



Weaver

CONSTRUCTION MANAGEMENT

3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITTAL

May 1, 2012

Submittal No: 15058-001

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan
Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Kuck Mechanical Contractors, LLC.**
395 West 67th Street
Loveland, CO 80593
970-461-3553 Melanie Peterson

SUBJECT: Magnetic Starter @ P&D Building

SPEC SECTION: 15058

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES X NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver Construction Management and, unless indicated otherwise, has been found to be in conformance with the intent of the contract documents.

Contractor's Stamp:

Date: 5/1/12

Reviewed by: John Jacob

(x) Reviewed Without Comments

() Reviewed With Comments

Engineer's Stamp:

ENGINEER'S

COMMENTS: _____



395 West 67th Street
P.O. Box 388
Loveland, CO 80539-0388
Phone: (970) 461-3553
Fax: (970) 461-3443

DATE: 05/01/12
SENT TO: Weaver General Contractors
Attn: John Jacob
JOB: Harold D. Thompson WRF (#01135)
9001 Birdsell Rd.
Fountain, CO 80817

SUBMITTAL NO.: 00019
SUBMITTAL DUE:
PACKAGE: n/a

VENDOR NAME: CFM
SUBJECT: P&D Bldg. - Magnetic Starter
SPECIFICATION #: 15058

REVIEW DETAILS:

Review #: 1	Received: 04/13/12	Priority: Normal
Desc: P&D Bldg. - Magnetic Starter	Sent: 05/01/12	Status: Open
Reviewer: John Jacob	Returned:	Sepias: 0
Weaver General Contractors	Forwarded:	Prints: 0

Sent for the following action(s):

- For Approval**

 For Distribution

 For Your Use/Files

 As Req'd per

Action Needed:

Sincerely,
Teesa Vassar

Kuck Mechanical Contractors
395 W. 67th St.
Loveland, CO 80538



CFM COMPANY

AIR CONDITIONING / HEATING / VENTILATING EQUIPMENT

413 D North US Highway 287 • Fort Collins, CO 80524

Phone: (970)-493-7293 • Fax: (970)-493-7297



SUBMITTAL DATA

DATE: March 16, 2012

CFM COMPANY ORDER NO: 27120-EL

TO: Kuck Mechanical
Attn: Tom Wasmer
395 West 67th Street
Loveland, CO 80539

PROJECT: Harold D Thompson Pumping & Disinfection Building

LOCATION: Fountain, CO

ARCHITECT:

ENGINEER: GMS, Inc.

SUBMITTAL DATA ON THE FOLLOWING EQUIPMENT

MANUFACTURER	EQUIPMENT	SPECIFICATION SECTION
Indeco	Electric Heater	
Cerus	Magnetic Starter	15058
Greenheck	Sidewall Prop Fans	15800
Greenheck	Inline Centrifugal Fan	15800
Greenheck	Combination Louvers	15800
Greenheck	Stationary Louvers	15800

Equipment has not been released for production.

Thank you for doing business with CFM Company North, and if you have any questions or concerns, please feel free to contact me.

Eric Larsen

PLEASE RETURN ONE APPROVED SET OF THESE SUBMITTALS TO:
CFM COMPANY NORTH
413D North US Highway 287
Fort Collins, CO 80524



Date/Time Field	
Project	Harold Thompson Pumping and Disinfection
Contractor	Kuck Mechancial
Engineering Firm	GMS, Inc.

PRODUCT SUBMITTAL



BAS

Building Automation Starter

3Ø, 200~480VAC, up to 20HP
HOA Keypad with LED Pilot Lights
Superior Electronic Motor Protection



Special Instructions:

STANDARD FEATURES FOR BUILDING AUTOMATION STARTER:

HOA Keypad with LED Status Pilot Lights

- LEDs indicate Hand/Off/Auto modes, run and overload conditions

Voltage & Dry Contact Inputs for Auto Run Command

- Wire directly from the automation system to the starter, no interposing relays necessary
- Save on installation costs and increase reliability

Fireman's Override

- Initiates smoke purge sequence during emergency situations for safety and code compliance

Damper Control

- Interlocks damper with starter ensuring proper sequence of operation
- Prevents damage to duct work, saves energy from building heat loss
- Saves on automation panel points, reduces wiring, saves on installation costs

Wide Range Class 1-30 Electronic Overload

- Prevents ordering confusion and eliminates call backs due to mis-sized heaters
- Advanced protective features including anti-cycling, manual/auto reset, etc.

