

compax-s manual

COMPAX-M /-S (L)

HAUSER

COMPAX User Guide

Compact Servo Controller



From software version V6.26

August 2006



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COMPAX-M /-S (L) HAUSER
COMPAX User Guide
Compact Servo Controller CE



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Please check your inbox, and if you can't find it, check your spam folder to make sure it didn't end up there. Please also check your spam folder. This memory is unaffected by mains power failure. If you encounter problems of this kind, contact HAUSER. However, hazards may occur if the unit is employed incorrectly or for improper use. Energized, moving or rotating parts can This unit automates motion processes. The ability to switch several units at once makes it possible to combine several motion processes. Reciprocal interlocks must be installed in such cases. Please note in particular the functions contained in the startup manual relating to operational readiness and emergency stop. The unit carries voltages ratings of up to 750V, which could fatally injure the operator. We cannot assume any responsibility for any other methods used for securing the units. If you do not have an Internet browser on your computer, please install a version the software is usually available to download free of charge. In addition to this, when switched on, all parameters apart from bus settings P194, P195, P196 and P250 are set to their default values. However, operating voltage is not present. Flow chart The filtering can be executed once for the entire system or as separate process for each unit. The units are coupled with one another with flatband cables see below. These are arranged behind the front plate cover of the power unit and the drive controller. The connection assignment complies with the specifications for 2 cable remote bus. These cables are included with the drive controller. The connectors which receive these connection cables are housed under the front plate cover of the mains module and the drive controller. The short circuit connector order No. 102908000 is included with the mains module. Open the front cover upper section of front side by loosening the top right knurled screw and wire up the following If not, do not wire. http://asfalon.com/_files/exploring-countries-and-cultures-teacher-s-manual.xml

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COMPAX User Guide

Compact Servo Controller



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A separate heat chamber is created between the installation plate and the rear wall of the control cabinet. The angles required under designation MTS2 must be complied with. The bus connections are made via the mains module. The capacity and storable energy is Otherwise, do not wire up. The capacity and storable energy is Output X4 is protected from short circuits. Retaining screws 4 M6 hexsocket head screws. There are 2 screws on both the upper and lower sides of the unit. Otherwise, do not wire up. The limitation capacity and storable energy is The output is protected from short circuits. Otherwise, do not wire up. The limitation capacity and storable energy is Output X4 is protected against short circuiting. This closer establishes sequential switching for the mains module and the axis controller. When the unit is operating correctly, the contacts are closed P and S are connected and thereby indicate the readiness of the unit. If an error occurs or if the drive system is switched off, the readiness is not displayed and the chain is interrupted see below. In accordance with the safety chain described above, this input must be activated to power the motors. The current command is interrupted. Compact Servo Controller. From software version V6.26 Subject to technical modification. Data correspond to the state of technical development at the time of printing. Parker Hannifin GmbH. EMD Hauser. P. O. Box 776071720. RobertBoschStr. 22. D77656 Offenburg, Germany. FaxParker Hannifin plc. Electromechanical DivisionPoole, DorsetNMD connector assignment. 23. COMPAX 35XXS unit features.26Connector assignment COMPAXM. 21Overview of unit technology. 15. Plug and connection assignment COMPAX 35XXM. 26. Installation and dimensions of COMPAX 35XXM. 27. Wiring COMPAX 35XXM. 28Connector assignment COMPAX 1000SL overview. 42. Mounting and dimensions COMPAX 1000SL. 43. Connections to the motor.46COMPAX 25XXSspecific technical data. 32. Connector assignment COMPAX 25XXS. <http://qigong.ru/userfiles/exploring-chemistry-laboratory-manual-10th-edition.xml>

