：在设置过程中为“取消”键

“R/L” button: “Cancel” key in the setup

“ENT”按钮：在设置过程中为“确定”键

“ENT” button: “Confirm” key in the setup

“R/L”+“ENT”组合按钮：“就地/远程”切换键

“R/L” + “ENT” composite button: “Local/remote” transfer key in the setup

“OP ↑”按钮：开阀键，在设置过程中为数字参数“增加”键

“OP ↑” button: Open valve, “Increase” key of digital parameters in the setup

“CL ↓”按钮：关阀键，在设置过程中为数字参数“减小”键



“CL ↓” button: Close valve, “Decrease” key of digital parameters in the setup

2.2.2 自动/手动操作/ Local/Remote Operation

通过面板组态按钮或选择显示屏相应菜单可对执行机构进行“自动/手动”切换操作（面板操作的组合键为“R/L”+“ENT”键；）。

The user presses function button in panel for “local/remote” transfer of the actuator. (The composite key of panel operation refers to “R/L”+“ENT” key).

执行机构处于“手动”操作状态时，显示屏左下角显示“L”。

If the actuator is in the “local” operation status, “L” indicating is light at the lower corner of the screen.

执行机构处于“自动”操作状态时，显示屏左下角显示“R”。

If the actuator is in the “remote” operation status, “R” indicating is light at the lower left corner of the screen.

2.3 手动/自动显示/Local / Remote Display

R/L 显示：“R”——自动，“L”——手动；

R/L indicating display: “Local” – “L”, “Remote” — “R”.

2.4 实时状态显示/Display of Real-time Status



G01 系列执行器显示提供了实时状态显示:

G01-series actuator supports the display function of real-time status;

第一行: 设定信号显示;

1st line: Display set signal and control status;

第二行: 阀位当前状态显示;

2nd line: Display valve status;

第三行: 执行器 自动/手动 及状态显示。

3rd line: Actuator automatic / manual and status display

2.5 控制状态显示/Display of Control Status

控制状态指示通过 R/L 显示分辨:

The indication of the control status is distinguished by the color of R/L indicating light:

“R” : 自动控制;

“R” : Remote control;

“L” : 手动控制;

“L” : Local control.

2.6 报警显示/Display of Alarm

当输入 4~20mA 信号故障时, 屏幕左下角显示“S”, 故障排除后“S”消失。

If the input signal as 4~20mA fails, the “S” is displayed at the lower left corner of the screen, it means “Input signal error” once the failure is

eliminated, the "S" disappears.

当执行器有断电安全位置保护时，在断电情况下，屏幕下方显示“P”，故障排除后“P”消失。

When the actuator has a power-off safety position protection, in the event of a power outage, "P" is displayed below the screen, and after troubleshooting, "P" disappears.

当执行器负载力矩超出设定力矩保护值时，屏幕下方显示“T”，当执行器反向运动时，“T”消失。

When the load torque of the actuator exceeds the set torque protection value, "T" is displayed at the bottom of the screen. When the actuator moves in reverse, "T" disappears.

当执行器电机因各种原因堵转时，屏幕下方显示“B”，当执行器反向运动时，“B”消失。

When the actuator motor is blocked due to various reasons, "B" is displayed below the screen. When the actuator moves in reverse, "B" disappears.

3 执行机构的安装/Installation of actuator

执行机构安装前应确保阀门稳固，否则有可能头重脚轻而不稳固。

Before the installation of the actuator, ensure that the valve is stable, otherwise it may be head heavy and unstable.

任何时候都应由经过培训和有经验的人员来进行，确保吊装的安全，尤其是安装执行机构时。

Under any circumstance, the well-trained and experienced personnel are designated to execute operation to ensure the lifting safety, especially in installation of actuator.



警告：执行机构应该被完全支撑起来，直到与阀轴完全啮合，且执行机构落实在阀门的连接法兰上。

Warning: The actuator shall be fully supported, until it is totally meshed



with the valve shaft and falls firmly on the connecting flange of valve.

适配法兰符合国际标准 ISO 5210 或美国标准 MSS SP101，必须与阀门相匹配。

The connecting flange is in accordance with ISO 5210 standard or MSS SP101 standard, which must be matched with the valve.

执行机构与阀门连接支架的材料规格应符合 ISO 8.8 级抗屈服强度 628N/sq mm。

The materials specification of the connecting support between the actuator and valve are in accordance with Level 8.8 of the ISO; the yield strength is 628N/sq mm.



警告：对于已连接好的执行机构和阀门，不能吊装执行机构，应通过阀门起吊。

Warning: For the well-connected actuator and valve, it is forbidden to lift the actuator directly, but lifting through the valve.

每个组装好的整体必须放在一个独立的基座上估重，以便安全吊装。

Each assembled entirety must be placed on a separate base to estimate weight for lifting safety.

3.1 直行程联接/Linear Connection

线性推力装置

Linear thrust device

将回转输出转换为线性运动的最简单的推力装置

It is the simplest thrust device to transfer the rotary output to the linear motion.

推力装置采用滑动螺旋副，螺杆为主动端，标准行程数据参见 G01 系列样本资料，不得超限使用。螺母材质为耐磨锡青铜。额定载荷下，使用寿命全行程不低于 80000 次，并能很好的保证滑动螺旋副的传动精度。此线性装置在传动精度失效后可维修或更换。

The thrust device adopts sliding helical pair with nut as the drive end; the standard stroke data is referred in G01-series sample materials, and overrun is forbidden. Nut is made of wear-resistant tin bronze. Under the rated load, the service life is not less than 80000 times in full stroke, and transmission accuracy of the sliding screw pair can be well ensured. In case of failure of transmission precision, the linear device can be repaired or replaced.

滑动螺旋副通过高粘度特种润滑脂润滑，无需另外补充润滑剂。

The sliding helical pair is lubricated by high viscosity of special lubricant. It doesn't need to supplement lubricant in the normal usage.

线性推力装置安装时，应特别注意保证丝杠与阀杆的同轴度，以免造成阀门寿命的减少。

In the installation of the linear thrust device, the co-axiality between screw stem and valve stem is particularly assured to avoid the decrease of the valve life.



警告：当确认执行机构与阀门连接无误后，在调试前一定阅读本说明书的“设置部分”，特别注意全开位置和全关位置的设置方法，先点动后手轮操作。

Warning: In confirmation of correct connection between actuator and valve, reading the “commissioning part” in the operation manual before commissioning; pay special attention to setup method of open and closed position, operating by inching first and then by handwheel.

3.2 角行程联接/Part-turn Connection

CHEMSUN 执行机构输出为多回转型式

CHEMSUN actuator is in multi-turn mode.

根据扭矩不同和旋转角度不同（90~270°），输出范围如下：

According to different torque and rotary angle(90--270°), the output scope is as follows:

100~1200Nm, 100Nm 以内无需配置任何减速机构；300~1200Nm

需配置单级或多级行星减速箱。

100~1200Nm: It needs not to add any reducer within 100Nm;

300~1200Nm: It is the single-stage or multistage planetary gearbox.

角行程动力输出端口尺寸遵照 ISO5200 标准（尺寸详见 CSR/L-G01 系列样本）。

The dimension of part-turn PTO (power take-off) port is in accordance with the ISO5200 standard (The detailed dimension is referred in CSR/L-G01 series samples).

在未提前说明的情况下，1200Nm 以下只提供“◇”连接端口。请根据标准规定的端口方向正确连接，确保执行机构的安装方向整齐美观（执行机构垂直或平行于管道）。

Without prior instructions, it only provides “◇” connecting port below 1200Nm. Please connect correctly according to the port direction clearly specified in the standard and assure the tidiness and beauty of installation direction of actuator (The actuator is parallel to or vertical to the pipe).