Flexible Control Transformer (CPT)

- Multi-tap CPT input accepts all common motor voltages
- Integrated secondary protection – no fuses required

High Reliability Contactors for Long Life

- 2.5 million contactor electrical cycles at full rated current
- 25 to 50% longer life than typical units

Combination Versions Include Disconnect

- Motor circuit protection disconnect provides branch & short circuit protection
- High interrupting ratings for maximum electrical system compatibility
- No fuses required – save time and money
- Lockable handle for safety



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Contractor

Engineering Firm

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Project	Harold Thompson Pumping and Disinfection
Contractor	Kuck Mechancial
Engineering Firm	GMS, Inc.

Specifications & Wiring Diagram

Starter Type

Building Automation Starter

Standard or Combination

UL Type 1 or UL Type 3R Enclosure

User Interface

Hand-Off-Auto keypad with LEDs

Watertight membrane

LED pilot lights

Hand, Off, Auto, Run, Overload

Standard Control Operations

Inputs	Protective Functions
Voltage Auto Run	Apply 12-120VAC/DC to energize
Dry Auto Run	N.O. dry contact closure
Fireman's Override	Apply 12-120VAC/DC to energize
Damper position switch	N.O. dry contact closure
Permissive Auto	N.O. dry contact closure
Shutdown	N.C. dry contact input
Overload Type	Electronic; IPt Thermal Trip Curve
Current Setting Range	0.3 - 1.5A, 1 - 5A, 4.4 - 22A, 8 - 40A, 16 - 80A
Trip Class	Class 1-30
Reset	Manual or Automatic
Phase Unbalanced	Trip within 3 seconds @ 70% unbalance
Phase Loss	Trip within 3 seconds
Stall Condition	Trip within 3 seconds @ 170% FLA
Cycle Fault	Trip if cycle rate exceeds 1200 starts per hour

Output

Damper motor control 24VAC, 1A max.

Operational

Power Fail Mode

- Restart last mode, no delay (default)
- Restart with delay
- Restart Off - LED flashes last mode

Mechanical

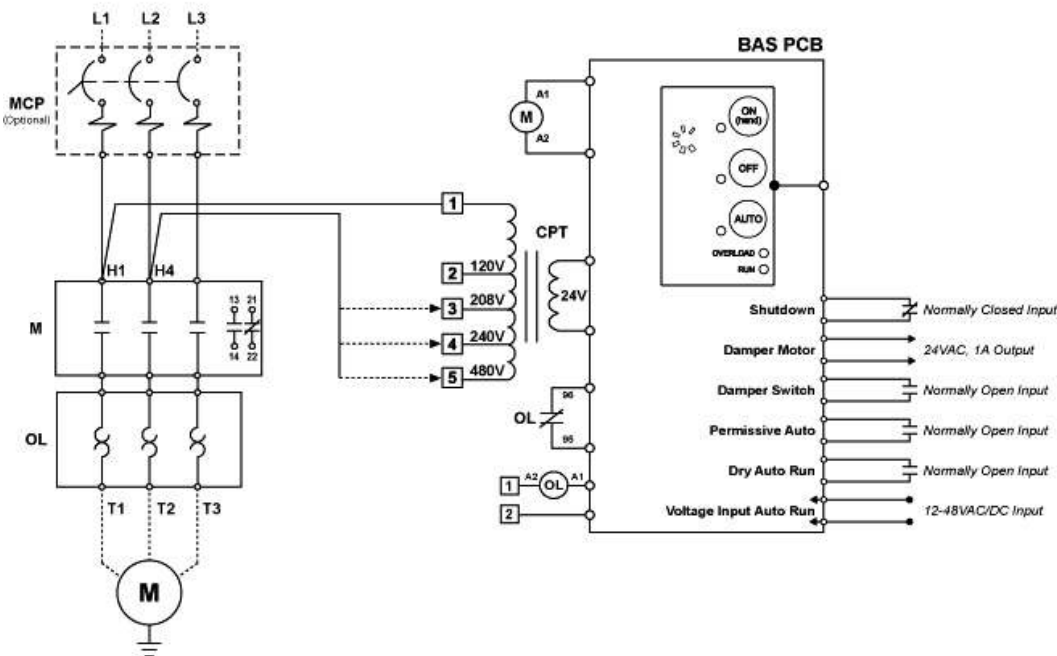
Enclosure types UL Type 1 or UL Type 3R

Environmental

Ambient Operating Temp -5° to 140° F (-20° to 60° C)

Ambient Storage Temp -5° to 185° F (-20° to 85° C)

Relative Humidity 5% to 95% non-condensing





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Kuck Mechanical	
GMS, Inc.	

