

Honeywell CCR 30s

Constant Current Regulator for AGL Series Circuits

Application

The digital constant current regulator CCR 30s is used to supply, control, and monitor constant current series circuits of airfield ground lighting systems.

The microprocessor compares the actual current value of the series circuit with the target value of the selected current step and calculates pulse width modulation to control IGBT module which adjusts the primary voltage of the power transformer.

Compliance with Standards

- EN 50490 (VDE 0161-106)
- CAO Aerodrome Design Manual, Part 5 (current edition)
- FAA AC 150/5345-47 (current edition)

Main Features

- Extensive control, monitoring, and protection functions for AGL series circuits with LED or halogen lamps
- Lockable housing with safety door switch and optional castors
- Eight freely adjustable current steps (1.3 A to 6.6 A) for configuration according to IEC, FAA, or customer specifications
- Power Factor >0.9 for all current steps
- Optional circuit cut-out system for safe maintenance
- Parallel or serial control of the CCR
- User-friendly configuration/calibration by use of CCR's function keys and display (no further equipment required)
- Storage of settings, configuration, and calibration data on replaceable Datakey®
- Continuous indication on CCR's display: Status, current step, output current, operating hours
- Menu languages: English or German (others on request)
- Unrestricted operation with circuit selector switches and individual lamp control and monitoring (e. g. Honeywell SLCM) Microprocessor- driven devices

Standard Functions

Types and Current Steps

- Output current freely adjustable between 1.3 A and 6.6 A for all current steps
- Compliance with Standards
- IEC: EN 61822 (current edition)
- FAA: AC 150/5345-10 (current edition)
- ICAO: Aerodrome Design Manual, Part 5 (current edition)
- FAA class 1, style 1 / 2 (three / five steps)
- IEC style 1 / 2 (three / five steps)
- Eight steps according to customer specifications



- Over Temperature Protection

Configuration and Calibration

- Menu-driven by function keys and display
- Storage of modified parameter on Datakey®

Monitoring Functions

- Actual current value (output current = selected step current)
- Open circuit trip (actual current drop-out, $I = 0$)
- Overcurrent trip ($I > I_{nom}$)
- Low mains voltage (shut-down when mains voltage < 80 %, re-start when mains voltage > 90 %)

Fail Safe Operation

- Storage of latest current step command at mains failure
- Continuation with pre-defined or latest current step

Measurement and Indication Function

- CCR's operating mode and status
- Selected current step
- Output current (effective value)

Parallel Feedback Signals

- Operation
- Local control

Optional Functions

Serial I/O Interface (SIO, Ethernet)

- Redundant serial control and monitoring by a control and monitoring system (CMS) via Ethernet
- Feedback signals according to FAA or IEC
- Mixed serial/parallel operation is possible

Single Lamp Control and Monitoring (SLCM)

- Control and monitoring of individual lamps and sections of a series circuit by means of Honeywell SCC-V3 and SIO PCB

Lamp Failure Monitoring (LAF)

- Quantitative detection and indication of defective lamps
- Automatic calibration for all current steps
- Two freely configurable failure thresholds
- Insulation resistance of the series circuit (IRMS)
- Input current of CCR
- Input power of CCR