警告: 当发生阀门阀杆外四方与执行机构输出端的内四方方向不一致时，需另加工一个双头连接件（一端外方另一端内方，分别与执行机构和阀杆相连），双头连接件与阀门和执行机构连接后，应保证传动角度爬行不超过 0.2°。

Warning: When the outer square direction of valve stem differs from the actuator's inner square direction, it needs to process another double-end connecting piece (one end is square internally and the other end is square externally, respectively connected with the actuator and valve stem); ensure the crawling transmission angle does not exceed 0.2 degrees, when the double-end connecting piece is connected with valve and actuator.

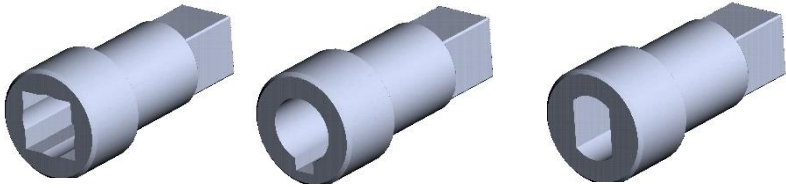


图 3-1 双头连接件

Drawing 3-1 Double-end connecting piece

当阀门与执行机构确保连接无误，松开两个 90 度行程限位螺栓后，方可进行先点动后手动的方式调试，在未提前说明时，执行机构设置输出角度为 92°。在调试完毕后，拧紧限位螺栓，并锁紧防松螺母。

In confirmation of correct connection between valve and actuator, loose two bolts of 90 degrees stroke limitation; inching first, and then commissioning manually can be operated. Without prior instructions, output angle of actuator is 92 degrees. After the completion of commissioning, tighten the limit bolt and lock-nut.

对不按规定操作或无机械基础者操作，造成的损坏，CHEMSUN 概不负责。

In case of any damages are in violation of stipulations or by unskillful operators, CHEMSUN does not bear any responsibility.

3.3 电气联接/Electric Connection



警告：CHEMSUN 公司重要声明：在上电调试之前，一定要确保接地线安全可靠接地，杜绝一切安全隐患。切记！切记！！

Warning: Important declaration of CHEMSUN : Before electrifying commissioning, please confirm the safe and reliable grounding of grounding wire.



警告：电气连接一定保证在断电状态下进行，连接之前一定要检查电源形式（电压和频率等）和电机参数是否与要求一致。

Warning: The electric connection must be made under power cutoff states; before connection, please inspect the power mode (voltage and frequency) and motor

parameters for conformity with the requirements.



警告：电气设备的安装和连接只能由具备相应资质的受过专业培训的电气工程师和他指导并授权的人员完成，严格按照相应规范进行操作。

Warning: The qualified and well-trained electric engineer and authorized personnel are designated for the installation and connection of electric equipment in strict accordance with the codes.

3.4 高度集成 CPU 控制模块/High-integrated CPU Control Module

CHEMSUN G01 系列控制模块采用高度集成的 CPU 控制技术，在保证功能强大、控制性能稳定、控制精度高的同时，实现了结构紧凑、外形小巧，安装、更换十分方便，为现场维护人员省去很多麻烦。

CHEMSUN G01 series control module adopts high-integrated CPU controlling technology, with qualities of powerful function, stable control property and high control precision, it also features compact structure, tiny appearance, and convenient installation and replacement, so that on-site maintenance personnel can save much trouble.

3.5 接线端子排/Wiring Terminal Block

1. CHEMSUN G01 型执行机构接线端子仓有两个 $M12 \times 1.5$ 的进线入口，可根据进线位置自由选择，未用进线端口需保留原堵丝不得松动。

CHEMSUN G01-type actuator terminal warehouse has two $M12 \times 1.5$ line inlets, free choice can be made according to the position of line inlet; the original blocking wire of unused line port should be retained without loose.

2. 按照下面接线端子说明，分别接入电源，输入、反馈信号线，强烈建议信号线采用屏蔽电缆，电源线和信号线分孔进入，以免造成干扰。

According to the following terminal instructions, respectively connect

the power, given and feedback signal wire; strongly recommend that the signal line use shielded cable; power cord and signal wire access into different holes so as to avoid interference.



警告: 未接线时, 请勿松动接线端子仓堵塞, 以防进水, 湿气等, 非专业人员不得进行从事本接线工作, 否则由此造成的后果 CHEMSUN 概不负责。

Warning: Fasten the plug of the terminal warehouse to avoid water and humidity, etc.; it is forbidden for unprofessional personnel to execute the wiring; otherwise, CHEMSUN does not bear such consequences.

3.5.1 接线端子定义/ Definition of Wiring Terminal

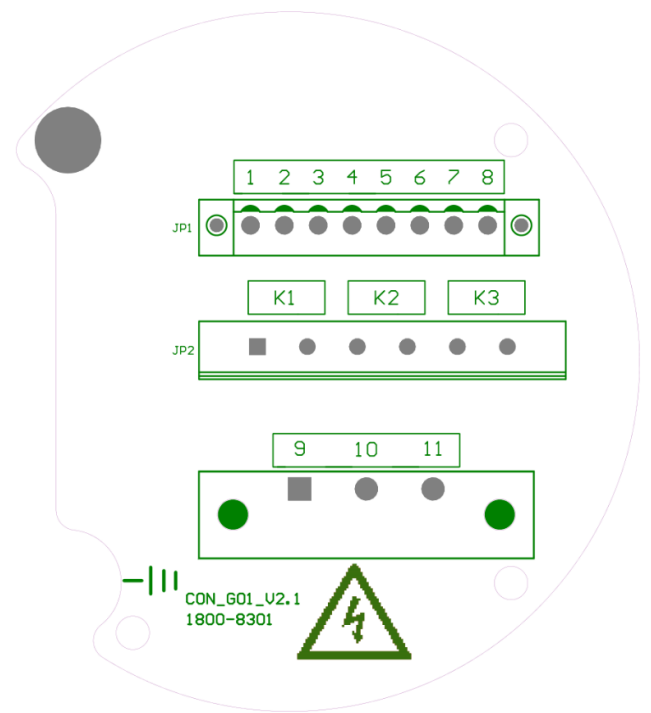


表 3-1 调节型接线端子定义

Table 3-1 Definition of Modulating Type Wiring Terminal

3.5.1.1 标准型接线端子定义:

端子序号	功能	定义	备注
1	输入控制信号（4-20mA 电流）	I_in+	接 4-20mA 输入信号的正极
2		I_in-	接 4-20mA 输入信号的负极
3	输出反馈信号（4-20mA 电流）	I_out+	接 4-20mA 反馈信号的正极
4		I_out-	接 4-20mA 反馈信号的负极
5	输入控制信号（干节点开关量）	COM	开关量信号的公共端
6		CLOSE	接开关量信号的关闭端
7		OPEN	接开关量信号的打开端
8		ESD	接开关量信号的紧急停止端
K1	干节点报警单元 1	K1-1	全开报警
		K1-2	
K2	干节点报警单元 2	K2-1	全关报警
		K2-2	
K3	干节点报警单元 3	K3-1	综合故障报警
		K3-2	
9	供电电源（功率 120W）		220v 供电火线（380v 供电火线 1）
10			220v 供电零线（380v 供电火线 2）
11			380v 供电火线 3



