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APPROVAL REPORT

REVISED MODEL NUMBERS FOR TC SERIES VALVE PROVING CONTROLS

Prepared for:

Kromschröder AG
Postfach 2809
D- 49018 Osnabrück
Germany

Project ID. 3012797
Class 7411
Date: February 22, 2002

Factory Mutual Research Corporation
1151 Boston-Providence Turnpike
P.O. Box 9102
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An  Affiliate

FACTORY MUTUAL RESEARCH
3012797

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TC SERIES VALVE PROVING CONTROLS**

February 22, 2002

from

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D-49018 Osnabrück

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I INTRODUCTION

- 1.1 Kromschröder AG requested Approval for the addition of suffixes to their TC series valve proving controls.
- 1.2 This Report may be freely reproduced only in its entirety and without modification.
- 1.3 These controls will appear in the Gas Safety Shutoff Valves section of the Factory Mutual Research Approval Guide under the heading "TIGHTNESS TESTING EQUIPMENT, for Gas Safety Shutoff Valves" as follows.

Valve Proving Controls. Models TC118 (or 118T), TC218 (or 218T), TC318 (or 318T), TC410 (or 410T)-1K (or N, T), TC418 (or 418T)-10K (or N, T). Checks for leakage of valves in a double-block safety shutoff valve installation by allowing for pressure buildup between the two valves, then checking for pressure loss between the two shutoff valves. If there is no leakage, the logic allows the combustion system to be started. Proving controls eliminate the need for a vent valve and test cocks for tightness testing. **May include W (or R, N) and 05 suffixes as applicable.**

- 1.4 The scope of this report is limited the to the addition of suffixes for currently listed model numbers.

II DESCRIPTION

A "T" suffix is added to the model numbers to indicate valve proving controls for the North American market. W, R, and N suffixes indicate flanged, Rp, or NPT attachment to the fuel valve. Suffix 05 indicates an inlet pressure of 500 mb (7.3 psi). The Z suffix shown in the attached model code is not included in the Approval of these devices.

III MARKINGS

There are no changes to the current markings as described the original Approval reports for these controls.

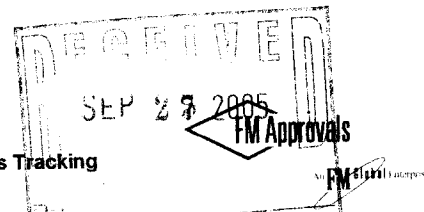
IV EXAMINATION AND TESTS

Examination and tests are not required since there are no changes in design or operating characteristics.

**APPROVED PRODUCT/SPECIFICATION-TESTED REVISION REPORT
OR ADDRESS/MAIN CONTACT CHANGE REPORT**

Page 1 of 2

Manufacturer's Tracking
Number:



SENDER: Forward with updated drawings or other appropriate changes to the attention of FM Approvals. Original forms will be returned showing course of action taken.

Additional forms may be obtained by sending a written request to the attention of the FM Approvals stock room.

FORWARD TO:

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Please provide the following information below: Attention of, Company Name, Address, State & Zip Code.

Mr. Stephan Mock
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Phone: 0049 541 1214 229

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PRODUCT(S) TC116.. and TC116T..

DATE (MM/DD/YY)

09/23/2005

SENDER

Stephan Mock

TITLE

Dipl.-Ing.

MODEL(S) AFFECTED

TC116..

DOES THIS REVISION RESULT IN MODEL/TYPE NUMBER CHANGE TO THE CURRENT APPROVAL GUIDE LISTING?