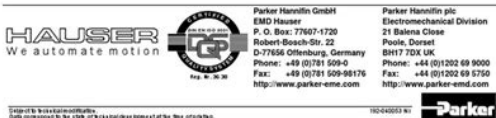
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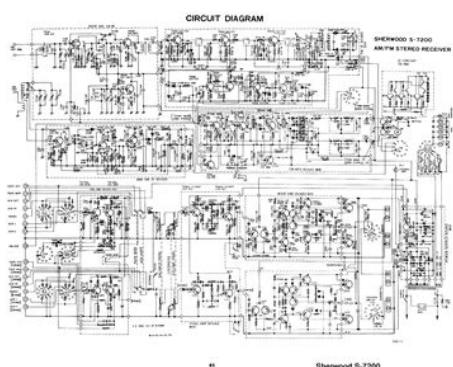
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Despite all efforts on our part, software modifications may change procedures asPlease notify us immediately if you detect unexplainable problems when using aGeneral dangers when safety instructions are not complied with. The unit described contains leading edge technology and is operationally reliable. However, hazards may occur if the unit is employed incorrectly or for improper use. Energized, moving or rotating parts canProper use. This unit is designed for use in high voltage units VDE0160. This unit automatesReciprocal interlocks must be installed in suchThe unit must be operated by skilled staff only.This applies to all tasks relating to setup, startup,

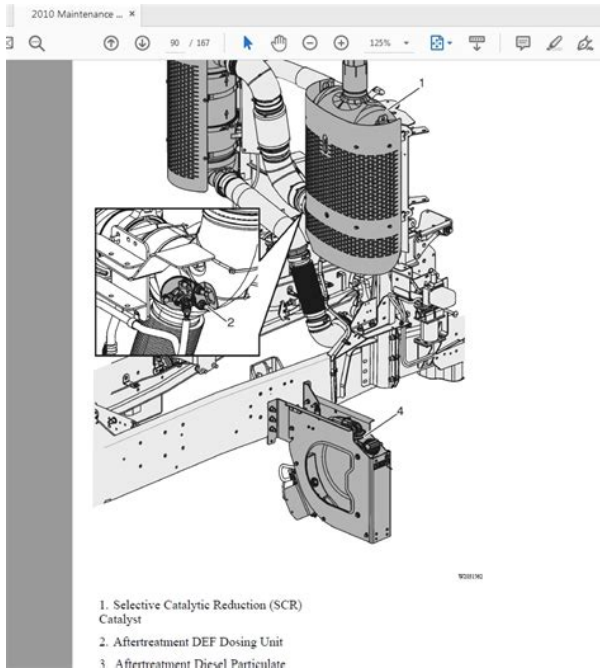
configuration, programming andPlease note in particular the functions contained in the startup manual relating toThe User Guide must be present at the unit at all times.Check the arrangement of unit and documentation.The unit carriesThe unit must not be opened. Do not make any alterations to the unit, except for those described in the User. Guide.We cannot assume anyIn order to check hardware and software compatibility, it is necessary for COMPAXOn the accompanying CD, you will find all instructions for COMPAX and the. If you do notUse Language selection top right in window to select the language required. Follow the CD instructions shown on the window in the center of the screen. Use the list on the lefthand side to select the required instructions or software.When supplied, COMPAX is not configured.In addition toP195, P196 and P250 are set to their default values.Meaning of LEDs on the front panelError. ColorMeaning, when switched onCOMPAX Error E1.E56 present or COMPAX isMains moduleErrorReadyPossible errorsHeat sink temperature too high orEmergency stop is activated and ready contact isBallast switching unit overload orPer group of 4, max. 0.8A; taking due account of 1.



<http://www.raumboerse-luzern.ch/mieten/boss-cx150-manual>

If overload occurs, an error message appears E43 can be acknowledged withFor reasons of interference protection, we would recommend that you use aWith COMPAX 1000SL, the screen is connected with the SubD housing. A protective connection is required when there is inductive load present.Connection assignment on X17Sig. E1Sig. MNSig. E2Connection planGround 24V Initiators supplyThe option D1 cannot be used for COMPAX 1000SL. This option provides you with two additional analogue output channels with aUse the parametersTo obtain output from the measured signals, you will need an externally connectedThe signals are fedMeaning and range of values of P71 P74. No.Gain factor from channel 0. Gain factor from channel 1. Measuring parameter of channel 0. For the meaning, seeMeasuring parameter of channel 1. For the meaning, seeRangeThe measuringRx.D. TxDRxD 2. Tx.D 3OptimizationApply screen on both sides to surface.Interfaces. The option A1 cannot be used for COMPAX 1000SL.StatusCable planInterfaces. Startup manual. X13 Encoder interfaces,.Encoder interfacesThe encoder interfaces are available as options for COMPAX excluding COMPAXThe necessary options are described on. Page 179. Encoder interfacesThis can be configured either as the encoder input or encoder simulation. Assignment onConnector X13DesignatFunction with encoder inputChannel 2 zero impulse. Channel 2 track B. Channel 2 track A. Channel 1 zero impulse. Channel 1 track B. Channel 1 track A. Channel 2 zero impulse inverted. Channel 2 track B inverted. Channel 2 track A inverted. Channel 1 zero impulse inverted. Channel 1 track B inverted. Channel 1 track A inverted. Reference point. SubD socketScrewsXX6X or COMPAX XX70. EnableLeakage current. The leakage current current on the mains PE is mainly causedAdditional leakage current occursThe size of the leakage current depends on the following factorsThe leakage current is very important regarding safety whenPlease note.