Overload & 3-Pole Contactor Specifications

Contactor



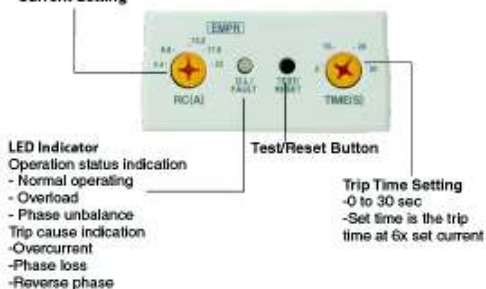
Overload

No. of CT	3CT	
Protection	Overcurrent	•
	Phase failure	•
	Stall	•
	Asymmetry	•
	Reverse phase	(Optional)
Current setting range (A)	0.3-1.5	
	1-5	
	4.4-22	
	8-40	
	16-80	
Operating time characteristics		
Inverse time characteristics		
Time setting (sec)	Inverse time	0-30sec
	Reset time	Manual reset (Prompt) Reset after 1 Min. (Optional)
Allowable error	Current	± 5%
	Time	± 5% (or ± 0.5 sec)
Control power	Voltage	AC 100-260V
	Frequency	50/60Hz
Aux. contact	Contact	2SPST (When power applied, 1NO/1NC)
	Ratings	3A/250VAC Resistive load
	Operate	(95 ↓ / 96 Close) (97 ↓ / 98 Open)
Insulation resistance	Min 100 MW at 500Vdc	
Surge endurance (IEC 1000-4-5)	1.2 x 50 ms 6kV Apply the standard wave	
Fast transient burst (IEC 1000-4-4)	2.5kV/5min.	
Environment Temperature	Operation	-25-70 °C (-11-158°F)
	Storage	-30-80 °C (-20-176°F)
	Relative humidity	30-90%RH(No freezing)
Trip indicator	Red/Green LED	

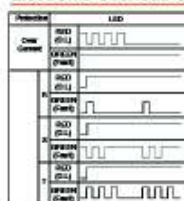


		32AF			
		MNC-9	MNC-18	MNC-32	
Model					
Type	Connection by screw clamp terminals	•	•	•	
	Connection by lugs	-	-	-	
Number of poles		3			
Rated operational voltage, U _e		690V			
Rated insulation voltage, U _i		1000V			
Conforming to IEC607-4-5		1000V			
Conforming to UL, CSA		600V			
Rated impulse withstand voltage, U _{imp}		6kV			
Degree of pollution (IEC60529)		IP20			
Rated operational current I _b (< 55 °C)					
AC-1 AC-3	U _e max 690V	[A]	25	40	50
	300/240V	[A]	11	18	30
	380/400V	[A]	9	15	30
	415V	[A]	9	15	30
	440V	[A]	9	15	30
	500V	[A]	7	13	25
	690V	[A]	5	9	20
UL 508					
NEMA size			00	0	1
Rated thermal current I _t [A]			25	40	50
Single Phase	115V	[HP]	1/2	1	2
	230V	[HP]	1.5	3	5
Three Phase	200V	[HP]	2	5	7.5
	230V	[HP]	3	7.5	10
	400V	[HP]	5	10	20
	575V	[HP]	7.5	15	30

Current Setting



Electronic Overload Operation



Protective Features

Overcurrent: The electronic overload will trip the motor starter when the load is greater than the Full Load Ampere setting and the time setting selected by the two adjustments on the front of the relay labeled RC(A)- Ampere setting and Time- Class trip time (1-30).

Phase Failure: The electronic overload relay will trip in the event of a phase failure or phase unbalanced greater than 70%.

Stall Condition: If load is greater than 170% of Ampere setting for more than 3 seconds the electronic overload will detect a stall condition and trip.

Indicators

The electronic overloads will indicate actual phase loss or overload conditions by the LED's on the relay as indicated in the following chart. The Motor Starter will only indicate a overload trip on the front panel as a steady red LED.