SN	function	Define	Detailed Instruction
1	Input control signal (4-20mA current)	I_in+	Connect the positive pole of the 4-20mA input signal
2		I_in-	Connect the negative pole of the 4-20mA input signal
3	Output feedback signal (4-20mA current)	I_out+	Connect the positive pole of the 4-20mA feedback signal
4		I_out-	Connect the negative pole of the 4-20mA feedback signal
5	Input control signal (switch quantity)	COM	Common terminal of switch signal
6		CLOSE	Connect the closing end of the switch signal
7		OPEN	Connect the open end of the switch signal
8		ESD	Emergency stop terminal for connecting switch signals
K1	Dry node alarm unit 1	K1-1	Fully open alarm
		K1-2	
K2	Dry node alarm unit 2	K2-1	Fully close alarm
		K2-2	
K3	Dry node alarm unit 3	K3-1	Comprehensive fault alarm
		K3-2	
9	Power supply (Power 120W)		220v power supply live line (380v power supply live line 1)
10			220v power supply naught line (380v power supply live line 1)
11			380v power supply live line 3



3.5.1.2 电压扩展型接线端子定义:

端子序号	功能	定义	备注
1	输入控制信号 (4-20mA 电流)	I_in+	接 4-20mA 输入信号的正极
2		I_in-	接 4-20mA 输入信号的负极
3	输出反馈信号 (4-20mA 电流)	I_out+	接 4-20mA 反馈信号的正极
4		I_out-	接 4-20mA 反馈信号的负极
5	输入控制信号 (0~10V 或 0~5V)	V_in+	接 0~10V 或 0~5V 输入信号的正极
6		V_in-	接 0~10V 或 0~5V 输入信号的负极
7	输出反馈信号 (0~10V 或 0~5V)	V_out+	接 0~10V 或 0~5V 反馈信号的正极
8		V_out-	接 0~10V 或 0~5V 反馈信号的负极
K1	干节点报警单元 1	K1-1	全开报警
		K1-2	
K2	干节点报警单元 2	K2-1	全关报警
		K2-2	
K3	干节点报警单元 3	K3-1	综合故障报警
		K3-2	
9	供电电源 (功率 120W)		220v 供电火线 (380v 供电火线 1)
10			220v 供电零线 (380v 供电火线 2)
11			380v 供电火线 3



SN	function	Define	Detailed Instruction
1	Input control signal (4-20mA current)	I _{in+}	Connect the positive pole of the 4-20mA input signal
2		I _{in-}	Connect the negative pole of the 4-20mA input signal
3	Output feedback signal (4-20mA current)	I _{out+}	Connect the positive pole of the 4-20mA feedback signal
4		I _{out-}	Connect the negative pole of the 4-20mA feedback signal
5	Input control signal (0~10V or 0~5V)	V _{in+}	Connect the positive pole of the 0~10V or 0~5V input signal
6		V _{in-}	Connect the negative pole of the 0~10V or 0~5V input signal
7	Output control signal (0~10V or 0~5V)	V _{out+}	Connect the positive pole of the 0~10V or 0~5V feedback signal
8		V _{out-}	Connect the negative pole of the 0~10V or 0~5V feedback signal
K1	Dry node alarm unit 1	K1-1	Fully open alarm
		K1-2	
K2	Dry node alarm unit 2	K2-1	Fully close alarm
		K2-2	
K3	Dry node alarm unit 3	K3-1	Comprehensive fault alarm
		K3-2	
9	Power supply (Power 120W)		220v power supply live line (380v power supply live line 1)
10			220v power supply naught line (380v power supply live line 1)
11			380v power supply live line 3



3.5.1.3 通讯扩展型接线定义:

端子序号	功能	定义	备注
1	输入控制信号（4-20mA 电流）	I_in+	接 4-20mA 输入信号的正极
2		I_in-	接 4-20mA 输入信号的负极
3	输出反馈信号（4-20mA 电流）	I_out+	接 4-20mA 反馈信号的正极
4		I_out-	接 4-20mA 反馈信号的负极
5	Modbus 接口 A 端子	A	接 Modbus 通讯接口 A
6	Modbus 接口 B 端子	B	接 Modbus 通讯接口 B
7	Modbus 通讯接口地	GND	接 Modbus 通讯接口地
8	Modbus 通讯接口地	GND	接 Modbus 通讯接口地
K1	干节点报警单元 1	K1-1	全开报警
		K1-2	
K2	干节点报警单元 2	K2-1	全关报警
		K2-2	
K3	干节点报警单元 3	K3-1	综合故障报警
		K3-2	
9	供电电源（功率 120W）		220v 供电火线（380v 供电火线 1）
10			220v 供电零线（380v 供电火线 2）
11			380v 供电火线 3



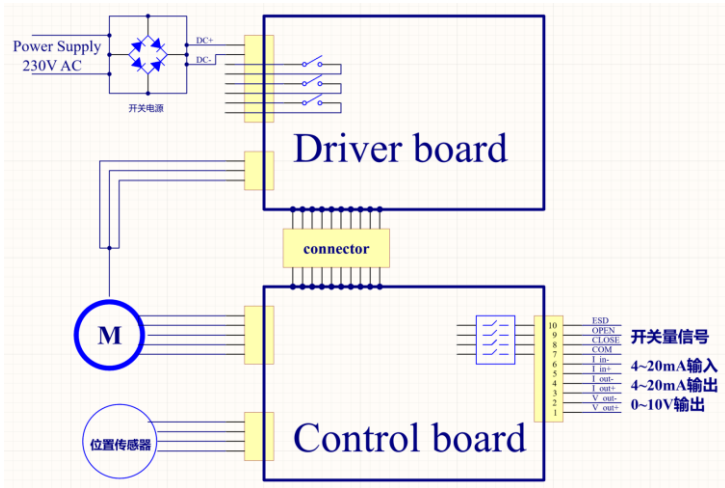
SN	function	Define	Detailed Instruction
1	Input control signal (4-20mA current)	I_in+	Connect the positive pole of the 4-20mA input signal
2		I_in-	Connect the negative pole of the 4-20mA input signal
3	Output feedback signal (4-20mA current)	I_out+	Connect the positive pole of the 4-20mA feedback signal
4		I_out-	Connect the negative pole of the 4-20mA feedback signal
5	Modbus interface A	A	Connect to Modbus interface A
6	Modbus interface B	B	Connect to Modbus interface B
7	Modbus interface GND	GND	Connect to Modbus interface GND
8	Modbus interface GND	GND	Connect to Modbus interface GND
K1	Dry node alarm unit 1	K1-1	Fully open alarm
		K1-2	
K2	Dry node alarm unit 2	K2-1	Fully close alarm
		K2-2	
K3	Dry node alarm unit 3	K3-1	Comprehensive fault alarm
		K3-2	
9	Power supply (Power 120W)		220v power supply live line (380v power supply live line 1)
10			220v power supply naught line (380v power supply live line 1)
11			380v power supply live line 3

请注意: 此为 G01 标准供货的接线端子定义。当客户有特殊功能要求, 接线端子的个数和定义可能与上表不同。接线时, **务必阅读随机提供的接线图。**

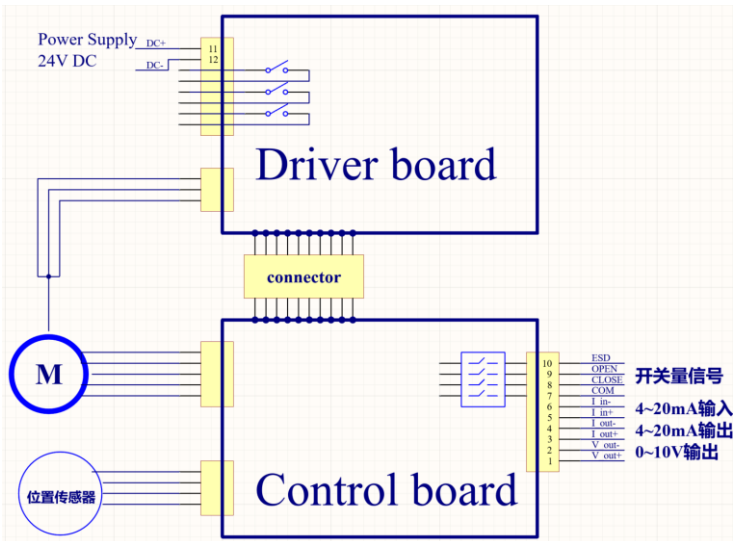
Please Note: This is the connection terminal definition for G01 standard supply. When customers have special functional requirements, the number of terminals and definition may be different from the above table. When connecting, be sure to read

the randomly provided wiring diagrams.