<http://icmonteodorisio.com/images/case-ez-adjust-clutch-manual.pdf>



The unit must be operated with an effective earth connectionThe Servo booster must not be operated with a fault currentIf an FI circuit breaker is installed, it must not interrupt theCOMPAX contains all theThese functions areYou will need auxiliary equipment PC, handheldCOMPAX is very flexible and offers all the advantagesInterfaces. OptimizationPositioning andConfiguration. Technical data. Controller. Parameter. Servo. Error list. Compact. ConnectorUnitOverview. Operating InstructionsInterfaces for data and status. PLC data interfaceCOMTAC from Hauser. Query the most important status values. Setting the most important parametersFunctions. Status queries. Setting parameters Direct commands. Programming. Controlling. Actual values. ConfigurationDiagnostic values. OptimizationStart, Stop, Break. Device IDs. General settingsMachine zero, real zero. Teach real zero, program lineSettings,Travel commandsMotor. SetpointPositionRotational speedCurrent Output stageServo controlInterfaces for signals. Override input. Absolute encoder. Encoder input. Encoder emulation. Externally controlledSynchronizationOutput ofConnector. Explanations for the block structure. Interfaces for data and status. Configuration. Inputs. I1.I6 control functions or freely assignable. I7.I16 freely assignable or programmable. Outputs. O1.O6 control outputs or freely assignable. O7.O16 freely assignable or programmable. Positioning andBinary inputs andAll functions are available via the bus interface Interbus S, Profibus, CAN bus. A description isFunctions. Query status. The status can be queried via the PLC date interface, the bus interface andSettingProgramming dataControlling. Interfaces. General settings. Via the uncoupled stiffness, damping and advance control parameters. Replacement and specification values,Optimizing. Operating mode, units for travel data, motor types, ramp shapes, directions, driveProgramming a sequential program with up to 250 data records.

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Functions manual mode, start, stop, break, teach functions. Messages no fault, no warning, machine zero has been approached, ready for Program control external data record selection, analyzing binary inputs, setting Status. Configuring. Optimization Bus systems. All functions are available via RS232. System controller. Function monitoring and coordination. Control. Digital control with robust control loops. Automatic calculation from existing design POSA, POSR, SPEED, ACCEL, GOTO, VP, modifying parameters P1.P49, Error list. PLC data interface. Unit Overview Password protection. Interfaces for Override input. Analogue input see Startup manual for continual reduction of the set speed. Absolute value This option supports an absolute value sensor attached to the motor; reference HEDA option. Real time data channel Encoder input. Accessories and options. Encoder simulation. The actual position value can be made available to other units via this channel see. Startup manual and Accessories and options. COMPAX contains password protection to prevent unwanted data manipulation. Before you configure COMPAX or set your parameters, you must enable these When the axis is at standstill, proceed as follows to Deactivate Protected All parameters, except P40P49, are protected by password. Note! Conditions for password input The COMPAX program is not protected by a password. Using the COMPAX front plate, you can query particular status values and perform Also whenever an error occurs, COMPAX shows Enter. Positioning and Cparameter. Enter. Enter Cparameter Cparameter Enter. Enter Cparameter. Optimization Status Enter Status Status Configuration Baud rate Power on. Power on. Power on C parameters Meaning of the Interfaces. The following status values can be displayed via the front plate. S03S08, S11, S19S26 hexadecimal display, S27, S30, S31, S37S39 The remaining status values can be queried via the interfaces. Please see operating instructions for the bus option used for the relevant Acknowledging Status.

Querying status Technical data. Once you have rectified the cause of the error, you can acknowledge the error by Front plate operation not available with COMPAX 1000SL.