☒ YES ☐ NO

IF YES, EXPLAIN BELOW OR USE SEPARATE SHEET IF REQUIRED:

HAS THE MANUFACTURING LOCATION, LISTING ADDRESS, TELEPHONE NUMBER OR MAIN CONTACT PERSON CHANGED? IF YES, EXPLAIN BELOW:

☐ YES ☒ NO

INDICATE ORIGINAL FM APPROVALS

PROJECT IDENTIFICATION:

ID: 3012797 ; 3006692 ; 1W9AD.AF

Class 741

Feb. 22, 2002

REASON FOR CHANGE(S)/COMMENTS:

New Versions for VAS, VAD & VAG Safety Shut off Valves. Two adapter plates were necessary two adapt the existing Valve Proofing Control TC116.. with the new Safety Shut of Valve Series. The Valves are rated for 500 mbar inlet pressure:

- Result of the internal tightness test at 750 mbar was a leakage rate of 2,3 cm3/hr
- No rupture or leakage at the Hydrostatic test with 1000 mbar
- Function test was o.k.

Senior FM Test Engineer Mr. David Baer witnessed the test under Project I.D. 3023804

REVISION DETAILS

Adapter plate for mounting TC116 on the left side of the valves
Adapter plate for mounting TC116 on the right side of the valves

AFFECTED DRAWING NUMBER	REVISION	NEW DRAWING NUMBER	REVISION
34338014			0
34338015			0

The new Model designation is marked with a V.
V means for use with safety shut off valves VAS, VAD & VAG.

FOR FM APPROVALS USE ONLY

COMMENTS: Customer ID: 1000004354 MA Ref: 4/2/03

See Page 2

CDL updated - 1W9AD.AF

Master Agreement Implementation Date:

REVISION REPORT J. I.

ACCESS IDENTIFICATION

CLASS NUMBER

013037-283

7411

REVISION ACCEPTED ☒ Yes ☐ No

☒ Third Signature Required

EXAMINED BY

Cheryl A. Gagliardi

DATE

10/25/2005

REVIEWED BY

Donald E. Major

DATE

25-Oct-05

APPROVED BY (Third signature required for listing changes only)

[Signature]

DATE

10/26/05

The TC116V and TC116TV were connected to the VAS, VAD & VAG Safety Shutoff Valves during testing conducted under Project ID 3023804 (test details can be found in PDR 3023804). The TC116V and TC116TV are functionally identical to the TC116 and TC116T. They were modified only to add an adapter plate for mounting to the VAS, VAD & VAG safety shutoff valves.

The listing in the September 2005 Approval Guide, Fire Protection Book, Chapter 12, *TIGHTNESS TESTING EQUIPMENT, For Gas Safety Shutoff Valves*, will be updated as shown below. Additions are shown in bold red underlined text.

Valve Proving Controls. Models TC116 (or 116T, 116V, 116TV), TC218 (or 218T), TC318 (or 318T), TC410 (or 410T)-1K (or N, T), TC418 (or 418T)-10K (or N, T). Checks for leakage of valves in a double-block safety shutoff valve installation by allowing for pressure buildup between the two valves, then checking for pressure loss between the two shutoff valves. If there is no leakage, the logic allows the combustion system to be started. Proving controls eliminate the need for a vent valve and test cocks for tightness testing. May include W (or R, N) and 05 suffixes as applicable.

In addition to the drawings listed on page 1, the following drawings applicable to the TC1, TC2 and TC3 Valve Proving Controls are also being added to the Critical Document List. The TC2 and TC3 were approved under J.I. 1W9A0.AF. The TC1 was approved on Form 797 Project ID 3006692 based on the TC2 and TC3. The drawings will be listed in the CDL under 1W9A0.AF and filed in the same blueprint file.

Document No.	Description	Issue
34212987	Diaphragm Housing	0
34213052	Lower Part	1
34329447	Diaphragm	0
34329450	Diaphragm Guide	0
34329451	Diaphragm Seat	1
34424503	Instruction Manual	10.05
35441648	Bellows	2
35444448	Spacer	0
35444449	Sight	0
35444808	Magnet	1
35444965	Operating Pin	0
35447485	Compression Spring	2
35447513	Assembling Instructions	2
35450277	Nozzle	2
35452017	Lead (UL/CSA)	0
75447360	Pressure Governor	1
75447896	Cover Plate	0
75453306	PCB Layout SMD & THT TC1	0
84765540	TC116 T W05N Tightness Control (USA)	2