3.6 接线原理图/Wiring Schematic Diagram



230VAC 调节型/230VA Modulating Type



24VDC 调节型/24VDC Modulating Type

4 调试/Commissioning

4.1 设置程序简介/Instruction of Setup Procedure

4.1.1 概述/Overview

所有设定功能均存储在执行机构内部的非易失性存储器内，用户可以使用面板组态按钮通过执行机构的液晶显示屏查看所有设定功能，每个功能的设定值均可查看或更改。

All the set functions are saved in NVM of the actuator; the users can use press button in panel to search for all set functions through LCD of actuator; each set function's value can be searched or changed.

设定程序分为二级：

The set procedure includes two levels:

1. 基本设置(Basic_setting):
2. 初始设置(Original setting)



警告：所有 G01 系列执行机构的功能在出厂前均为 CHEMSUN 标准默认设定值，除非在订货时有特殊要求，可按要求进行更改，在调试期间如果遇到困难，可以恢复默认设定，返回执行机构出厂的设定，然后开始现场调试。

Warning: Before leaving the factory, all the functions of S-series actuators are set as CHEMSUN standard fault value; special requirements raised in the ordering are strictly adhered; in case of any problem in the commissioning, it is resumed to the default setup status and factory setup of actuator, and then on-site commissioning is started.



警告：默认设定根据需要谨慎使用，因为执行机构出厂后，在现场所设置数据对阀门或者使用厂家来说十分重要。

Warning: The default setup is strictly used according to actual demands; after leaving the factory, the on-site set data of actuator is of vital importance to the valve and user.



警告：必须先进行基本设置。出厂设置在执行机构出厂后，一般不需要改动。

Warning: The basic setup must be finished in advance. After the actuator leaves the factory, the factory setup hardly needs to change.

4.1.2 设置程序的基本框图/Basic Block Diagram of Setup

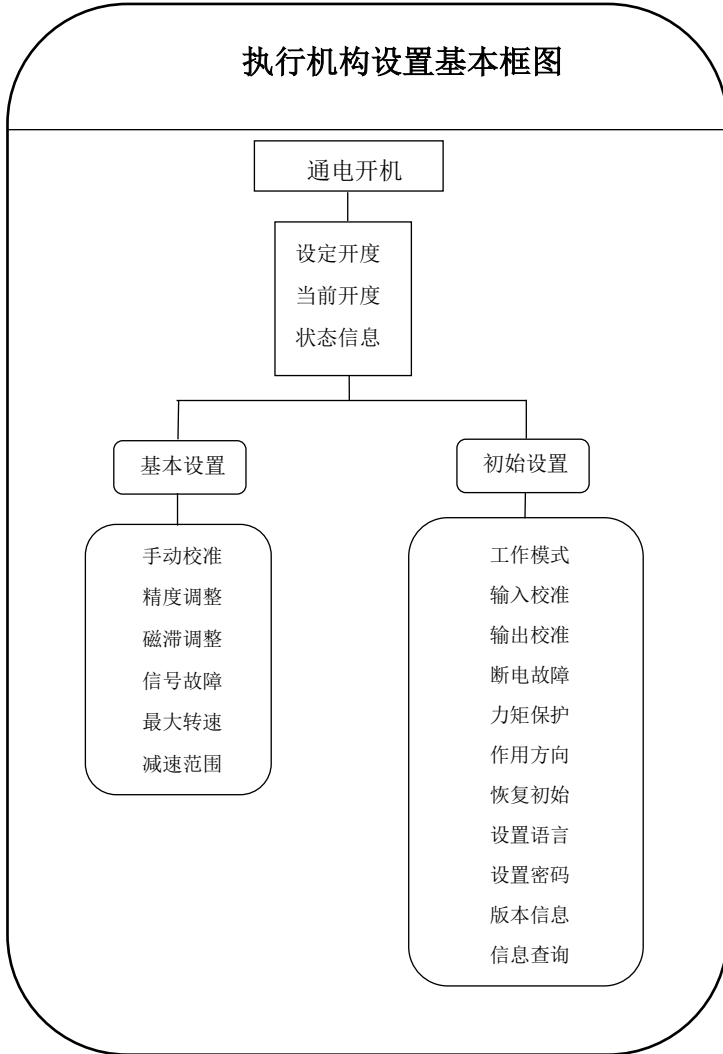
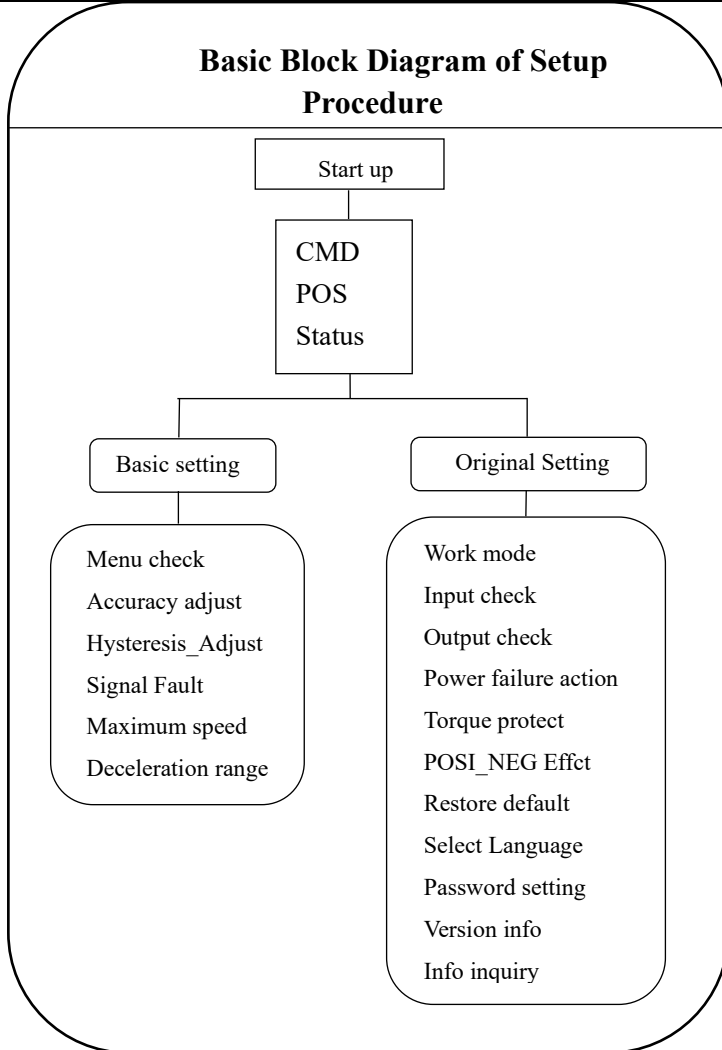


图 4-1 执行机构设置基本框图



Drawing 4-1 Basic Setup Block Diagram of Actuator

4.2 进入执行机构的设置程序/Access Setup Procedure of Actuator

执行机构通电开机，屏幕显示为：

Once E-actuators electrification, The screen is displayed as follows:



此时显示的屏幕信息为：

The information displayed in the screen is as follows:

第 1 行—设定信号位置；

1st line -- Position of set point signal;

第 2 行—执行器当前阀位置；

2nd line -- Current valve position of actuator;

第 3 行—执行器 自动/手动 及信号状态显示。

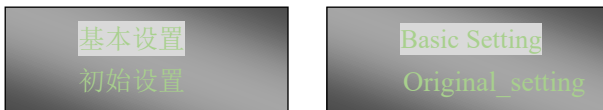
3rd line-- Actuator automatic / manual and signal status display

设置程序中按键功能见 2.2.1 功能按键

The functions of keys in setting procedure is in reference to 2.2.1 Function Button.