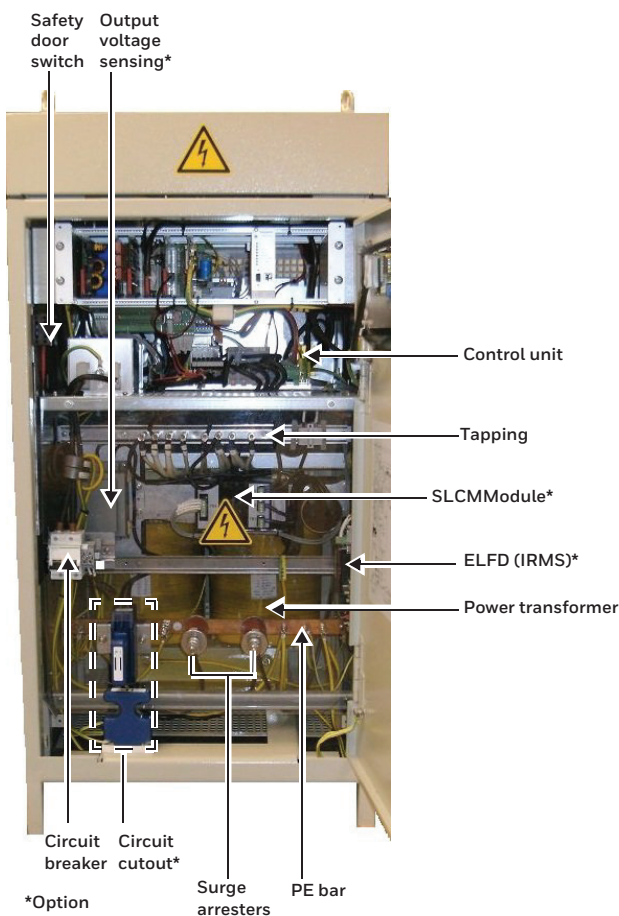
- Power factor of CCR
- Output voltage and output power of power transformer
- Primary voltage of power transformer (adjustment of CCR's operating point)

Circuit Cut-Out System

- Reliable cut-out switch for safe maintenance operations
- Disconnects the CCR from the series circuit
- Shorts the output of the CCR and the input to the series circuit
- Grounds the series circuit

Measurement and Indication Functions (only with SIO)

Mechanical Design



Maintenance-Free Housing

- Lockable sheet steel housing with optional castors
- Safety door switch switches off the CCR when door is opened

Operating Panel

- Operating mode selector switch (remote, off, local)
- Status LEDs (remote, local, fault, warning)
- Display (vacuum fluorescent display)
- Four function keys

Control Unit

- Motherboard
- Processor board
- Power supply board
- Optional:
 - Parallel I/O board
 - Serial I/O board (SIO)
 - IRMS interface
 - SCC/V3 Module for Single Lamp Control

Power Components

- IGBT module
- Load contactor
- Surge arresters
- Power transformer

Technical Data

ELECTRICAL DATA	
CONTROL VOLTAGE	18-60 VDC (120 V on request)
CONTROL VOLTAGE FROM CCR	+24 VDC / max. 250 mA
FREQUENCY (AUTOMATIC DETECTION)	50 / 60 Hz
EFFICIENCY	> 92 %
POWER FACTOR	≥ 0.9
• 2.5 / 5 / 7.5 / 10 KVA:	≥ 0.9
• 15 / 20 / 25 / 30 KVA:	≥ 0.95
ABSOLUTE ACCURACY	< 1 %
REPEATABILITY	< 1 %
RUN-UP TIME AFTER START-UP	max. 500 ms
REGULATION TIME AT STEP CHANGE (1-100 %)	max. 500 ms
NOMINAL SERIES CURRENT IEC / FAA CLASS 1:	6.6 A (+ 1 %)
WAVE FORM OF SERIES CIRCUIT CURRENT	Sinusoidal
ELECTROMAGNETIC COMPATIBILITY	Acc. to EN 61822 chapter 5.4
PROTECTION RATING	IP 20