Unit Configuration Configuration when supplied When supplied, COMPAX is not configured. In addition to P195, P196 and P250 are set to their default values. Controller Power on with To operate the COMPAX controller design concept, you must have a basic level of COMPAX calculates the internal system and A strong controller design obviates the need for tedious controller optimization. This configuration provides you with a stable controller. If the control process is unstable because

COMPAX has been incorrectly configured. Once you have correctly configured COMPAX or you have corrected the relevant switching off, modifying the COMPAX configuration is carried out using parameters as follows. From the next page, there is a clear description of the configuration process. If this process is followed, you can specify all the parameters. Note that once a configuration has been set or modified, you must secure the displacement area of your system when unit optimization. Please mind the limit values of the mechanical component! Defiance of the limit values may lead to destruction of the positioning and power on for configuration. The configuration parameters are not accepted directly once they have been set. The ServoManager automatically sets the parameters as valid after connector. Safety instructions for initial startup. Risks from incorrect wiring! In order to avoid the risks from incorrectly wired systems during initial startup, use interfaces. If this travel operation is executed correctly, then P15 and P16 can be reset to their parameter status. The following faults may occur. In both cases, either error E10 or error E54 is triggered. If error E54 occurs, the drive is switched off. A possible cause of the error is incorrect wiring in the motor or resolver systems. Configuration parameters operating mode. Parameter P93 valid from next move command.

<http://www.uvhk.com/wp-content/plugins/formcraft/file-upload/server/content/files/16284718c1c9f6--bundler-v04-user-s-manual.pdf>

Normal mode. Positioning processes refer to real zero. Various machine zero modes are described from Page 80. Continuous positioning processes always refer to the relevant start position. Operation with absolute value sensors is not permitted when working in speed controller. In this operating mode, the drive controller operates as a speed controller, the following applies. Parameter P90. Increments. The levels of accuracy are not increased. This corresponds to a resolution of 16.65 536 increments per motor. P83 influences the resolution and also the max. configuration. Connector. This corresponds to 61. The maximum travel distance can be increased by reducing P83. Meaning. In continuous mode, this limitation applies to a single command. In normal mode, this limit applies to the entire displacement area. Basic conditions. Ramps. Parameter P94. Simplest, time-oriented function; not smooth. Parameter P100. The motor parameters are required for COMPAX motor-specific settings. The motor parameters of the HAUSER motors recommended for COMPAX are. The nominal currents of the motors and units must be adapted. If you are using nominal currents which are smaller in relation to the unit status parameter. Current requirement 1 times motor type. Unit configuration. Operating instructions. Configuration parameters. The mechanics are subject to minimum load when using the smooth function. Current required 1.9 times gentle running in to the nominal value; overruns are prevented. Current required 2 times acceleration. Transfer of P94. Modifications to P94 become effective from the next move command. Exception. For the functions. Drive type. Parameter P80 select drive type. Various data are required for additional configuration depending on the drive type. Continue configuration with the drive type selected. Spindle drive. P81 length. P82 diameter. P83 Pitch. Range 0. 5000mm. Diameter of spindle. Range 8. 80mm. Pitch per spindle revolution. Range 1. 400mm. Connector. P82 Number of. Range see tooth pitch.

P83 tooth pitch. Distance between two teeth. The range of values for the number of teeth and tooth pitch is determined by the range of pitch values 1. 410 mm. Moment of inertia of transmission and clutch referenced to motor shaft. Range 0.200kgcm². P92 minimum. P88 maximum. Range 0.500kg. General drive. Optimization. P84 moment of. Range motor transmission 1 11.100 1001. P85 ratio. P81 Minimum. Total minimum moment of inertia motor, transmission and load referenced to the. P82 maximum. Total maximum moment of inertia motor, transmission and load referenced to the. Range P81.200 000kgmm². P83 travel per. Positioning and. Range 0.500kg. P88 Maximum. Range 0. P88. P92 Minimum mass. Moment of inertia of transmission and clutch referenced to the drive side. P84 moment of. Range 1 11.100 1001 motor transmission. P85 ratio. Unit configuration. Configuration parameters. Reference. Parameter P213 direction of machine zero. Standard reference system no end

or reversing initiators; one machine zeroThe machine zero initiator must be attached so that it can only cleared in oneUse parameter P213 to inform COMPAX of the side on which the MZ13 machineThe machine zero initiator is approached with the motor turning clockwise whenThe machine zero initiator is approached with the motor turning anticlockwise. Setting aid. The following basic setting applies for this standard reference system noYou will find otherSpecifyingSpecify the software end limits of the displacement area by using parameters P11If this is not the case, error E25 is reported. When working in continuous mode, these limits always apply for the currentP11 maximumP12 minimumSpecifying pointP1 point of realP215 directionSetting aid. Absolute positioning commands refer to RZ. RZ is specified relative to machine zero. P1 must be set to 0 in continuous mode. P215 establishes the positive direction of travel positive end of displacement areaIf this is not the case, then P215 must be modified.