在手动状态下，按“ENT”按钮，输入密码，进入设置菜单，设置菜单如下

In local status, In manual mode, press the "ENT" button, enter the password, and enter the settings menu. The settings menu is as follows:



此时可通过“OP ↑”、“CL ↓”按钮改变选择项

Press “OP ↑” and “CL ↓” button to change the arrow position.

4.3 基本设置 (Basic setting)

当光标在基本设置处按“ENT”按钮可进入基本设置项的修改界面。

When the cursor is in the “Basic Set”, press “ENT” button to enter into the revision interface of the basic setup item.

基本设置项菜单如下：

Menus of basic setup item are as follows:

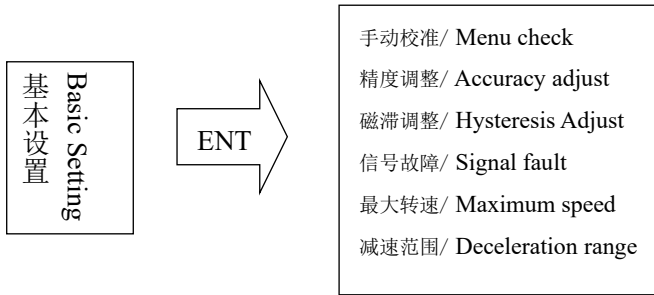
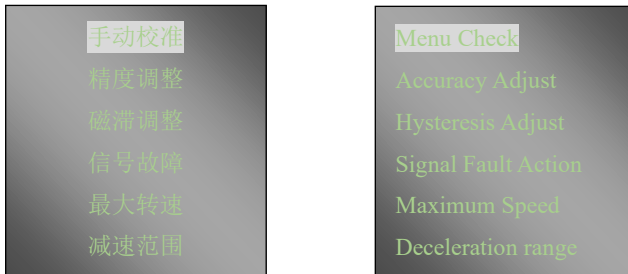


图 4-2 基本设置框图

Drawing 4-2 Basic setup block diagram

此时屏幕显示如下图：

The screen displays as follows:



按“ENT”按钮进入参数设置状态，按“R/L”按钮退出设置，OP↑和CL↓分别为向上和向下选择按钮。设置完成后按“ENT”按钮保存参数。

Press “ENT” button to enter into the setting status of parameters; press

“OP ↑” and “CL ↓” button to change the parameters and press “ENT” button for saving it.

4.3.1 手动校准. (Menu Check)

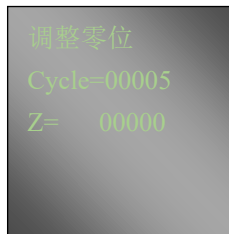
手动校准是对阀位全开位置和全关位置的设置，在实际调试过程中，对应的是阀门的允许最大及最小开度位置，进入全开设置时屏幕显示：

Menu Check is the setting of fully open and fully closed positions of the valve, In the actual debugging process, it corresponds to the allowable maximum and minimum opening positions of the valve. The screen displays as follows in the open setup:



设置过程：选择“调整零位”，按“ENT”，屏幕显示如下，按“OP ↑”或“CL ↓”按钮或摇动手轮使阀门达到全关位置，然后按“ENT”按钮保存参数；设置完成后，屏幕应如下图所示。

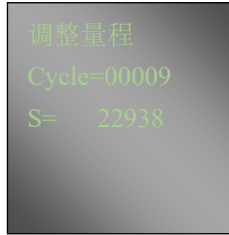
Setup process: Select "Adjust Zero Position", press "ENT", the screen shows as follows, press "OP ↑" or "CL ↓" button or shake the handwheel to make the valve fully closed, then press "ENT" button to save Parameters; After setting up, the screen should look like the following image.





选择“调整量程”，按“ENT”，屏幕显示如下，按“OP↑”或“CL↓”按钮或摇动手轮使阀门达到全开位置，然后按“ENT”按钮保存参数。

Select "Adjust Range", press "ENT", the screen shows as follows, press "OP↑" or "CL↓" button or shake the handwheel to make the valve fully open, then press "ENT" button to save parameters.



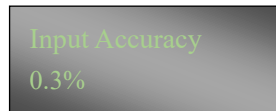
警告：调试过程中，在接近阀门的全开或全关位置时，严禁使用点动按钮进行点动操作，否则可能由于位置走过引起阀门或者执行机构的损坏，由于此种原因造成执行机构损坏，CHEMSUN 概不负责。

Warning: In the commissioning when open or closed position of the valve is near, it is forbidden to operate by inching button; otherwise, the valve or actuator may be damaged by passing the position. CHEMSUN does not bear maintenance and servicing responsibilities for the damage against actuator by such reasons.

4.3.2 精度调整 (Accuracy Adjust)

屏幕显示如下：

The screen displays as follows:



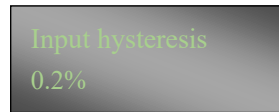
执行器在与目标值差值大于精度值时开始运行。此数值在出厂试验时以调整到最优，一般无需调整。初始值为 0.3%。

It is calibrated before leaving the factory, so description thereof will not be repeated. The initial value is 0.3%.

4.3.3 磁滞调整 (Hysteresis Adjust)

屏幕显示如下:

The screen displays as follows:



执行器在与目标值差值小于磁滞量时停止运行。此数值在出厂试验时以调整到最优，一般无需调整。初始值为 0.2%。

It is calibrated before leaving the factory, so description thereof will not be repeated. The initial value is 0.2%.



注意：磁滞量值小于等于精度值。

Warning: The hysteresis value is less than or equal to the accuracy value.

4.3.4 信号故障 (Signal Fault)

“信号故障”功能定义为：当执行机构出现给定信号故障时，执行机构所采取的动作。

The functional definition of “Signal Fault”: The actions of actuator in case of set signal fault appear in the actuator.

项值解释:

Interpretation of item values:

1. 全开: 当发生信号故障时，执行机构运行至全开位置

OPEN. (Open status): In case of signal fault, the actuator operates until open position.

2. 全关: 当发生信号故障时，执行机构运行至全关位置

CLOSE. (Closed status): In case of signal fault, the actuator operates until closed position.

3. 保持: 当发生信号故障时, 执行机构保持当前位置

LOC. (Maintenance): In case of signal fault, the actuator maintains in the current position.

4. 指定位置: 当发生信号故障时, 执行机构运行到预设的位置

Sepecific position. (Designated position): In case of signal fault, the actuator operates until the preset position.



警告: 该项设置的出厂默认值为“保持”, 根据实际工艺所需要的阀位由用户自行设定或告知调试服务人员进行现场设置。

Warning: The default value of this item is “Current1 (Maintenance)”; according to the valve position required in actual process,, the user make self-setup or notice the commissioning personnel to make on-site setup.

4.3.5 最大转速/Maximum Speed

按“ENT”键进入此参数设置状态, 按“OP↑”或“CL↓”按钮, 对当前转速作“增大”或“减小”设置, 完成后, 按“ENT”按钮保存数据。初始值为3000。

Press “ENT” button to enter into this setting status. Then press “OP↑” or “CL↓” button to increase or decrease the parameters, and press “ENT” button for saving it. The initial value is 3000.