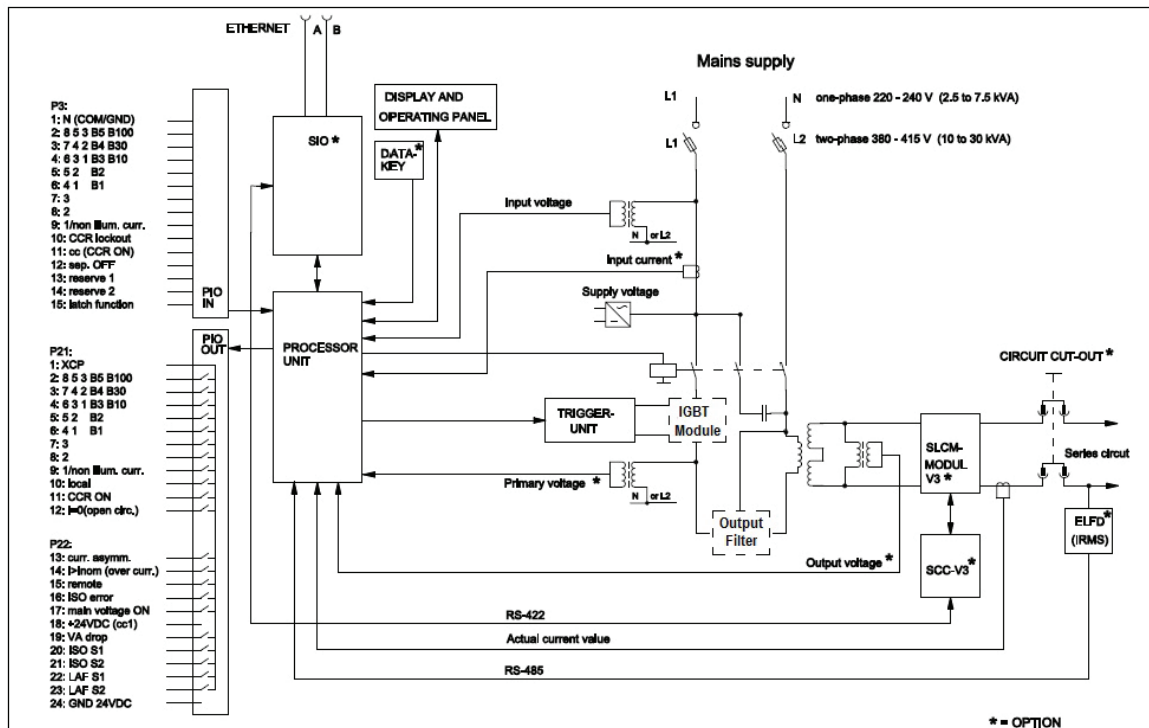
Power Ratings (Phase/Neutral)

MAINS POWER	2,5 KVA	5 KVA	7,5 KVA
220 V	13 A	25 A	38 A
230 V	12 A	24 A	36 A
240 V	11 A	23 A	35 A

Power Ratings (Phase/Neutral)

MAINS POWER	10 KVA	15 KVA	20 KVA	25 KVA	30 KVA
380 V	29 A	44 A	58 A	73 A	88 A
400 V	28 A	42 A	56 A	69 A	83 A
415 V	27 A	40 A	54 A	67 A	80 A