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Motor Circuit Protector Disconnect Specifications

Features

- Without thermal releases
- Magnetic release 13 le max.
- Protective function
 - short circuit

Environmental Data

- Ambient air temperature storage: -50-80 °C
- operation: -20-60 °C
- Ambient temperature compensation: -20-60 °C
- Maximum operation altitude: 2000m (6560ft)
- Protection degree: IP20
- Shock resistance: 25g
- Vibration resistance: 5-150Hz

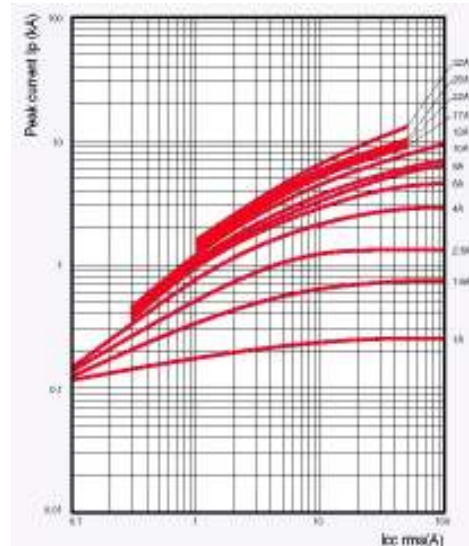
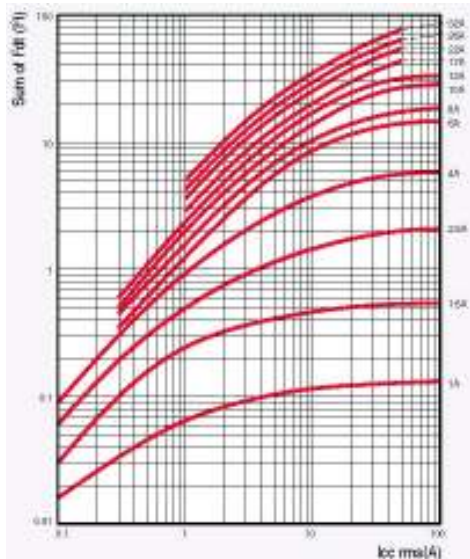


CMS-32HI

Type	Rated operational current I_n [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						Max short circuit current		
				1-phase [HP] (60Hz)			3-phase [HP] (60Hz)			240V [kA]	480V [kA]	600V [kA]
				115V	230V	200V	230V	460V	575V			
CMS-32HI	0.16	-	2.1	-	-	-	-	-	-	100	65	25
	0.25	-	3.3	-	-	-	-	-	-	100	65	25
	0.4	-	5.3	-	-	-	-	-	-	100	65	25
	0.63	-	8.2	-	-	-	-	-	-	100	65	25
	1	-	13	-	-	-	-	-	1/2	100	65	25
	1.6	-	20.8	-	1/10	-	-	3/4	3/4	100	65	25
	2.5	-	32.5	-	1/6	1/2	1/2	1	1.5	100	65	25
	4	-	52	1/8	1/3	3/4	3/4	2	3	100	65	25
	6	-	78	1/4	1/2	1	1 1/2	3	5	100	65	25
	8	-	104	1/3	1	2	2	5	5	100	65	25
	10	-	130	1/2	1.5	2	3	5	7.5	100	65	25
	13	-	169	1/2	2	3	3	7.5	10	100	65	25
	17	-	221	1	3	3	5	10	15	100	30	10
	22	-	286	1.5	3	5	7.5	15	20	100	30	10
26	-	358	2	3	7.5	7.5	15	20	100	30	10	
32	-	418	2	5	7.5	10	20	30	100	30	10	

Thermal Limit on Short Circuit for MCP

Thermal limit in KA^2 in the magnetic operating zone ($U_e=415V$) CMS-32H/HI





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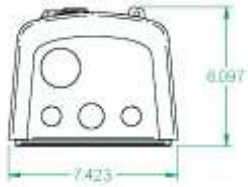
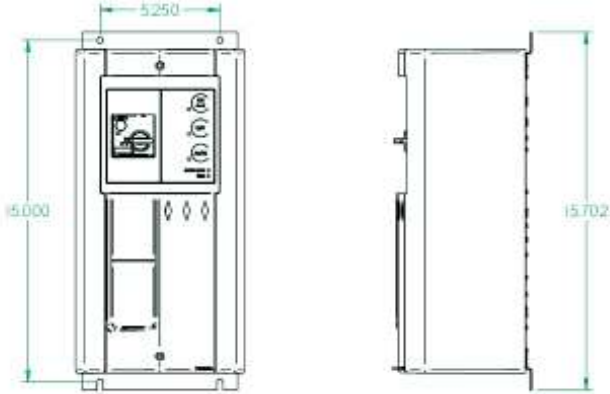
Harold Thompson Pumping and Disinfection

Kuck Mechancial

GMS, Inc.

Physical Dimensions

UL Type 1 Enclosed



UL Type 3R Enclosed