注意: 最大转速不能超过 3500, 超过此值保存数据将报错误。

Warning: The maximum speed cannot exceed 3500. Saving data beyond this value will result in an error message.

4.3.6 减速范围/ Deceleration range

按“ENT”键进入此参数设置状态, 按“OP↑”或“CL↓”按钮,

对当前减速范围作“增大”或“减小”设置，完成后，按“ENT”按钮保存数据。初始值为 1/4。

Press “ENT”button to enter into this setting status.Then press “OP ↑”or “CL ↓”button to increase or decrease the parameters,and press “ENT”button for saving it. The initial value is 1/4.

4.4 初始设置(Original Setting)

当光标在初始设置处按“ENT”按钮可进入高级设置项的修改界面。

When the cursor is in the “Original Setting”, press “ENT” button to enter into the revision interface of the Advanced Setting item.

初始设置项菜单如下：

Menus of advanced setup item are as follows:

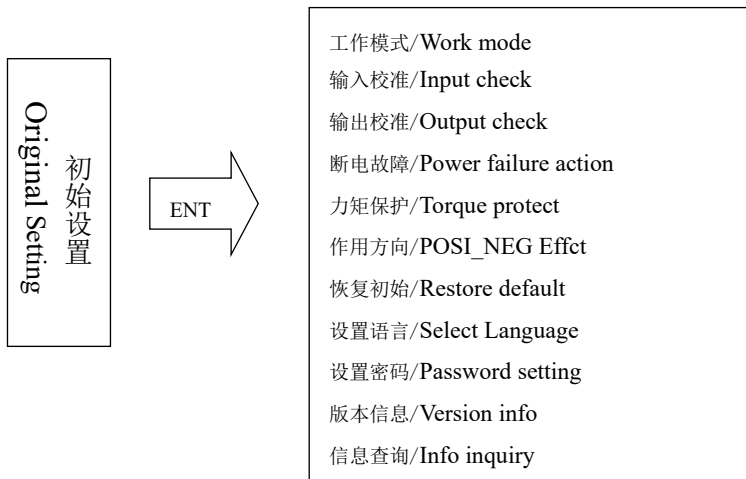


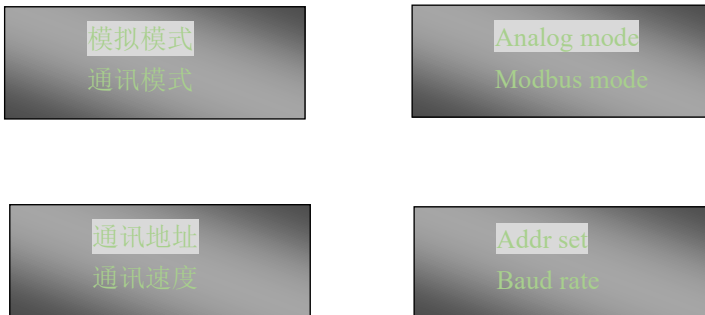
图 4-3 高级设置

Drawing 4-3 Advanced Setting

4.4.1 工作模式/Work mode

本系统有两种工作模式，分别是模拟模式和通讯模式，选择模拟模式后，在下级菜单中需要选择输入信号和输出信号类型，分别为4~20mA、0~10v、0~5v 三种信号，输入输出均可选择。如选择通讯模式，在下级菜单中需要设置通讯地址和通讯速度。初始工作模式是4~20mA 输入输出。

This system has two working modes, namely simulation mode and communication mode. After selecting simulation mode, the input signal and output signal need to be selected in the lower menu, which are 4-20mA, 0-10V, and 0-5V signals respectively. Both input and output can be selected. If you choose the communication mode, you need to set the communication address and communication speed in the lower menu. The initial working mode is 4-20mA input/output.



4.4.2 输入校准/Input check

输入信号类型可以是4~20mA，0-10V或0-5V，根据自己的需要选择信号类型。选择好相应信号后，分别输入0%、25%、50%、75%、100%的信号，执行器将自动校准，将输入信号误差减小到最小。

The input signal type can be 4-20mA, 0-10V or 0-5V, choose the signal type according to your own needs. After selecting the corresponding signals,

input signals of 0%, 25%, 50%, 75%, and 100% respectively. The actuator will automatically calibrate and minimize the input signal error.

4.4.3 输出校准/Output check

输入信号类型可以是 4~20mA, 0-10V 或 0-5V, 根据自己的需要选择信号类型。选择好相应信号后, 连接测量仪器, 根据执行器提示调节输出, 可将输出信号误差减小至最小。

The output signal type can be 4-20mA, 0-10V or 0-5V, choose the signal type according to your own needs. After selecting the corresponding signals, connect the measurements and adjust the output according to the actuator prompts to minimize the output signal error.



警告: 4~20mA 信号输出为二线制无源输出。

Warning: The 4-20mA signal output is passive.

4.4.4 断电故障/Power Failure Action

“断电故障”功能定义为: 当执行机构出现断电故障时, 执行机构所采取的动作。

The function of "power failure action" is defined as the action taken by the actuator in case of power failure.

项值解释:

Interpretation of item values:

1. 全开: 当发生断电故障时, 执行机构运行至全开位置
OPEN. (Open status):: When power failure occurs, the actuator runs to the full open position.
2. 全关: 当发生断电故障时, 执行机构运行至全关位置
CLOSE. (Closed status): When power failure occurs, the actuator runs to the full-closed position.

3. 保持：当发生断电故障时，执行机构保持当前位置

LOC (Maintenance): When a power failure occurs, the execution body maintains its current position

4. 指定位置：当发生断电故障时，执行机构运行到预设的位置

Sepecifice position. (Designated position):When power failure occurs, the execution agency runs to the preset location



警告：该项设置的出厂默认值为“保持”，根据实际工艺所需要的阀位由用户自行设定或告知调试服务人员进行现场设置。

Warning: The default value of this item is “Currentl (Maintenance)”; according to the valve position required in actual process,, the user make self-setup or notice the commissioning personnel to make on-site setup.

4.4.5 力矩保护/ Torque protect

该设置为执行器的力矩保护值，在超过该力矩值时，执行器停止动作。力矩保护有两项设定值，分别为力矩值和灵敏度。力矩值为受保护的力矩最大值。灵敏度为超过保护值的次数，次数越小，力矩保护越灵敏。另外，根据订货要求不同，本机构根据不同的力矩要求，还备有触点开关力矩保护。双重保护，更具可靠性。

This setting is the torque protection value of the actuator. When the torque value is exceeded, the actuator stops acting. There are two settings for torque protection, namely torque limiter and sensitivity. The torque limiter is the maximum protected torque value. Sensitivity refers to the number of times the protection value is exceeded, and the smaller the number, the more sensitive the torque protection is. In addition, according to different ordering requirements, the actuator also provides contact switch torque protection according to different torque requirements. Dual protection for greater reliability.

4.4.6 作用方向 (POSI_NEG_Effct)

作用方向分为“正作用”和“反作用”（正作用为随信号增大执行机构开度增大，反作用与正作用相反）。

The direction of action is divided into "positive" and "negative" (The positive action is that the opening of actuator increases with the increase of signal while the reaction is opposite to the positive action) .

可根据自己需要来设置作用方向。

The direction of action can be set according to your needs.

本项设置的默认值为“正作用”。

The default value of this item setup is “Positive (Positive effect)”.



警告：在执行机构调试前，如果发现执行机构与阀门的作用方向不一致，一定要先将此设置调整，再进行基本设置，尤其是“开阀位置”和“关阀位置”的设定。若是因此种原因造成的阀门或执行机构损坏，

CHEMSUN 概不负责。

Warning: In case of different effect direction between the actuator and valve before commissioning of the actuator, the setup must be adjusted before basic setup, especially “Open_pos.(Valve opening position)” and “Close_pos.(Valve closing position)”. In case of any damage against the valve and actuator due to such reason, CHEMSUN does not bear maintenance and servicing responsibilities.