Principle Design



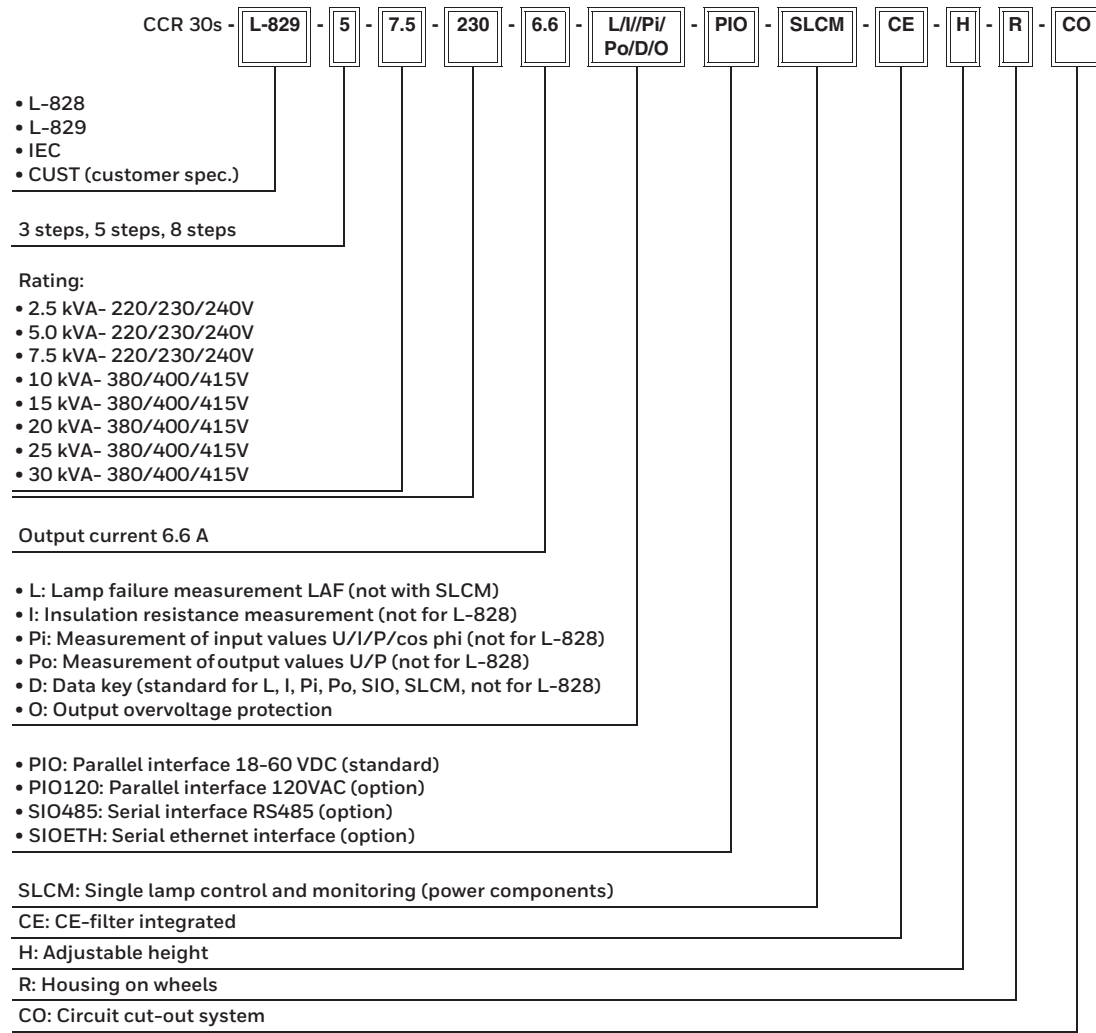
Ambient Data

TYPE	ORDER NO.
OPERATING TEMPERATURE:	-40 °C to +55 °C
STORAGE TEMPERATURE:	-40 °C to +70 °C
RELATIVE HUMIDITY (NO CONDENSATION):	10 to 95 %
TRUE ALTITUDE:	2000 m

Dimensions and Weights

TYPE	ORDER NO.
DIMENSIONS (H X W X D MM)	1252 x 617 x 657
WEIGHT	
2.5 KVA:	168 kg
5 KVA:	187 kg
7.5 KVA:	211 kg
10 KVA:	231 kg
15 KVA:	285 kg
20 KVA:	305 kg
25 KVA:	324 kg
30 KVA:	347 kg
SHIPPING SIZE (H X W X D MM)	1302 x 670 x 700
SHIPPING WEIGHT	+ 6 kg

Ordering Information



For more information on these and other Honeywell Airport Systems products, visit

<http://www.honeywellairports.com>

Honeywell Airport Business

Americas

1985 Douglas Drive
North Golden Valley,
MN 55422-3992
Tel: 1.800.345.6770 ext.612

Europe & North Africa

Broedermannsweg 1,
22453, Hamburg,
Germany
Phone: +49 40 61144-0
Fax: +49 40 611 44-06

Middle East, Indian Subcontinent & Central Africa

Emaar Business Park Building 2, Level 2,
Office 201 P.O. Box 232362,
Sheikh Zayed Road
Dubai, UAE
Tel: +971 4 4540 685

Subject to alterations.