Product Change Notification

PCN Number:	PCN-2021-05-K0001	**Date:** 11th May 2021
Title:	New X-Line Electronic Boards	
Description of Change:	KELLER has developed new digital compensation electronics for the X-Line. The new electronics offer an improved specification and are fully backwards compatible with current KELLER communication protocols and software. The new electronics contain a new firmware version with an improved Modbus command set. This improved command set can be used only with new X-Line versions and is described in the latest communication protocol which will be available from the KELLER website once the implementation starts. Current command sets still work with new X-Line versions. Please find further detail such as performance comparisons in the appendix or refer to the new data sheets on the KELLER website.	
Reasons for Change:	Discontinuation of electronic component by manufacturer	
Affected Products:	The following KELLER standard series containing the X-Line electronics are subject to the change: **23X, 23SX, 26X, 33X, 35X, 36X, 36XW, PD-33X** plus any custom design with X-Line electronics (type contains "X", e.g. 10L**X**). The following KELLER standard series containing the X-Line electronics are not subject to this change and may be changed later: 33XEi, 35XEi, 35XHT, 35XHTT, 35XHTC, 36XiW, 36XiW-CTD, 36XWEi, 36XS, 36KyX, 41X, 41XEi, 46X, 46XEi, DCX, LEX1, PD-33XEi, PD-39X, PD-39XEi, PD-41X, PRD-33X plus any custom design with Xi electronics (type contains "Xi", e.g.10L**Xi**)	
Samples:	Samples of the above-mentioned series subject to this change are available	
Estimated Implementation:	KELLER will start the ramp up of the new X-Line electronics in June 2021 and will successively replace the above-mentioned series with new versions. Custom design changes to new electronics will be supported by your KELLER sales engineer who will contact you accordingly.	
Identification Method:	New versions can be identified through the KELLER product number. Relation of current and new numbers is explained in the appendix.	
Last Time Buy Date:	Estimated May 2022. KELLER recommends making the change to the new version immediately due to limited quantity of the current version.	
Customer Impact:	KELLER product number will change; your KELLER sales engineer will supply your new product number upon your next order. For further information see appendix. KELLER does not expect any negative customer impact from the change.	
Customer Response:	Please send your comments, requests for additional information or support to your KELLER sales engineer and forward this change notification to the appropriate persons in your company.	

KELLER AG für Druckmesstechnik
St. Gallerstrasse 119
CH-8404 Winterthur
+41 52 235 25 25
info@keller-druck.com
KELLER AG is certified to ISO 9001
www.keller-druck.com

Appendix PCN-2021-05-K0001 - X-Line Change Overview

Overview – Product Number Change of Standard Products

Series	Current Product Number	New Product Number
23X	232305.xxxx	232356.xxxx (23SX)
23SX	232316.xxxx	232356.xxxx
26X	232605.xxxx	232645.xxxx
33X	233305.xxxx	233345.xxxx
35X	233505.xxxx	233545.xxxx
36X	233605.xxxx	232645.xxxx (26X)
36XW	233610.xxxx	233650.xxxx
PD-33X	233325.xxxx	233365.xxxx

Please note:

- Series 23X will be integrated into series 23SX
- Series 36X will be integrated into series 26X

Summary of Improvements of The New Electronic Boards

- Quicker start-up time (power supply ON)
- Higher internal measurement rate
- Higher limiting frequency (analog interface)
- Higher resolution (digital)
- Better signal stability (digital noise-free)
- Improved Modbus command set
- Other digital protocols available such as IO-Link, CANopen

Electronic Boards Performance Comparison

The following tables show comparisons between the performance of current and new boards:

4…20 mA (2-wire) + RS485

	Current Board	New Board
Identification (Class.Group)	5.20	5.24
Power Supply	8…32 VDC	
Power Consumption (without communication)	3,2...22,5 mA	3,5...22,5 mA
Overvoltage protection and reverse polarity	n/a	± 32 VDC
RS485 overvoltage protection	n/a	± 18 VDC
GND-CASE insulation	> 10 MΩ @ 300 VDC	
Start-up time (power supply ON)	< 600 ms	< 250 ms
Internal measurement rate	400 Hz	> 1800 Hz
Limiting frequency (analog)	n/a	> 300 Hz
Resolution (digital)	0,002 %FS	0,0005 %FS [1)]
Signal stability (digital noise-free)	n/a	0,0025 %FS [2)]

[1)] Serie 23SX / Series 26X - Resolution (digital): 0,002 %FS
[2)] Serie 23SX / Series 26X - Signal stability (digital noise-free): 0,01 %FS

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0...2,5 V / 0…5 V / 0...10V (3-wire) + RS485

		Current Board	New Board
Identification (Class.Group)		5.20	5.24
Power Supply	0…2,5 V	6...32 VDC	8...32 VDC
	0…5 V	8...32 VDC	8...32 VDC
	0…10 V	13...32 VDC	13...32 VDC
Power Consumption (without communication)		< 8 mA	
Overvoltage protection and reverse polarity		n/a	± 32 VDC
RS485 overvoltage protection		n/a	± 32 VDC
GND-CASE insulation		> 10 MΩ @ 300 VDC	
Start-up time (power supply ON)		< 600 ms	< 250 ms
Internal measurement rate		400 Hz	> 6000 Hz
Limiting frequency (analog)		n/a	> 1000 Hz
Resolution (digital)		0,002 %FS	0,0005 %FS [1)]
Signal stability (digital noise-free)		n/a	0,0025 %FS [2)]

0,1...2,5 V (3-wire) + RS485

	Current Board	New Board
Identification (Class.Group)	5.20	5.24
Power Supply	3,2…32 VDC	
Power Consumption (without communication)	< 5 mA	< 8 mA
Overvoltage protection and reverse polarity	n/a	± 32 VDC
RS485 overvoltage protection	n/a	± 32 VDC
GND-CASE insulation	> 10 MΩ @ 300 VDC	
Start-up time (power supply ON)	< 600 ms	< 250 ms
Internal measurement rate	400 Hz	> 1800 Hz
Limiting frequency (analog)	n/a	> 300 Hz
Resolution (digital)	0,002 %FS	0,0005 %FS [1)]
Signal stability (digital noise-free)	n/a	0,0025 %FS [2)]

RS485 (digital only)

	Current Board	New Board
Identification (Class.Group)	5.20	5.24
Power Supply	8…32 VDC	3,2…32 VDC
Power Consumption (without communication)	< 8 mA	
Overvoltage protection and reverse polarity	n/a	± 32 VDC
RS485 overvoltage protection	n/a	± 32 VDC
GND-CASE insulation	> 10 MΩ @ 300 VDC	
Start-up time (power supply ON)	< 600 ms	< 250 ms
Internal measurement rate	400 Hz	> 1800 Hz
Resolution (digital)	0,002 %FS	0,0005 %FS [1)]
Signal stability (digital noise-free)	n/a	0,0025 %FS [2)]

[1)] Serie 23SX / Series 26X - Resolution (digital): 0,002 %FS

[2)] Serie 23SX / Series 26X - Signal stability (digital noise-free): 0,01 %FS