4.4.7 恢复初始/ Restore Default Setting

选择该设置会将所有设置均恢复初始设置，为厂家调试人员所用，里面设置的参数对于用户以及使用厂家很重要一般不建议修改。

Selecting this setting will restore all settings to the initial settings for use by the manufacturer's debugging personnel. The parameters set inside are important to the user and the manufacturer, and it is generally not recommended to modify them.

4.4.8 设置语言/Select Language

进入该设置项可以修改语言，包括中文和英文两种语言。初始为英文。

Entering this setting to modify languages,including Chinese and English. Default setting is English.

4.4.9 设置密码/Password Setting

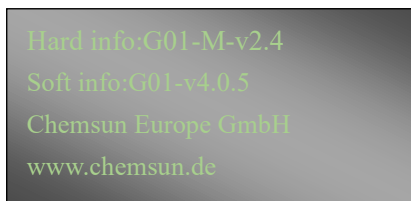
进入该设置项可以修改设置密码。初始密码为 000000。

Enter this setting to change password. The initial password is 000000.

4.4.10 版本信息/ Version info

该信息显示本执行器的硬件及软件版本信息，显示如下：

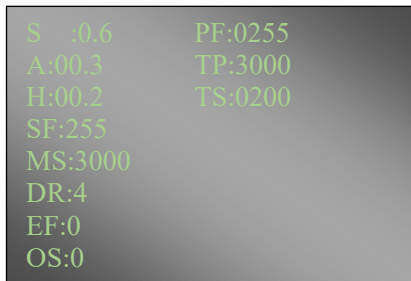
This information displays the hardware and software version information of this actuator, which is displayed below:



4.4.11 信息查询/ Info inquiry

该信息将汇总显示所有设置项信息，显示如下：

This information will summarize and display all settings information, which is displayed below:



缩写对应的信息如下:

S	span	行程
A	Accuracy	精度
H	Hysteresis	磁滞
SF	Signal Fault	断信号故障
MS	Maximum Speed	最大转速
DR	Deceleration_range	减速范围
EF	POSI_NEG_Effct	正反作用
OS	Out_Signal	输出信号
PF	Power failure	断电故障
TP	Torque protect	力矩保护
TS	Torque sensitivity	力矩灵敏度

5 设备维护和保养/Maintenance and Servicing of Equipment

5.1 设备维护周期/ Equipment Maintenance Cycle

在正常使用情况下，CHEMSUN G01 系列电动执行机构是免维护的，但是少量的日常维护是必须的。为了确保设备的正常可靠运行，请定期做一次运行测试。

Under normal usage, CHEMSUN G01 series electric actuator is free



from maintenance; however, a small amount of daily maintenance is necessary. Please make regular operation test to ensure the normal and reliable operation of the equipment.

当您使用的 CHEMSUN 产品出现您解决不了的故障，请您立即与我们办事处、代理商联系，我们将在最短的时间内给您圆满解决问题。

Please contract with our office or agency immediately when you encounter any fault with CHEMSUN products; we promise to settle the problems within the shortest time.

5.2 润滑/Lubrication

CHEMSUN G01 系列电动执行机构在正常使用条件下，整个寿命周期内无须额外的润滑。所使用的润滑油脂为添加二硫化钼的多用途高级润滑油。如需购买请及时与 CHEMSUN 中国办事处或各级代理商联系。

Under normal usage, CHEMSUN G01-series electric actuator does not require additional lubrication in the whole life cycle. The lubricant refers to multi-purpose senior lubricant containing molybdenum disulfide. Please contact with CHEMSUN Chinese office or agent at various levels for procurement.

6 故障信息及处理一览表/List of Fault Information and Settlement

故障情况 Faults	可能故障原因 Possible Reasons	故障处理 Solutions
不能开机，电源指示灯不亮 Unable to power on, power indicator light not on	无供电电源或电源不符合要求 There is no power supply or the power fails to meet the requirements.	检查电源和接线端子接线的正确性和可靠性 Inspect the power supply and wiring terminal for correct and reliable wiring.
	控制电路保险丝熔断或回路开路 Fuse of control circuit is fused or loop is open.	检查电路或更换保险 Inspect the circuit or replace the fuse.
LCD 显示 LOGO 后不能进入待机模式 Unable to enter standby mode after LCD displays logo	位置编码器故障或未接好 Position encoder faulty or not connected properly	检查位置编码器是否接好 Check if the position encoder is properly connected
执行器多次出现“B”报警 The actuator has a "B" alarm	驱动缺相、电机线圈或霍尔损坏 Drive phase loss, motor coil or Hall damage	检查主控板电机驱动部分；更换新电机。 Check the motor drive part of the main control board; Replace with a new motor.



<p>执行器输入信号正常但出现“S”报警 The input signal of the actuator is normal but an "S" alarm appears</p>	<p>接线板到主控板的连接线有故障 The connection wire from the wiring board to the main control board is faulty</p>	<p>检查接线板到主控板的连接线 Check the connection line from the wiring board to the main control board</p>
<p>输入信号与对应的给定误差较大 The input signal has a large error compared to the corresponding given value</p>	<p>输入信号未标定 Input signal not calibrated</p>	<p>重新标定输入信号 Recalibrate input signal</p>
<p>输出信号与对应的位置差别较大 The output signal has a large error compared to the corresponding position</p>	<p>输出信号未标定 Output signal not calibrated</p>	<p>重新标定输出信号 Recalibrate output signal</p>
<p>执行器能工作，但显示报警“P” The actuator can work, but the alarm "P" is displayed</p>	<p>主控板电源检测部分有故障 There is a malfunction in the power detection section of the main control board</p>	<p>更换电源检测光耦或更换主控板 Replace the power detection optocoupler or replace the main control board</p>
<p>开机后，给定指令，执行机构不动作 Upon start and issuing command, the actuator has no</p>	<p>“全开位置”和“全关位置”数据相等 “Open position” and “Closed position” are equivalent.</p>	<p>进入设置菜单检查数据，并修改。 Enter into the setting menu, inspect and revise the related</p>



operation.		data.
	电机绕组烧毁 The motor winding is burnt out.	更换电机或维修 Replace or repair the motor.
	电机超温保护 The motor suffers from over temperature protection.	电机降温 Cool down the motor.
	开限位、关限位 Limit switches in open/close direction.	反向运转后正常 Operate reversely and become normal.
	开向过力矩、关向过力矩 Over torque in valve opening/closing direction.	反转解除过力矩 Rotate reversely and contract with the excess torque.
手动操作时执行机构不动作或很难动作 In the manual operation, the actuator has no operation or suffers from operation difficulty.	传动轴承卡涩 The transmission shaft is blocked.	维修或更换 Repair or replace
	阀杆和执行机构输出轴不同轴 Valve stem and actuator's output shaft are not co-axial.	维修或更换 Repair or replace
	阀门卡涩或损坏 The valve is blocked or damaged.	维修或更换 Repair or replace
	传动齿轮没有润滑 The transmission gear isn't lubricated.	进行加油润滑 Add lubricant
电机工作时，阀门不动作 In the normal operation of motor, the valve has no operation.	传动齿轮脱离或损坏 The transmission gear is stripped or damaged.	维修或更换 Repair or replace
	电机轴承损坏或卡涩 The motor shaft is blocked or damaged.	维修或更换 Repair or replace
	阀门卡涩或损坏 The valve is blocked or damaged.	维修或更换 Repair or replace