P215 has no influence on the setting of the machine zero direction P213; ifA3 is set, when. Pos 1Pos 2. Pos 3P161 from one another to ensurePos 4Renewed referencing find machineS12 is copied after Power On,ConditionEnsure thisMaximum angleP161 gives the maximum permissible angle difference between the saved and theIf P161 is exceeded, then a new reference is necessary find machine zero. NoteUnitConnector. Activated with. Absolute value function without special sensor for up to 4096 rpm. Positioning andOptimizationAbsolute value function with standard resolver. Travel from POSA 0. POSA 4095.9999 possible without value sign conversion.Parameter. In addition, a value sign conversionWith knowledge of this relationship, it is possible to create a positive travel area ofError list. Value range S12Operating Instructions. Machine zero modeOverview. P212 setting the machine zero modeP212 becomes valid immediately after a modification. Function of the machine zero mode. Machine zeroExample of aI1 and I2 act as reversing. Application. P213 defines the initiator flank of the machine zero Linear movementsP3 the prefix defines the start search direction. P215 influences the start search direction duringP29 shifts the actual machine zero in the directionP216 sets the limit switch positionReal zero is defined with reference toUnitConfigurationOptimizationStatusInterfaces. The speed used for find machine zero is specified by P3; the accelerating andParameter. MovementPositioning andReal zero. Machine zero mode. Additional machine zero modes. The machine zero modes described below are all used without reversing initiators. The search direction and the evaluated initiator side are influenced as follows withP213 defines the start search direction and if there is an initiator fitted the initiatorP3 no influence in the start search direction during find machine zero. P215 no influence on find machine zero.

P29 shifts the actual machine zero in the direction of the clockwise rotating motorMachine zeroFind machine zero. Standard machineMNIni.MNIniThe actual machine zero MZ resultsPositioning andOptimizationP29 shifts the actual machine zero inStatusP29 shifts the actual machine zero inParameterThe machine zero initiator MZINI isTechnical dataShifting machineConnector. Machine zeroFind machine zeroApplication. General rotatoryConditions forSpecify P98 travel per encoder revolution, P214 encoder direction and P143Find machine zero.MNIniApplication. Linear and rotatoryIf you have an encoderMNIniExample of anPositioning andUnitConfiguration. Machine zeroConnector. OptimizationSpecify P98 travel per encoder revolution, P214 encoder direction and P143InterfacesParameter. Conditions forError list. If P750 for this setting, external position localization is switched on. General rotatoryThis is a simpleMachine zeroFind machine zeroMNIniMNIniApplication. Linear and rotatoryIf you have an encoderExample of anAccuracy depends onThe 3rd resolver zeroFunction. Supplement. With P202, the distanceP202 unitWiring upTeach machineUnitCondition. ConnectorA machine zero initiator is not required with this method. Via parameter P29, machine zero can be moved from the taught point by up toThe drive then executes machine zero travel from the currentRange of values for P29 0.360 degrees other values are considered as 0.Configuration. Linear movements. No need for a machineParameter. Find machine zero. Positioning andError list. Machine zeroOptimizationMachine zero mode.

Configuration Machine zero mode. Machine zero initiator Application Applications with belt drives where the belts may skip during operation. The displacement area is limited by the initiators attached at both ends of it. When In other machine zero modes, the initiators can be switched to end initiators by. When one of the two limit switches is reached, COMPAX responds with an Limit switch Bit 2 P217.

Initiator I1 is assigned the direction of motor rotation using P216. Unit Clockwise rotation defined when looking at the motor shaft. When operating with the reversing initiators, but no limit switches, an error You then have two options Setting aid. Status Interfaces. Response when the Optimization Regardless of the search direction P213, both limit switches are monitored. Limit switch Connector.

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