Intelligente Engineer Solutions

	阀门轴、阀杆的驱动螺母损坏 The driving nut of valve shaft and valve stem is damaged.	维修或更换 Repair or replace
--	--	----------------------------

7 相关测试报告/ Related test reports:

7.1 EMC 测试报告 A/ EMC test report A

		中国认可 国际互认 TESTING CNAS L15507	
			Page 1 of 42
<h1>Test Report</h1>			Verified code: 758833
Report No.: E202312152831-2			
Customer:	CHEMSUN EUROPE GMBH		
Address:	Schumannstr. 156,63069 Offenbacham Main, Deutschland		
Sample Name:	G01 Electric Actuator		
Sample Model:	CSR/L-G01		
Receive Sample Date:	Dec.20,2023		
Test Date:	Dec.24,2023 ~ Dec.28,2023		
Reference Document:	<p>CISPR 32:2015-Information technology equipment-Radio disturbance characteristics-Limits and methods of measurement EN 61000-4-2:2009-Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test EN 61000-4-3:2010-Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test IEC 61000-4-6:2013-Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances induced by radio-frequency fields tests IEC 61000-4-11:2004-Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests</p>		
Test Result:	Pass		
Prepared by:	Wang Kunkun	Reviewed by:	Li Rongyue
	Wang Kunkun		Li Rongyue
		Approved by:	Wu Qiong
			Wu Qiong
			
			GRG Metrology & Test Beijing Co., Ltd.
			Issued Date: 2024-01-08
			Address: No.8, LiangshuiheErjie, Economic Development Area, Beijing, China
			Tel: 010-60936200 FAX: 010-60936300 Web: http://www.grgtest.com
			
			

7.2 EMC 测试报告 B/ EMC test report B

		中国认可 国际互认 检测 CNAS L11507		Page 1 of 26
Test Report			Verified code: 163309	
Report No.: E202312152831-4				
Customer:	CHEMSUN EUROPE GMBH			
Address:	Schumannstr. 156,63069 Offenbacham Main, Deutschland			
Sample Name:	G01 Electric Actuator			
Sample Model:	CSR/L-G01			
Receive Sample Date:	Dec.20,2023			
Test Date:	Dec.29,2023 ~ Dec.29,2023			
Reference Document:	<p>IEC 61000-4-4:2012-Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test IEC 61000-4-5:2014-Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge Immunity immunity test IEC 61000-4-8:2009-Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test</p>			
Test Result:	Pass			
Prepared by:	<u>Wang Kun Kun</u> Wang Kunkun	Reviewed by:	<u>Li Rongyue</u> Li Rongyue	Approved by: <u>Wu Qiong</u> Wu Qiong
GRG Metrology & Test Beijing Co., Ltd.				
Issued Date: 2024-01-08				
GRG Metrology & Test Beijing Co., Ltd. Address: No.8, LiangshuiheErjie, Economic Development Area, Beijing, China Tel: 010-60936200 FAX: 010-60936300 Web: http://www.grgtest.com				
				 

7.3 安规测试报告/ Safety testing report:



Fanguang Inspection & Testing Co., Ltd.



中国认可
国际互认
检测
TESTING
CNAS L9002

Page 1 of 89

Report No.: S20220919293001

TEST REPORT		
Application No.: S202209192930		
Applicant's name: CHEMSUN EUROPE GMBH		
Applicant's address : Schumannstr.156,63069 Offenbach am Main, Deutschland.		
Sample description : G01 Electric Actuator		
Model: CSR/L-G01		
Date of receipt of test item: 2023-05-23		
Test location: No.163, Pingyun Road, HuangPu West Avenue. Tianhe District, Guangzhou, Guangdong, China		
Test standard: EN 61010-1:2010, EN 61010-1:2010/A1:2019		
Test standard: Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements		
Test date(s): 2023-06-05 to 2024-02-01		
Test result: The test results are in compliance with the above mentioned standards		
Date of issue: 2024-02-05		
Tested by: Bill Luo	Reviewed by: Jun Yang	Approved by: Shi Quanwei/Deputy Manage
<i>Bill Luo</i>	<i>Jun Yang</i>	<i>Shi Quan wei</i>
Other aspects: /		
Abbreviations: P = passed; F = failed; N/A = not applicable		



7.4 防爆认证/IECEX Certificate of Conformity:

	<h3>IECEX Certificate of Conformity</h3>		
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres <small>for rules and details of the IECEX Scheme visit www.iecex.com</small>			
Certificate No.:	IECEX PRE 21.0023X	Page 1 of 4	Certificate history:
Status:	Current	Issue No: 0	
Date of Issue:	2021-11-10		
Applicant:	Chemsun Europe GMBH Schumannstraße 156 63069 Offenbach am Main Germany		
Equipment:	Electric Actuator		
Optional accessory:			
Type of Protection:	Ex db		
Marking:	Ex db IIC T6/T5 Gb -40 to 70°C/-40 to 80°C		
Approved for issue on behalf of the IECEX Certification Body:		Bjorn Spongsveen	
Position:		Certification Manager	
Signature: (for printed version)			
Date:		2021-11-11	
<ol style="list-style-type: none">1. This certificate and schedule may only be reproduced in full.2. This certificate is not transferable and remains the property of the issuing body.3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.			
Certificate issued by: DNV GL Presafe AS Veritasveien 3 1363 Høvik Norway			

7.5 中国国家强制性产品认证证书/ CCC Certification



中国国家强制性产品认证证书

证书编号: 2022332307000215

委托人名称及地址

Chemsun Europe GMBH (凯姆斯欧洲有限责任公司)
Schumannstraße 156, 63069 Offenbach am Main Germany (舒曼大街 156 号, 63069 奥芬巴赫, 德国)

生产者 (制造商) 名称及地址

Chemsun Europe GMBH (凯姆斯欧洲有限责任公司)
Schumannstraße 156, 63069 Offenbach am Main Germany (舒曼大街 156 号, 63069 奥芬巴赫, 德国)

生产企业名称及地址

北京凯姆斯智控科技有限公司
北京市大兴区长子营镇长恒路 20 号院 11 号 1-4 层

产品名称、型号及规格、防爆标志

智能型电动执行器
CSR/L-G01、Ex d IIC T6/T5 Gb
(产品相关信息见附页)

产品标准和技术要求

GB 3836.1-2010; GB 3836.2-2010

上述产品符合强制性产品认证实施规则 CNCA-C23-01: 2019 的要求, 特发此证。

签发日期: 2022-04-28

有效期至: 2027-04-27

首次发证日期: 2022-04-28

本证书的有效性依赖发证机构的定期监督获得保持。

本证书的相关信息可通过国家认监委网站 www.cnca.gov.cn 查询。



签发:



中创新海 (天津) 认证服务有限公司

022-26651066

中国·天津市丁字沽三号路85-1号 300131

<http://www.pcec.com.cn>

F 0005402

本操作手册由北京凯姆斯智控科技有限公司摘录和译制，最终解释权归我公司所有。如有问题请及时与我们联系，如有改动恕不另行通知！

The operation manual is extracted and translated by Beijing CHEMSUN intelligent controls Co. Ltd., and the final interpretation right belongs to us. Please contact us whenever you encounter any problem; we reserves the right to change the above statement without prior notice!

CHEMSUN EUROPE GMBH

Add: Schumannstr. 156
63069 Offenbach am Main, Germany
Fon: +49(0) 69 759 8636
Fax: +49(0) 69 759 8636-88
URL: www.chemsun.de
Email: sales@chemsun.de

北京凯姆斯智控科技有限公司

地址: 北京市大兴区长子营镇长恒路 20 号院 11 号
电话: + (86) 10 56370175
传真: + (86) 10 87582920
网址: www.chemsun.com
邮箱: sales@chemsun.com